SHIPPING AND SHIPBUILDING MARKETS 2002

BARRY ROGLIANO SALLES
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The BRS annual review of world shipping and shipbuilding developments in 2001 and prospects for the coming months…

VIRTUAL AND REAL

Only some hyper-imaginative video game scriptwriters had conceived the destruction of New-York's twin towers. September 11th, sadly, the real overtook the virtual, shattering the confidence of the most powerful nation, questioning the very notion of risk, and undermining the world's biggest insurance and reinsurance groups.

This unthinkable drama will have little effect on the shipping industry, apart from temporarily on cruises, but it has been a brutal reminder of the worsening world economic situation during the year 2001.

As from the second quarter, the slowdown in the American economy, followed by Europe, weighed heavily on seaborne trade and thus on freight rates, first with dry bulk ships and containers, then somewhat later on tankers, throwing a light on the fear of overcapacity.

Even though the shipping world is accustomed to cycles, they are nonetheless aggravated by unreasonable actions of players outside the market, financial and fiscal investors - such as in Germany with containerships – who inflate newbuilding orders beyond all reason; virtual in the hope of non-ending growth, real in the actual economic downturn and overcapacity.

This year has also been marked by the meltdown of technology shares, which has affected all the financial markets, although it is not the technology itself to blame but that of irrational market values.

In shipping as in other sectors, e-business counts its survivors amongst the websites which have been developed on the basis of the real service provided.

In the energy business, a leading company, Enron, a model of its kind by inventing, innovating, and arbitrating as a market-player in new

energy areas, has collapsed. Its virtual success was stricken down by the real needs and by questionable accounting methods; virtual commitments off-balance sheet, real accounts in balance sheet, or the reverse?

This rude awakening reminds everyone that markets impose inherent rules like gravity, impossible to ignore, and that the real economy has taken a cruel revenge this year over the virtual economy.

In France the incentives for promoting the French flag fleet are being held back whilst some of our European neighbours have made successful progress and are able to expand their fleet under national flag. French shipping policy no longer corresponds to our economic ambitions and here again we can deplore the virtual political discussion compared to the real action needed.

The much hoped recovery, whose return is predicted by some in the course of the second half of 2002, will depend primarily on the health of the American economy; but a close watch has to be kept over the Japanese currency whose weakness could bring about a series of devaluations in the Far East, which could put into question the fragile balance recovered since 1997, and weigh heavily on newbuilding prices amongst others.

The prosperity of the shipping sector will obviously depend on the economic revival but also on the respect shown to the strong balancing forces at play – newbuildings, fleet in service, demolitions – to which any excesses will quickly bring us back to the fundamental reality of supply and demand. ■

THE SHIPBUILDING MARKET IN 2001

Whereas the year 2000 was exceptional, 2001 despite some highlights was a year of contrasts:

1. The volume of new orders is down considerably with about 36.5 million gross tons as compared to 46.1 million gt last year.

2. This reduced volume of orders has brought to an end the increase in prices which occurred in 2000; as from mid 2001 there has been a drop sometimes quite sharp despite the importance of the orderbook world-wide.

3. The level of the orderbook reached in the 2nd quarter of 2001 was unprecedented with over 75,7 million gt and roughly maintained until the end of the year, representing an annual growth of about 15 %.

4. A certain stability still prevails between the various shipbuilding countries. Korea remains in top position with over 30 million gt on order, followed by Japan with over 20 million gt. Europe and China are in third and fourth place with about 8.5 million and 7.4 million gt respectively.

5. European shipyards were unable to get the reintroduction of subsidies from their respective official bodies, which were stopped last year, whereas the orders of specialised ships were scarce this year, with the notable exception of LNG carriers which were taken up essentially by Korean and Japanese shipyards.

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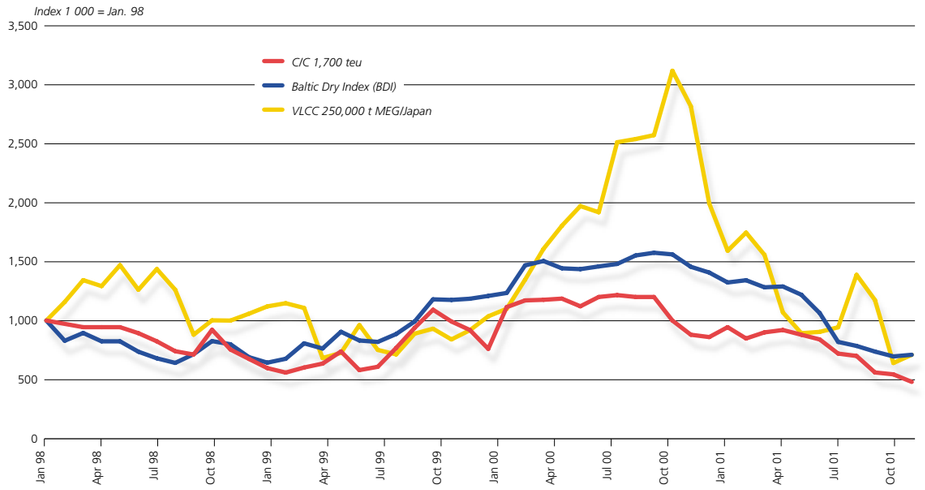
In October 2000 the IMF announced a reduced growth for 2001 but the prospects remained positive.

IMF Forecast (as % of GDP)

	World	USA	Japan	E.U	Korea	China
1999	3.4	4.2	0.2	2.4	10.7	7.1
2000	4.7	5.2	1.4	3.5	8.8	7.5
2001	4.2	3.2	1.8	3.4	6.5	7.3

IMF - October 2000

Freight rates evolution since 1998



Unfortunately these economic forecasts have continuously been lowered. The IMF published successively 3.2 % in May 2001, then 2.6 % in October 2001, then again had to readjust its figures taking into account the tragic events of September 11th.

After an exceptional world growth of 4.7 % in 2000, 2001 was also an outstanding year but at the other end of the scale with a growth of only 2.4 %, one of the lowest levels over the last ten years.

IMF Forecast (as %, of GDP)

	World	USA	Japan	E.U	Korea	China
2001	2.4	1.0	- 0.4	1.7	2.6	7.3
2002	2.4	0.6	- 1.0	1.3	3.2	6.8

IMF - December 2001

The growth of world trade in volume has slowed down dramatically to virtually nothing in 2001, as compared to an increase of over12 % in 2000.

Freight rates in the three most important sectors of shipping - oil, dry bulk, and containers – after having been very strong in 2000, have fallen sharply. Average earnings in the oil sector show a certain resistance due to the tightening of quality constraints being adopted by oil companies. Tankers have to meet stricter standards and older ships are being discarded.

Whilst the pace of orders remained strong during the first half, the uncertainty in short-term prospects and a significant deterioration in freight rates meant that owners during the summer started deserting the newbuilding market.

New orders during the year

(million dwt)	2000	2001
Tankers > 25,000 dwt	34.7	24.8
Bulkers > 15,000 dwt	17.6	7.7
Containerships > 1,000 teu	13.7	7.1

Prices which had increased throughout 2000, while still remaining relatively attractive since they were below levels that were prevalent before the Asian crisis of 1997-1998, were not sufficient to entice potential buyers looking to preserve their cash-flow and who decided to postpone their investments to a later date.

The world orderbook after having outpaced the 75 million gross ton mark in June 2001, stabilised until the end of the year.

The geographical breakdown in orders remains relatively constant, whereas the majority of the increase seen last year went to Korea.

However the breakdown in ships' types has changed. In 2000 the three principal newbuilding cycles, that of tankers, bulk carriers, and containerships, followed the same pattern as illustrated in the graph of 'Percentages of ships on order over existing fleet'.

This graph illustrates that the dry bulk carrier and containership cycles started a little earlier (early 1998) than that of tankers (early 1999) and hit their historic highs at the start of 2001 with respectively

Orders by quarters *(in million gross tonnage)* *Source : Lloyd's Register*

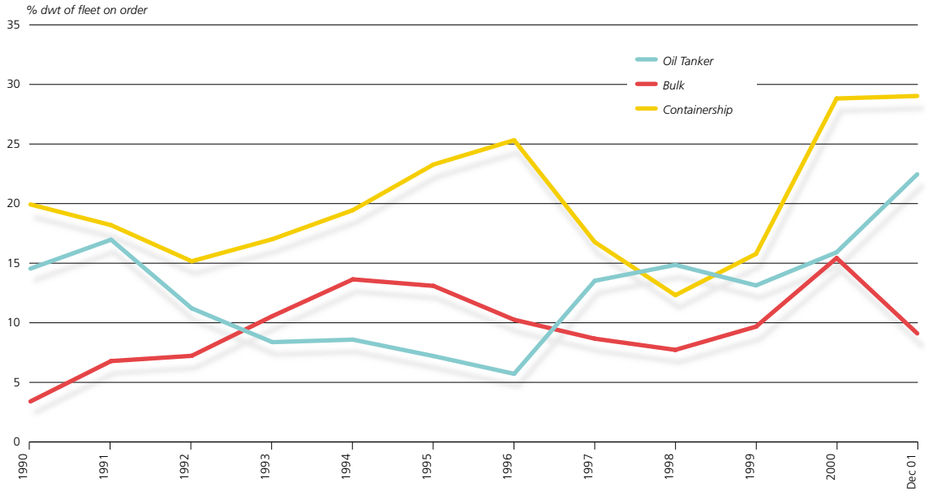
		Japan	South Korea	China	Western Europe	World Total
1998	Quarterly av.	2.745	2.205	0.165	1.014	6.675
1999	Quarterly av.	2.174	2.961	0.753	0.710	7.250
2000	March	3.590	6.453	0.408	1.293	12.844
	June	3.621	7.102	1.193	0.729	13.654
	September	2.815	3.950	0.701	1.140	9.717
	December	3.448	3.285	0.319	1.468	9.877
2001	March	4.952	3.784	0.565	1.523	12.061
	June	3.910	3.701	0.669	0.593	9.821
	September	1.819	2.974	0.508	0.193	5.635
	December	3.870	1.382	2.379	1.066	8.981
% growth 2001/2000		8.0%	-43%	57.2%	-27.1%	-20.8%

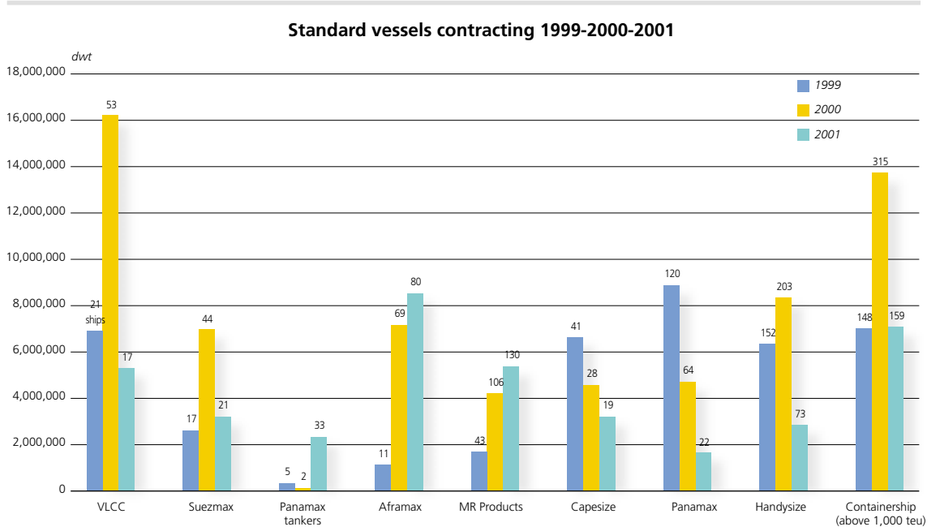
Word orderbook since 1990 *(in million of gross tonnage)* *Source : Lloyd's Register*

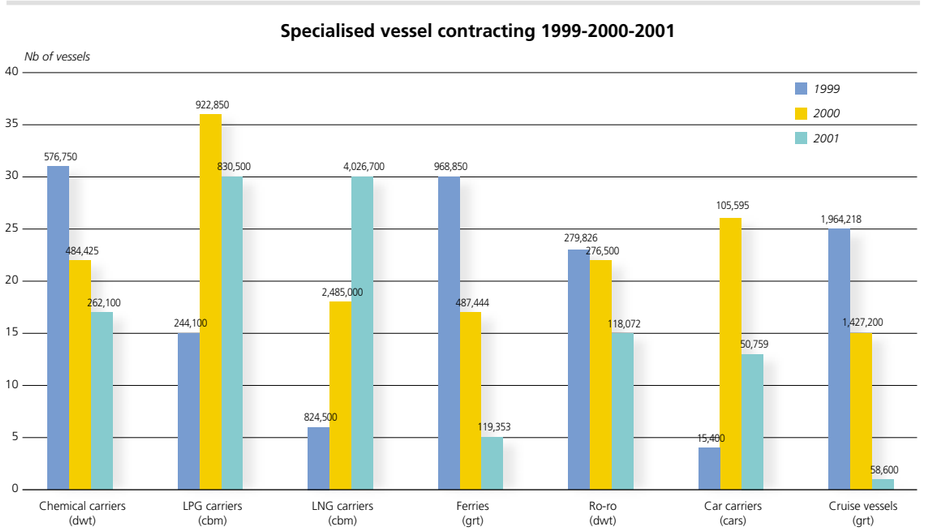
	South Korea	Japan	China	Western Europe	Eastern Europe	Rest of the world	Total
1990	8.7	13.5	1.1	8.3	4.4	3.0	39.0
1991	7.8	14.9	1.4	9.2	3.8	3.2	40.3
1992	7.9	14.4	2.0	8.4	4.4	**3.3**	40.4
1993	8.6	11.1	2.0	8.1	4.5	2.1	36.4
1994	10.9	13.1	1.9	8.2	5.2	2.6	41.9
1995	13.9	13.7	2.0	8.2	5.8	2.5	46.1
1996	13.2	13.7	2.7	8.3	4.8	2.6	45.3
1997	15.9	16.4	3.0	8.3	4.5	2.7	50.8
1998	19.0	19.2	2.7	8.9	4.0	2.7	56.5
1999	20.0	17.4	3.3	8.1	3.8	2.8	55.4
2000	28.1	17.3	5.0	8.1	4.8	3.1	66.4
1st qu. 2001	30.6	19.3	5.4	**9.4**	6.1	3.2	74.0
2nd qu. 2001	30.9	20.4	5.3	9.1	**6.4**	3.1	75.2
3rd qu. 2001	**31.3**	19.2	5.4	8.5	6.2	2.9	73.6
4th qu. 2001	30.3	**20.8**	**7.4**	8.5	5.9	2.9	**75.8**

** Average quaterly tonnage on order except for 2001*

Percentage of the active fleet on order by type







16 % for dry bulk carriers and significantly more for containerships with 28 %. The bend in these two curves right from the start of 2001 indicated already a certain apprehension and a real reduction in the orders for dry bulk carriers and containerships. Tonnage of dry bulk carriers on order declined from 39.5 to 25.2 million dwt and that of containerships remained around 21 million dwt.

The orderbook for tankers continued to rise to reach a figure of 22 % of the existing fleet thus surpassing the previous historic record of 17 % in 1991. The tonnage of tankers on order increased in 2001 and went from 46.1 to 64.6 million dwt. This prolongation of the tanker cycle applies particularly to the categories between 35,000 and 120,000 dwt.

Specialised tonnage, with the exception of LNG carriers, has seen new orders declining considerably.

Cruise ship operators which made massive investments in 1999 and to a lesser extent in 2000, only made a single new order in 2001.

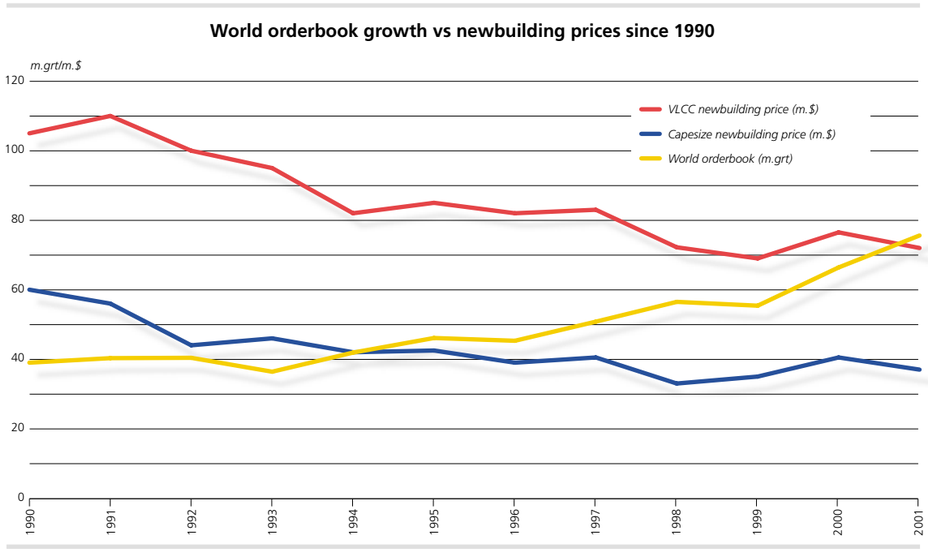
The LNG carriers orderbook rose from 824,000 cbm in 1999 to 2,485,000 cbm in 2000 then to 4 026 700 cbm in 2001, nearly 50 % of the existing fleet. A number of these orders are speculative and driven by the prospects of a rapid development in this energy source.

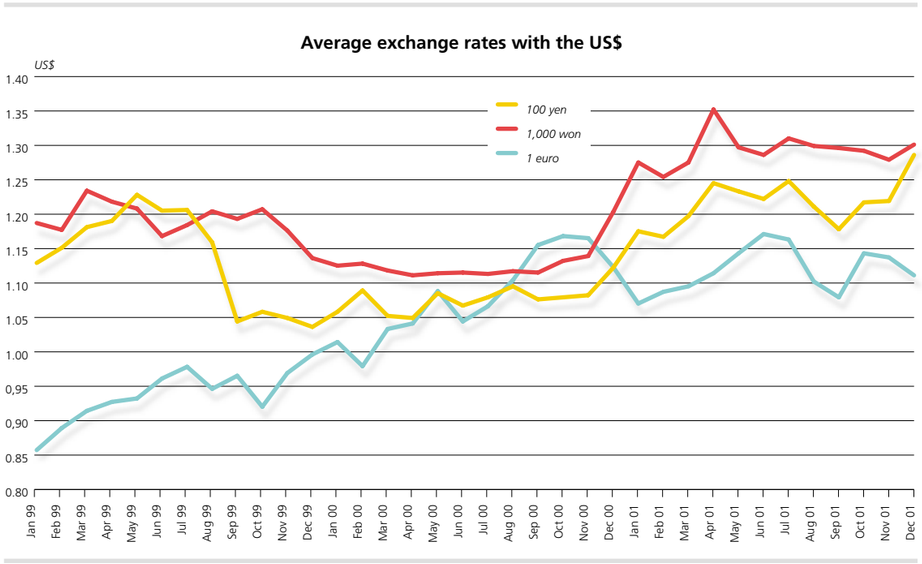
The increase in newbuilding prices, which occurred in 2000 after ten years of decline, has ended. Prices, however, remained firm in the first half. But they began to fall during the summer, first of all with bulk carriers, then with containerships, and finally in the autumn with tankers.

Bro Elizabeth
37,300 dwt, blt 2001 by Treci Maj., owned by Broström Tankers SA

Newbuilding prices variations (in million US$)

		4Q1999	4Q2000	4Q2001	1992
Tankers	**VLCC**	70	78	70	101
	Suezmax	43	52	45	64
	Aframax	34	41	36	50
	IMO II 45,000 dwt	25	29	26	33
Bulkers	**Capesize**	35	40	36	47
	Panamax	22	23	20	30
	Handymax	20	21	19	25





The decline in freight rates is such that some owners, already obliged to take drastic measures such as putting some newly delivered ships into lay-up, have decided to undertake with more or less success, new negotiations with the shipyards, either to postpone deliveries on recent orders, or even wherever possible to cancel them.

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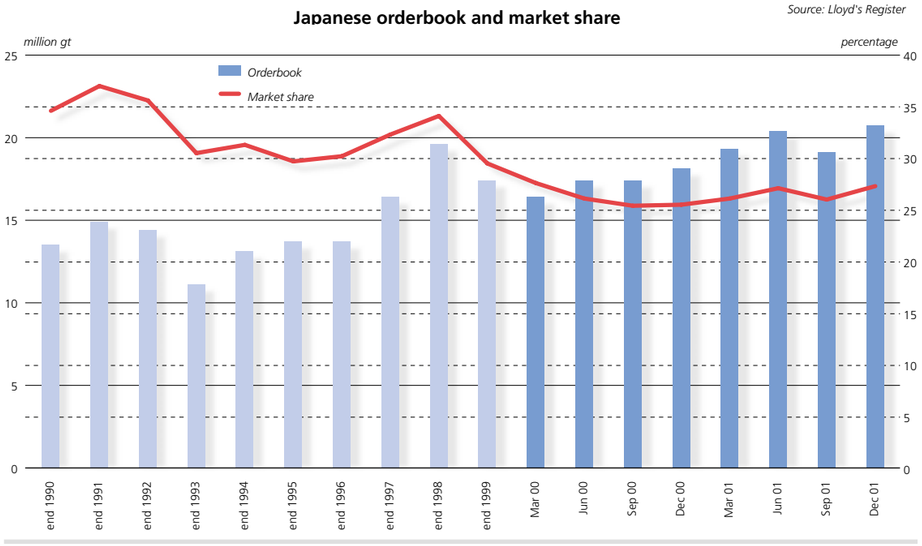
Japan

Japan has performed well in capturing slightly more new orders this year compared to last year, contrary to its main competitors Korea and Europe. Japan took almost 40 % of the world new orders, with about 14 million gt. The existing orderbook has increased from 18.1 million gt (end 2000) to more than 20.7 million gt (end 2001). Japan has also kept its market share, which is



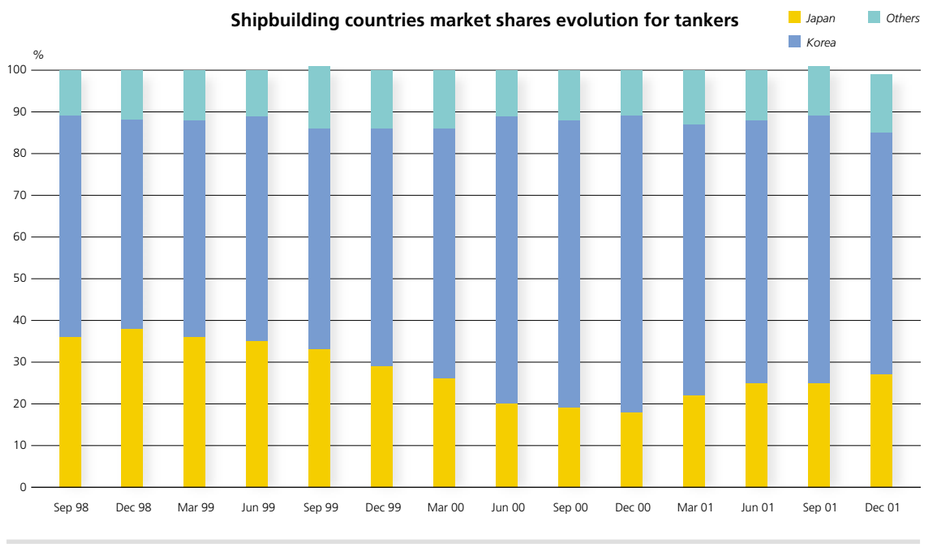
North Defiance
16,850 dwt, blt 2001 by Fukuoka Shipbuilding, owned by Tachibanaya and long-term chartered to Arrow Tanker USA

slightly above a quarter of the world's existing orderbook.

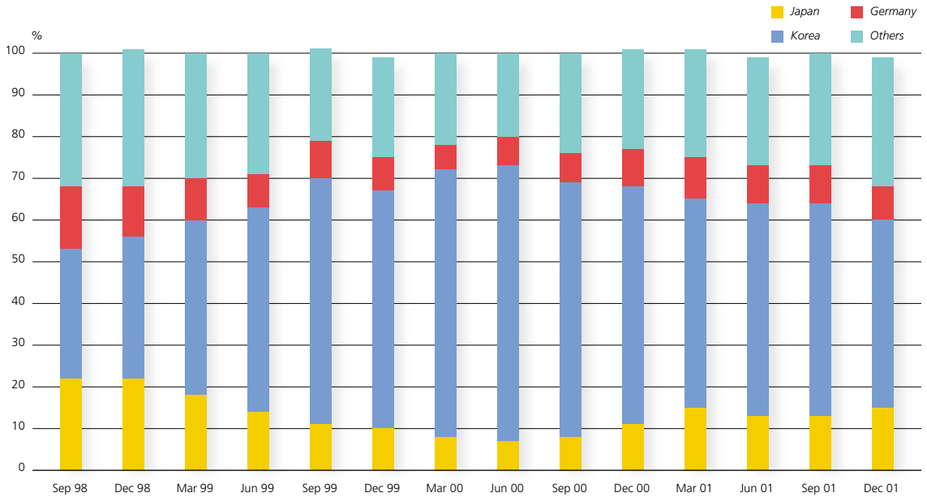
Japanese shipbuilders were often able to offer better delivery dates during the first half of 2001, stealing a march over their Korean rivals who in 2000 got fully booked up until the beginning of 2004.

They are taking advantage also of the yen's depreciation against the dollar by some 15 %. Whereas in 2000 the yen fluctuated in a range between 105 and 110 yen/$, it broke the 120 yen/$ barrier at the start of the first quarter, to then fluctuate between 120 and 125 yen/$ before finishing the year above 130 yen/$. Its exchange rate has become especially attractive compared to the Korean won and the Chinese yuan which remain closely linked to the dollar.

Japanese shipyards which have traditionally favoured the construction of bulk carriers, where they



Shipbuilding countries market shares evolution for containerships



hold some 60 % share of the market, have managed to regain a part of the market from their Korean competitors in the construction of tankers and even containerships.

The market share for tankers has gone up to 27 % end 2001 after having fallen successively from 38 % end 1998, to 29 % end 1999 and 18 % in 2000.

For containerships this share has gone up to 15 % end 2001, having regressed from 22 % end 1998, to 10 % end 1999, and to 11 % end 2000.

Japanese shipbuilders know that they need to continue making efforts to be more competitive. Their main concern is to prevent a new deterioration in newbuilding prices. The continuous progress in building capacity, especially from China, coupled with probable and long-lasting decline in demand as from 2002, present serious threats.

The President of the Japanese Shipbuilding Association, Toshimichi Okano, has warned against a competitive drive based on increased volumes.

In order to ensure a better balance between supply and demand, Japan is proposing to adjust its production by carrying out a regrouping of newbuilding sites.

NKK and Hitachi have thus announced at the end of the year their decision to merge their shipbuilding operations. By deciding to close one of the six docks of this new grouping, which has taken the name of Universal Shipbuilding, they have started proceedings towards restructuring and shown the way forward in achieving a better readjustment of supply and demand. At a time when it is also important to be big enough to benefit from economies of scale, Universal Shipbuilding becomes after Mitsubishi Heavy Industries, the second largest shipyard in Japan with Imabari.

Namura has taken control over Hakodate Dock Shipbuilding. Sumitomo Heavy Industries and Kawasaki Heavy Industries are studying the possibility of spinning off in the near future their shipbuilding activities from their respective groups. This restructuring could take place in 2002. The regroupings between Kawasaki, Mitsui and IHI are still under discussion but do not seem to be advancing. Kawasaki and IHI who signed a co-operation agreement in 1999 have renounced going further for the moment. It is nonetheless likely that the two companies will spin-off their shipbuilding activities.

The small and medium shipyards could be looking for their part to find a form of co-operation between themselves or association with some of the bigger shipyards.

This move towards de-consolidating and downsizing also has its exceptions. Thus Iwagi Zosen seems to want to leave shiprepairing, and to concentrate on newbuilding aiming to producing five to six Handymax per year.

In order to face a doubtless difficult 2002, Japanese builders can also bet on a further depreciation of the

Fouesnant
6,902 dwt, blt 2001
by Shin-Young,
owned by Socatra

yen against the dollar, whilst Japan goes through its recession. Nonetheless, on December 27th 2001, the Chinese daily newspaper – the People's Daily – sounded a warning shot in writing: "If the yen continues its depreciation trend, this will force other Asian countries to devalue. Given today's slowdown in world growth, this could have consequences worse than the 1997-1998 Asian crisis."

Korea

The orderbook of Korean shipyards had gone from 22.7 million gt end 1999 to 30.5 million gt end 2000. In 2001 Korea consolidated its position.

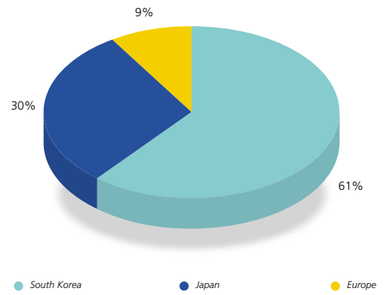
The orderbook has maintained at around 30 million gt, which gives the country more than 40 % of market share. Korean builders have taken around 11 million gt of new orders. But it has been impossible for them to repeat their exploits of last year, as the volume of new orders has declined by some 57 %.

If the commercial policy of Korean shipyards has been less aggressive than last year's (given their orderbook, there was no reason to be), they nonetheless distinguished themselves this year by capturing the majority of orders for LNG carriers.

Shipbuilding has become an extremely important national industry in Korea based on turnover, on numbers of employees and on its contribution to the commercial balance of the country. The three biggest Korean shipyards Hyundai, Daewoo, Samsung each concentrate on a shipbuilding tonnage equivalent to all the shipyards of the European Union, contrary to Japanese and European yards which are very dispersed.

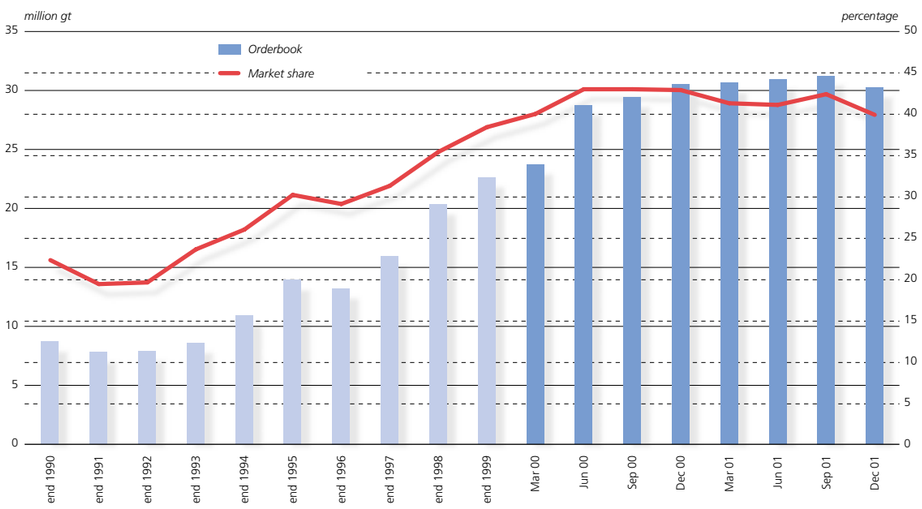
Probably for the first time ever, a Korean organisation – the Institute of Korean Maritime Affairs – made known at the beginning of 2001 its fear of an overcapacity in the industry forecast for 2002, estimated at 5 to 6.5 million gt between 2002 and 2005 for an annual demand of 27.5 million gt,

LNG carriers: market share of the orderbook by country of build in cbm end 2001



South Korean orderbook and market share

Source: Lloyd's Register



and at 9 to 10.5 million gt between 2006 and 2010 for an annual demand of 23.5 million gt.

Korean shipyards will need to undertake, as well, a certain number of decisions to cope with a declining demand and an increase in competition, from the Japanese but also from the Chinese. Will they, as was the case in the 90's, become more competitive by increasing yet again their production and in taking market share from their competitors or will they on the contrary reduce their capacity and adjust to the new demand levels in order to try to maintain prices and preserve their returns?

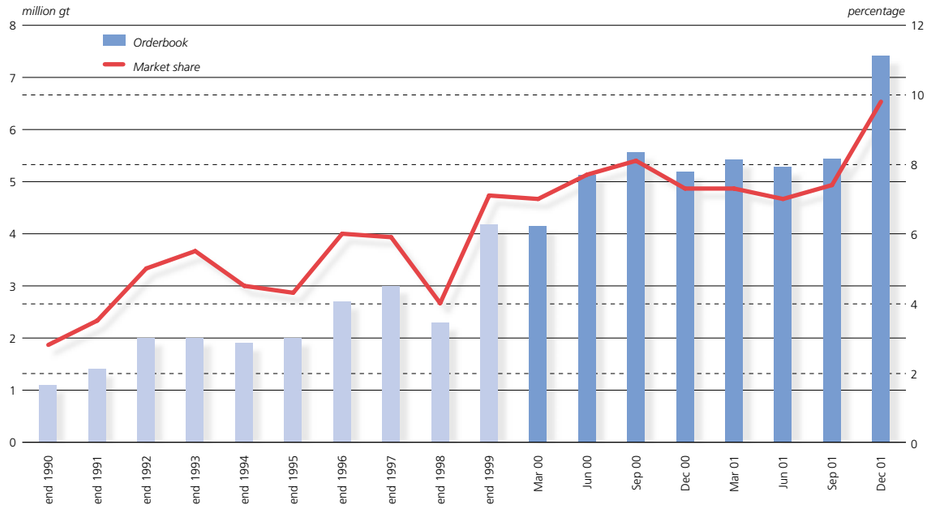
Korean shipbuilders can hope for a new depreciation of the won which has been wavering around 1,300 won/$ since the beginning of 2001. This would allow Korean shipyards to post better results.

They could also bet on obtaining several domestic orders, as was the case in the early 90's. But the situation has changed since the Asian crisis and the possible contribution of Korean owners has become relatively small given the enormous needs of their builders.

China *launches it's first Ro-pax newbuilding at Guangzhou Shipyard for Swedish owner Rederi Gotland*

Chinese orderbook and market share

Source: Lloyd's Register



Note: the jump in new orders observed during the fourth quarter 2001 is mainly due to a late recording of orders that have been passed all along the year.

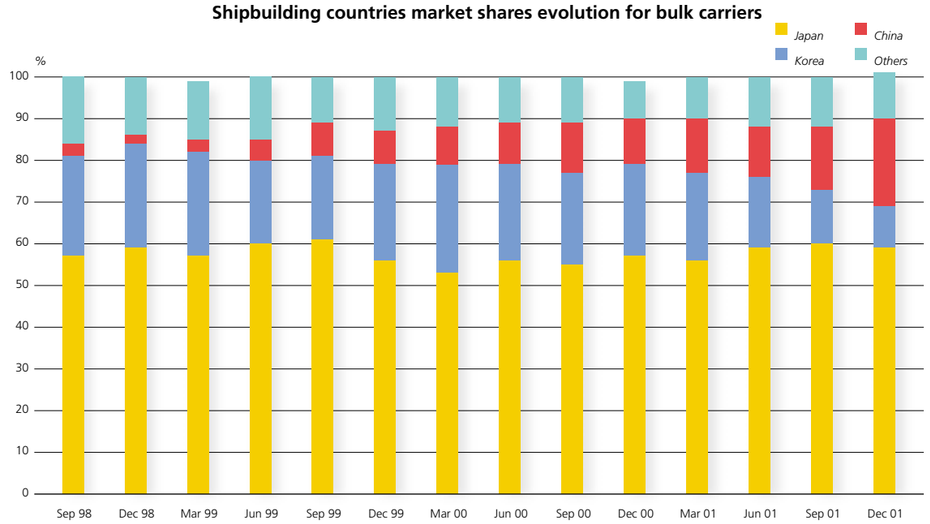
China

China has not only consolidated its position but has made a substantial jump. The existing orderbook of Chinese shipyards has reached a new national record of 7.4 million gt end 2001 lifting their market share to almost 10 % of the world orderbook.

The projects for expansion continue and the number of Chinese shipyards with VLCC docks has increased:

◆ The new shipyard of Waogaoqiao (Shanghai) has officially started the first cutting of steel plates

Shipbuilding countries market shares evolution for bulk carriers



for a Capesize bulk carrier in November 2001; this shipyard has two VLCC docks.

◆ The shipyard New Century (ex Jingjiang), situated in the province of Jiangsu, has also inaugurated a new VLCC dock.

◆ The construction of a VLCC dock at the Hudong shipyard, currently restricted to the building of Panamax and containerships, is well advanced and should enter into service as from April 2002.

◆ Dalian Shipyard also has a project to build such a dock.

◆ Dalian New Shipyard plans to convert one of its slipways into a VLCC dock.

China already possesses seven docks for VLCCs and should add another four before 2005. Japan and Korea have respectively nine and twelve.

Some restructuring has already been decided:

◆ Hudong and Zhonghua, situated on opposite banks of the river Huang Pu in Shanghai have decided to join forces.

◆ One of the oldest Chinese shipyards, Shanghai Shipyard, will leave the heart of Shanghai as from 2004 and open a newbuilding site downstream on the island of Chongming Dao.

The pressure of Chinese shipyards is beginning to be felt. Their market share in the building of bulk carriers has gone from 2 % at the end of 1998 to 21 % at the end of 2001, at the expense principally of Korean shipyards which have regressed in the same period from 25 % to 10 %, whilst Japanese builders have maintained their share of about 55 / 60 %.

Chinese shipyards are more and more active in the sector of large tankers and of containerships - with Suezmax orders at Bohai and containerships at Shanghai Shipyard. They hope to build LNG carriers and notably those destined to supply the province of Guangdong with natural gas as from 2005-2006.

China has clearly shown its ambitions to surpass the 10 million gt order mark very quickly. C.S.I.C. and C.S.S.C., which represent the Chinese shipyards under direct state control, hope to expand their building capacity to 7 million gt from 2005 according to the China Ship News (March 2001).

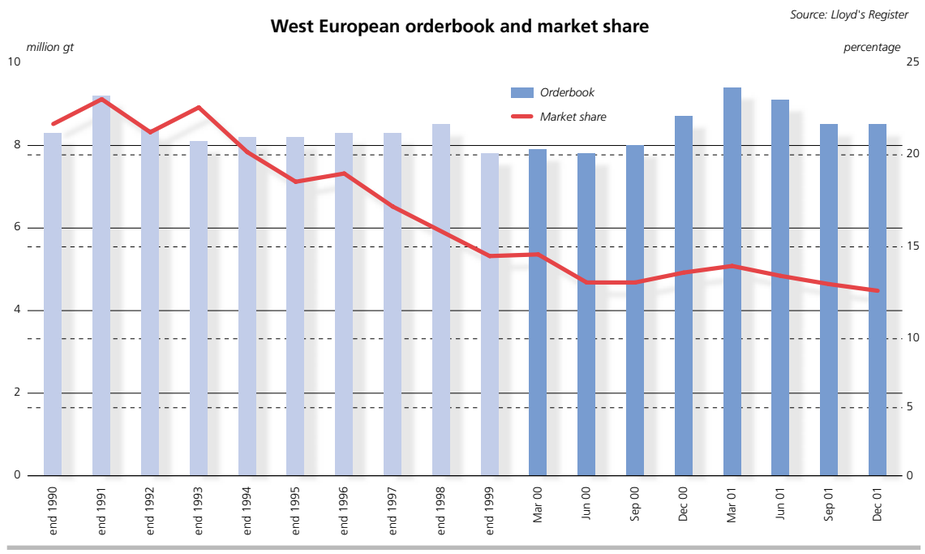
China can count on their powerful and ambitious domestic owners who will be able to order ships bigger than the Panamax size, now that their own yards are capable of building all types of vessels. The fixed parity of the yuan to the dollar could however be a handicap.

Europe

After a jump in orders in the last quarter of 2000, doubtless provoked by the anticipated ending of subsidies to shipyards and which had allowed the European orderbook to reach 8.7 million gt, new orders have dropped off by some 30 % and the backlog orders of European shipbuilders have slipped again to reach a level of 8.5 million gt at the end of the year.

West European orderbook and market share

Source: Lloyd's Register



The market share of European shipyards has again been slightly cut back from 12.3 % in the last quarter of 2000 to 11.2 % in the fourth quarter of 2001.

Demand for specialised ships, which constitutes a large share of the European production (cruise ships, chemical carriers, ro-ros, ferries), is extremely weak and new orders for these ships are in free fall.

The price of shipbuilding in Europe has theoretically increased by 9 % following the suppression of subsidies decided in December 2000 and the economic environment has definitely deteriorated.

Cruise ship operators who massively invested in 1999 and 2000 (the orderbook represents around 40 % of the existing fleet in gt) have stopped their investments. These cruise lines are in addition directly concerned by the dramatic events of September 11th, as are all airlines and the tourism industry. The bankruptcy of three of these companies, Renaissance Cruises, Commodore Cruise Line, and AMCV in the U.S., shows the difficulties in this sector.

But the major factor is perhaps the inability of European shipyards, with one exception, to attract orders of LNG carriers (even though reputed to be the archetype ship with a high added value) and this despite the healthy increase in demand in 2001 and with a euro / dollar exchange rate extremely favourable.

The dispute between European shipyards and their Korean counterparts has continued. Brussels tried hard to obtain from the Korean shipyards an increase in their prices by 15 %, without knowing exactly how such a measure could be applied in such a competitive market. Korea proposed 5 % but no agreement has been reached.

The threat by the Brussels Commission to lodge a complaint with the World Trade Organisation has not been carried out. No other concrete action seems to be envisaged and European shipbuilders have failed to obtain a revival of the subsidies or other defensive measures even of a temporary nature.

The difficulties for European builders are likely to get bigger in 2002. It will be even harder to secure new orders without any subsidy and in a depressed market. Any strengthening of the euro against the dollar threatens to make the struggle impossible.

Infinity
91,000 gt, blt 2001 by Chantiers de l'Atlantique, operated by Celebrity Cruises

An important reduction in European shipbuilding capacity is again foreseeable.

France

The orderbook in France has gone from 920,000 gt end 2000 to 670,000 gt end 2001.

As with their main competitors in this sector, the Chantiers de l'Atlantique has registered no new order for cruise ships in 2001, outside the reconfirmation by MSC of a second ship ordered in 2000. It enjoys however an important orderbook which goes up to 2004, with eight cruise ships, two frigates for the Royal Moroccan Navy and two LPD contracts for the DCN.

Their main clients in the cruise industry are unlikely to invest again before the second half of 2002.

They delivered five cruise ships this year:

◆ the 'R Eight', last of the series of eight, 702 passengers for Renaissance Cruises,

◆ the 'Summit' and the 'Infinity' of 1,950 passengers to Royal Caribbean Cruises/Celebrity,

◆ the 'European Vision' of 1,500 passengers for Festival,

◆ the 'Seven Seas Mariner' of 700 passengers for Radisson Seven Seas.

The other shipyard of the group, Alstom Leroux Naval, has taken orders for:

◆ a hydrographic vessel for the DGA,

◆ two equipped buoy-laying boats for Socarenam,

and delivered two fast ferries to Greek owner Nel Lines; one with a capacity of 800 passengers, 190

cars, 35 knots, and the other 1,800 passengers, 442 cars, 40 knots.

The Piriou shipyard has taken orders for:

- two crew boats for Surf,
- two tuna purse seiners for Fuentes,
- a stern trawler for Vincent.

and have delivered:

- two tuna seiners, one for Armements Réunionnais and the other for Armement des Mascareignes,
- two trawlers, one for Armement Hamon and the other for Armement Nocca,
- a tug for tha Papeete Port Authority.

The Constructions Mecaniques de Normandie (CMN) have taken orders for:

- three tank barges for CFT,
- two sailing ships.

and have delivered:

- two motor-yachts, one for Lux Yachting and the other for Bermie Nautic.

Germany

With more than 2 million gt of existing orders at end 2001, Germany leaves its top position within the European Union to Italy. As per last year she comes after Poland and occupies sixth place in the world.

Germany's orderbook comprises mostly containerships and cruise ships with respectively more than half and nearly a quarter of orders in terms of tonnage.

Germany was hoping together with Italy and Spain that the Brussels Commission would maintain shipbuilding subsidies and that they be reinstated in December 2001. Under the present proposal, the subsidies would have been up to 14 % of the price and include tankers and containerships.

Given the state of the market, the very young age of the fleet and the overcapacity, which prevails in the sector of containerships, German shipyards are highly exposed and can rightly be worried about their future.

Italy

With 2.2 million gt, Italy reaches the first place within the European Union.

Three types of ships continue to dominate Italian shipbuilding:

- cruise ships (54 %)
- ro-ros (17 %)
- ro-ros with passenger capacity (16 %)

The largest Italian shipbuilder, Fincantieri, returned to profits in 2000, and hopes to double them in 2001 (10.84 million euro in 2000 against 236.53 million loss in 1999).

Fincantieri has a comfortable orderbook spread out until 2005. The decision to devote a third site at Sestri, out of the six that it possesses, to build cruise and passengers ships might appear somewhat doubtful today. But the main difficulty that Fincantieri faces, is to keep its other three construction sites supplied with standard vessels.

These difficulties are also shared by the other Italian shipyards. It is not unlikely that Italy will experience the bankruptcy of some shipyards in 2002.

Spain

As in 2000, Spanish yards saw very few orders this year and their tally has finished the year at around 850,000 gt.

Izar managed in 2000 to join the club of LNG shipbuilders by taking an order for domestic account of three LNG carriers of 138,000 cbm. Izar has consolidated its position this year by signing two new units. It is therefore the only European shipyard to take two LNG orders out of the 30 placed in 2001.

The existing orderbook of Spanish shipyards, based on gt, is primarily composed of LNG carriers. It is interesting to note that Spain did not benefit as did Finland, Germany, Italy, and France from a niche market such as cruise ships. It is no longer the case.

Finland

The two Finnish shipyards Aker-Finnyards and Kvaerner-Masa have remained focused on the production of ferries and ro-ros for one and cruise ships for the other. But neither of these yards took on any orders this year and the Finnish orderbook has gone from 1,000,000 to 614,000 gt.

Denmark

The two shipyards Odense and Orskov have kept to their respective areas. Odense is believed to have taken an order for six containerships of 9,600 teus and Orskov continues its production of offshore units.

Holland

The existing Dutch orderbook has remained stable compared to last year with 555,000 gt. It has the distinction of an important production of small-sized ships, generally less than 10,000 dwt and often very specialised, which has been so far the best insurance for the Dutch shipbuilding industry, given the lack of competition from other European countries.

But Dutch shipyards will have to learn to work without the direct subsidies and without the benefits of the Dutch tax incentives, which have encouraged the creation in the 90's of an important fleet of ships generally placed with local yards.

Norway

The orderbook of Norwegian shipyards has kept steady with nearly 150,000 gt. It is made up mainly of units for the offshore oil industry. Norwegian shipyards have acquired an impressive know-how and benefit from a strong domestic demand.

The Aker group is in the process of overtaking the Kvaerner group who, with 13 shipyards, had dominated the European shipbuilding scene during the 90's. Today the Aker group owns 10 shipbuilding sites ranging from Norway, Finland, Germany, to Romania.

Poland

Poland has benefited largely from the demand and the full occupancy of Korean shipyards at the end of 2000. During 2001 the existing orderbook for Polish shipyards reached an historic national record with more than 2,900,000 gt (132 ships). Poland takes fourth place in the world. German owners have ordered an important series of containerships totalling 49 ships for nearly 1,700,000 gt in the third quarter 2001, compared with 64 containerships in Korea for 3,400,000 gt and 34 units in Germany for 700,000 gt.

But Polish shipyards are today highly exposed to the containerships market and to a certain extent their future is linked to that of their clients. They should be looking for substitute orders. Delayed delivery of a series of chemical carriers being constructed at Szczecin shows that diversification also carries risks.

Poland can be happy at the E.U.'s decision not to reintroduce subsidies for the shipbuilding industry. She can hope to attract European owners by taking advantage of her geographical proximity.

Croatia

As with Poland, Croatia has substantially benefited from the demand and the saturation of Korean shipyards. During 2001, the orderbook of Croatian yards also achieved an historic national record with more than 1,632,000 gt (June 2001) compared to 973,000 gt (December 2000).

All the Croatian shipyards, Split, Uljanik, 3 Maj, and Trogir are full up till end 2004, early 2005. The majority of their production comprises product tankers and chemical carriers.

The Kraljevica shipyard, which has not had an order since 1992, signed up two bitumen carriers of 9,000 dwt.

Croatia can also be content that the E.U. did not reinstate its subsidies for shipbuilding, and like Poland hope to benefit from its close proximity to European owners.

But it is also confronted with other problems. It will need to invest in its production base to maintain a competitive edge and keep its qualified staff, who is more and more attracted to the neighbouring shipyards of western Europe.

United-States

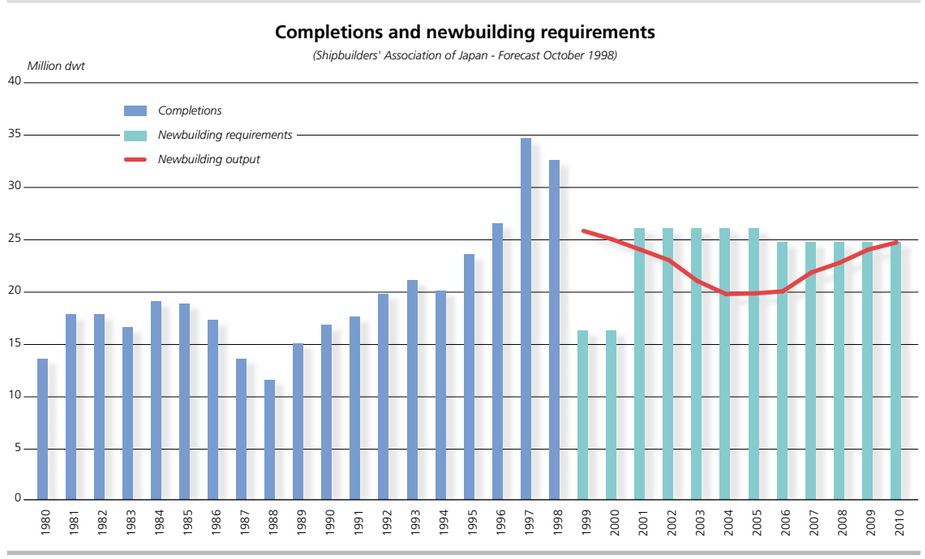
The American shipbuilding industry continues to progress and now occupies the eighth position in the world rankings with over one million gross tons at end 2001. Ten years earlier, its orderbook was barely 50,000 gt.

These results would not have been possible without the introduction of favourable financing (Title XI), the benefit of the Jones Act which obliges ships employed on coastal traffic to be built in domestic shipyards, and without the dynamism of the U.S. offshore oil industry.

Prospects

2002 looks like being a particularly difficult year. Much will depend on the depth of the new crisis. However opinions vary.

The forecast for deliveries made in October 1998 by the Association of Japanese Shipbuilders was relatively pessimistic for the years 1999 and 2000



with a little over 26 million dwt against 40 and 44 million dwt actually achieved.

Those of the Korean Institute of Shipping Affairs, more recent (January 2001), are equally pessimistic. Are they therefore more realistic? Only the future will tell.

Experience shows that forecasts are often too glib with little consideration for the actual fluctuations and volatility in the past. They are therefore bound to contain errors.

During the 90's the world orderbook and the delivery of newbuildings always grew a little each year. There were occasional moments of doubt. But they were immediately overcome by new concessions made on sale's price. In this respect 1999 and 2000 were exceptions, to the extent that demand for newbuildings which was extremely strong was met by a very modest price rise.

Despite current pessimism, it is by no means unlikely that a rebound after 2002 can be expected. The capacity of the market to pick itself up after the Asian crisis of 1997-1998 was quite remarkable and experience shows that with the cycles in industry, the more they are intense, the shorter they are.

This rebound could come from an economic revival and from an increase in demolitions.

But it is clear that during 2002 the volume of new orders should be lower than that of 2001 which will have the effect of causing a further deterioration in the price of these orders.

Shipbuilding is a relatively atypical industrial activity. Contrary to numerous other industrial sectors, which do not hesitate to reduce their production capacities when confronted with lower demand, either by closing down plants or by reducing activity, shipyards have sought throughout the 90's to improve their productivity and their competitiveness by an increase in production and, at the slightest sign of weakening demand, by lowering their prices to attract new orders.

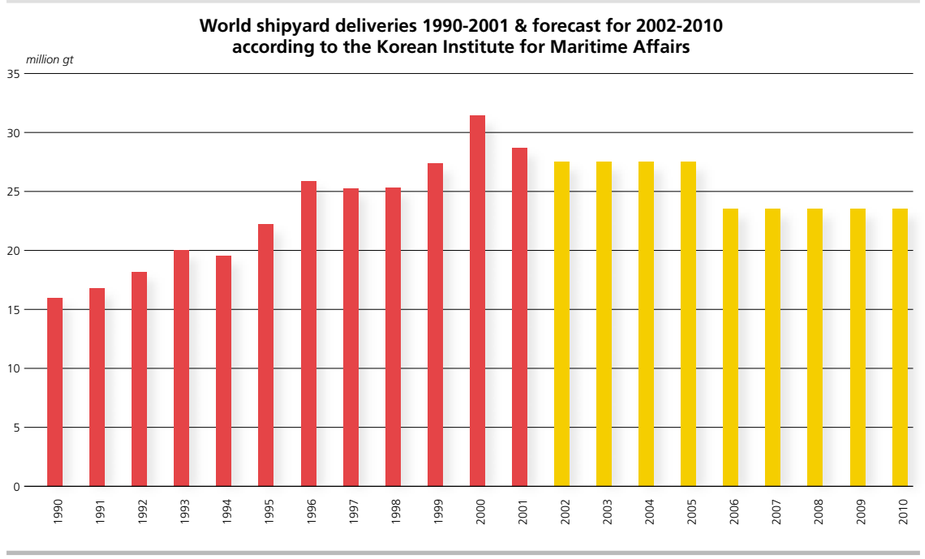
Excluding devaluation of the majors shipbuilding countries' currencies (yen, won, yuan) to the dollar, any such lowering of prices in dollars should be very difficult to grant for the following reasons:

◆ Current prices are already extremely low, near to the levels obtained in 1999 following the Asian crisis.

◆ Ships are improving in performance and must meet increasing legal restrictions, thus in principle are more expensive to build.

◆ The Asian crisis caused a change in behaviour especially in Korea. What was possible before is no longer the case. The Chaebols have broken up and it is now impossible to expect that losses of one activity can be subsidised by the gains of another.

◆ Shareholders and financial analysts are pushing the industrial conglomerates to spin off their different activities to obtain a more transparent statement of their accounts.



Shipyards could hope to obtain some price reductions on raw materials and equipment they use under economic pressure. They can also hope that prevailing low interest rates will act as a strong incentive.

However the different shipbuilding areas do not have the same forces to face this new crisis.

◆ European shipyards seem to us particularly vulnerable as they have just lost the benefits of their shipbuilding subsidies. In addition the exchange rate between the euro area countries versus the dollar has recently enjoyed favorable levels which have not been seen for the last 15 years. Production is dispersed over several countries, shipyards, and building sites, leaving little room for consolidation or economies of scale. Their production is also very narrowly spread and substitute orders, which are a form of diversification, are less easily undertaken and perhaps more risky. An increase of orders in euro prices could possibly reverse this tendency.

◆ Korean shipyards appear to be better placed. They have a considerable backlog of orders to allow them to bide their time. They benefit from important economies of scale. They can decide to shut down one or more docks if necessary. The won remains closely linked to the dollar, which is the money of reference. Thanks to these advantages they can also hope to capture a number of orders for standard vessels or more sophisticated ships which would have gone to European shipyards and thus gain market shares.

◆ Japanese shipyards seem to us equally well placed. Consolidations are certainly easier to achieve within a nation rather than a continent. Numerous Japanese shipyards are multi-site and regroupings and rationalisations can be easily done. The yen remains weak and allows Japanese yards to seduce opportunistic owners. Japanese shipyards can also count, as they have always been able to do, on the support almost unconditional of domestic shipowners.

◆ The low cost of Chinese manpower linked to a very modern infrastructure should in principle guarantee a competitive advantage over their two Asian rivals – the Koreans and the Japanese. In the price war that is looming, it would appear that the Chinese shipyards have a considerable advantage, even if it takes more man-hours to build a ship of the same specifications. They can also count on their domestic owners and on the pressure of the Chinese government to encourage owners to buy and build in China. Nonetheless the fixed exchange rate of the yuan to the dollar and the reduced commercial reactivity already seen in 1998 in a dropping market, could be a handicap to these shipyards in 2002. ■

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THE CRUISE MARKET IN 2001

A year of challenges

Being an active observer of the cruise market's evolution over the last 25 years, we have seen how sensitive the sector is to three external factors:

- an economic slowdown
- terrorist acts
- war

This passed troublesome year has experienced all three events simultaneously which have weighed heavily over the cruise industry. The last three slowdowns were caused by:

1985: the piracy on the 'Achille Lauro'

1991: the Gulf war

1999: the Kosovo war

The cruise market has always been able to recover from these crisis and to frequently compensate these temporary slowdowns with a subsequent rapid expansion.

We have not mentioned the overcapacity as we do not believe that this is a major handicap to the market's development, as the industry has always been able to absorb such surpluses by attracting new adepts to cruising.

It is the ships which create the market, in the United States firstly and more recently in Europe, and the increase in the number of cruise passengers is always linked to the advent of new ships, as was the case:

- in the U.K. with the deliveries of the 'Oriana' and the 'Aurora',
- in Germany with the 'Aida' and the 'Deutschland',
- in France with the 'Mistral',
- in Italy with the new ships of Costa and Festival,
- in Spain with the 'Bolero' and the 'Oceanic'.

It is true that, if one of the causes mentioned above occurs, let alone all three together, the potential overcapacity of the fleet exacerbates the situation and depresses prices. However as in nature, there is a natural selection which then

European Vision
58,600 gt, blt 2001
by Chantiers de l'Atlantique,
operated by Festival Cruises

takes over, and tends to eliminate the least adapted ships and the weakest companies, thus allowing a quick return to a more healthy balance. It is particularly true this year with the bankruptcies of Commodore Cruise Line, Renaissance Cruises, and AMCV in the U.S..

The year 2000 ended with a record orderbook of 50 ships under construction (100,000 lower berths), which had financial analysts worried and which had a negative effect on shares prices of companies quoted on the exchanges. Nine months later, at the beginning of September, the view of the main operators had become totally positive based on a load factor of over 100 % in the U.S. with complaints only about minor price reductions on offer. The drama of September 11th of course changed everything and severely affected the tourism industry in general and the airline sector in particular.

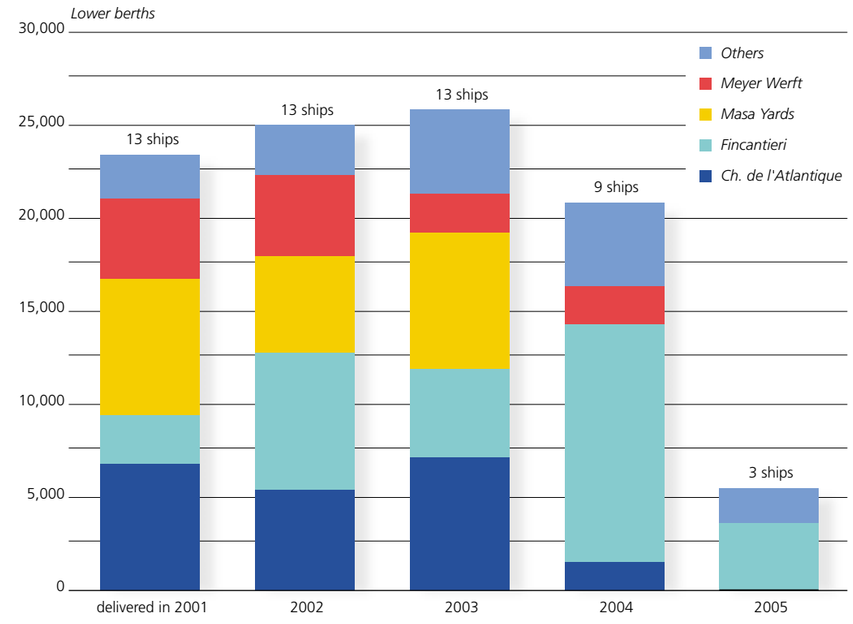
It is nonetheless amazing that apart from several days just after September 11th, owners were able to fill their ships by lowering their prices, which leads one to think that clients have not been put off the idea of cruising and only need to be convincingly persuaded. If cruises had suffered the same crisis in confidence as happened to air traffic, it is unlikely that the same number of clients would have been as forthcoming no matter what the price. Ships were relocated towards safer destinations, with embarkations from the nearest ports for passengers, allowing them to depend less on flight connections. During the last quarter, operators were able to achieve average load factors of over 90 % in the U.S., which is a remarkable achievement given the circumstances. Europeans have not by and large changed their holiday schedules.

Companies that went bankrupt were already tottering before September 11th and this dramatic event simply added the coup de grace:

- Renaissance paid for their serious commercial mistakes, with a too rapid expansion on a poorly defined market segment and too heavily indebted.
- Commodore overspeculated within the gambling cruises in the U.S., where the relaxing of restrictions for playing on land no longer made it necessary to play on gambling ships.
- AMCV which had high running costs due to American flag, suffered from very aggressive competition of other cruise lines and of the excellent infrastructures in the Hawaiian archipelago.

For the first time in several years, we have not seen any new orders, since the only one that was confirmed at the beginning of the year was the second ship for MSC (60,000 gt, 1,560 passengers) with Chantiers de l'Atlantique which in fact was signed at the end of last year. Several projects

Cruise ships delivered in 2001 and scheduled firm to 2005



which might have got off the ground this year, were postponed due to the slowdown and the events in the market, such as with Disney Cruise Line, Radisson Seven Seas, Canyon Ranch and Residensea.

The major owners, well-stocked with new ships, have taken advantage of the lightening in the shipyard orderbooks, to delay certain deliveries and to slip back the dates of some of their orders. This was the case for P&O with Chantiers de l'Atlantique, RCCL with Masa Yards and more recently Carnival with Fincantieri. The construction of a ship is a partnership between shipyards and owners and such a decision can equally be an advantage to the yard which having no new orders this year, risks facing a lack of ships to be built in three years time.

This slowdown in the pace of orders may in the medium term pose a problem to European shipyards specialising in cruise ships, now facing serious problems at finding substitute work, as the Koreans have taken a dominant place in building LNG carriers and with orders for new ferries being currently scarce. Among the large European shipyards, only Fincantieri is well placed for the moment with an orderbook spread over 2005.

At the end of 2001, there remain 38 ships to be delivered:

- 13 in 2002, comprising 25,000 lower berths,
- 13 in 2003, comprising 26,000 lower berths,
- 9 in 2004, comprising 21,000 lower berths,
- 3 in 2005, comprising 5,500 lower berths.

It is however unlikely that the two cruise vessels being built at Ingalls for AMCV will ever be completed (1,900 berths each) as cruise vessels. These new ships represent over the next three years an average increase of 8 % of the annual capacity which should

Adventure of the Seas
137,300 gt,
blt 2001 by Kvaerner-Masa,
operated by RCCL

easily be absorbed if the market picks up to its normal rate of expansion of about 8 % p.a. as well. In comparison the levels in 2000 were up by 17 % in the U.S. and by 20 % in Western Europe. In addition the market penetration is seven times less prominent in Europe compared to the U.S., and should therefore grow much faster in the future compared to the American market. Given this situation, is it therefore still reasonable to harp on about overcapacity?

During this year the following deliveries have taken place:

◆ For Carnival, the 'Carnival Spirit' and the 'Carnival Pride' (85,700 gt, 2,114 berths) built at Kvaerner Masa.

◆ For RCC/Celebrity, the 'Summit' and the 'Infinity' (91,000 gt, 1,950 berths) built at Chantiers de l'Atlantique, the 'Adventure of the Seas' (137,000 gt, 3,138 berths), built at Kvaerner Masa and the 'Radiance of the Seas' (90,000 gt, 2,100 berths) built at Meyer Werft.

◆ For Star Cruise/NCL, the 'Norwegian Star' (91,000 gt, 2,240 berths), built at Meyer Werft and 'Norwegian Sun' (77,000 gt, 2,000 berths) built at Lloyd Werft.

◆ For P&O Princess Cruises, the 'Golden Princess' (108,000 gt, 2,600 berths) built at Fincantieri.

◆ For Festival Cruises, the 'European Vision' (58,000 gt, 1,500 berths), built at Chantiers de l'Atlantique.

◆ For Radisson Seven Seas, the 'Seven Seas Mariner' (48,000 gt, 710 berths) built at Chantiers de l'Atlantique.

◆ For Renaissance Cruises, the 'R Eight' (30,000 gt, 700 berths) built at Chantiers de l'Atlantique.

◆ For Silversea Cruises, the 'Silver Whisper' (25,000 gt, 382 berths) built at Mariotti.

◆ In total 13 ships with 23,000 lower berths have been delivered. Two ships have been put back to 2002, the 'World' for Residensea and the 'Olympia Explorer' for Royal Olympic Cruises.

The second-hand market remained active for the first nine months of the year, with the most recent ships finding buyers at very respectable prices. Amongst the most noteworthy sales, we can cite:

◆ The 'Star Aquarius' (built in 1989, 40,000 gt, 1,740 passengers) of Star Cruises sold to DFDS for $75 million, and returning to its initial vocation as a ferry.

◆ The 'Victoria' (built in 1966, 28,900 gt, 778 passengers) sold for $17.5 million by P&O to Italian interests with a charter back for 18 months.

◆ The 'Pacific Princess' (built in 1971, 20,600 gt, 610 passengers) sold for $17 million in the same conditions.

◆ The Fred Olsen group bought the 'Crown Dynasty' for a price of $65 million (built in 1993, 19,000 gt, 800 passengers) from Effjohn, which picked up this vessel following the bankruptcy of the Commodore group.

◆ The Spanish Pulmann Tours bought the 'Oceanic' (built in 1965, 38,000 gt, 1,100 passengers) for a price of $24 million, following the bankruptcy of Premier Cruise Line.

◆ Cunard was able to sell the 'Seabourn Goddess I' and 'Seabourn Goddess II' (built in 1984 and 1985, 4,260 gt, 116 passengers) for a combined price of $20 million to a new owner Seadream Yacht Club.

Summit
91,000 gt, blt 2001
by Chantiers de l'Atlantique,
operated by Celebrity Cruises

◆ The 'Hyundai Pungak' (built in 1972, 19,900 gt, 610 passengers) was sold for about $11 million to a company controlled by G. Herrod, the previous owner of Orient Line.

◆ The 'Westerdam' (built in 1986, 53,800 gt, 1,494 passengers) and the 'Tropicale' (built in 1982, 36,675 gt, 1,022 passengers) profited from some internal transactions within the Carnival group and were sold to enhance the Costa fleet.

Since September 11th, the second-hand market has gone quiet, with all operators waiting for the market to stabilise before investing. It is however likely that ships built before the 70's and with steam turbines, will have a problem finding buyers in the future, with clients showing a preference for the comfort of new or recent ships, which represent the majority of the fleet (82 % of the fleet expressed in gross tons being built after 1990). The disposal of the 'Costa Riviera' for scrapping (built in 1963, 1,000 berths) at the end of the year well illustrates this tendency.

There was further consolidation within the industry with the announcement of the merger between P&O Princess Cruises and Royal Caribbean Cruises, thus promoting the largest cruise group overtaking their big rival Carnival. This new entity with an estimated worth of $6 billion, owns 41 ships (75,000 berths) and has a firm orderbook of 12 ships (29,000 berths) to be delivered over the next three years. It is active in the American market and Northern Europe and should consolidate its position in Southern Europe. It is for this reason that the company has already made known its intention of putting four new joint ships into this market.

Carnival who had remained until then the uncontested world leader as cruise owner, was unable to let this announcement pass-by without reacting and immediately improved its offer to the shareholders of P&O to $4.5 billion to entice them to change tack and to join their group. The outcome of this proposal is unknown at time of press.

These big battles carry with them certain underhand comments and unpleasant remarks concerning all parties, which helps to destabilise the financial analysts and undermine their assessments. Is it really necessary in order to affirm one's presence, to caste aspersions on your competitors who are all contributing to the cruise market's development by offering a diversity of products? Surely it is in the interests of clients, shipyards, and suppliers to keep the market on its course of expansion, to have a range of companies which each contribute in their individual and special manner to enlarge and spread a better appreciation of the cruise industry. We remain extremely confident in its growth (10 million tourists chose to cruise this year, of which 7.5 million in America – a doubling in 10 years – and nearly 2 million in Europe). Some observers think that there will be a further doubling in the cruise passengers number over the next ten years, since this type of leisure is outstanding in terms of value for money and client satisfaction.

Seven Seas Mariner
47,900 gt, blt 2001
by Chantiers de l'Atlantique,
operated by Radisson Cruises

◆ ◆ ◆

In the uncertain times that we are experiencing, it is also worth remembering that a ship is a floating asset, which can be easily transferred to markets out of high risk zones, unlike hotels and holiday villages which are often at the mercy of local conflicts. This security aspect is frequently underestimated by the analysts.

World economic growth, population growth and, as a natural consequence, the expansion of the leisure industry are essential underpinning reasons for the development of the cruise market.

This is why we can and should look at the future of this powerful sector of activity with confidence. ■

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THE TANKER MARKET IN 2001

Crude oil transport

Our conclusions in the last annual report ended on a relatively optimistic note. On the basis of forecasted economic growth on one hand and the expected movement of deliveries and scrapping within the fleet on the other hand, it was predicted that there should be an effective balance between supply and demand up until the end of 2002.

It was logical that there should be a technical adjustment to freight rates after the unreasonable (?) levels reached in 2000. Nonetheless the general opinion was that they would remain favourable to owners for a further 18 / 24 months.

As we shall see later on, this optimism was quickly beating a retreat. The economic indices were turned upside down and the negative results that followed were magnified by external factors both of a dramatic and unexpected nature.

It is clear that in the current climate, optimism has taken a back seat for 2002 and even 2003, which look like being difficult times for owners. The massive orders of the last two years have not been matched by the anticipated demand. The effect of the economic recession, even short-lived, will cause a dramatic drop in the rate of new orders and probably help to accelerate the number of vessels being scrapped.

As has been traditionally the case, the wild swings which are characteristic of this market produce freight rates which seem incapable of remaining stable either in the medium or long-term.

After a quick study of the macro-economic factors that have marked this past year, we will look at the effects in each of the main size categories.

We will attempt to show, beyond the justified short-term pessimism, the reasons why we believe this will be a relatively brief period and that it should not undermine our longer term view that we gave in our last report.

Reasons for the downturn

After record growth rates in 2000, the industrialised countries experienced a leaner year in which the indicators quickly turned from rosy to gloomy. Forecasts for the main economic indices were continually readjusted downwards throughout the year.

GDP as expressed in %

	2000	2001	2002
United States	4.1 %	1 %	0.7 %
Japan	2.2 %	-0.4 %	-1 %
Europe	3.4 %	1.7 %	1.3 %

Source IMF : December 2001

The American market which has been the leading participant and driving force over the last two years in the highly active freight market got hit badly. The first signs of an economic slowing down, then of a recession, were visible well before September 11th with notably some alarming unemployment figures. The wave of terrorist attacks on September 11th, beside their despicable nature and the geopolitical consequences, only served to brutally reinforce the sombre mood and even add a touch of psychosis.

However, as already remarked by a number of commentators and taking into account the American spirit, the current crisis, while an undeniable fait accompli, should nonetheless be of a relatively short duration.

Outside the U.S., all industrialised countries have readjusted their forecasts and lowered their growth rates, without citing Japan which is still languishing in the doldrums…

However even if other countries do not foresee their growth as being so severely affected, there can be little doubt that short-term prospects do not augur for sufficient energy consumption in the current market to offset the tonnage supply which has swung into surplus.

In view of this sudden drop in demand, oil prices have followed suit. As can be seen in the following graph, the repeated efforts of the producing countries to stimulate prices by turning off the taps have not met with much success.

A few conclusions can be drawn from the following graph:

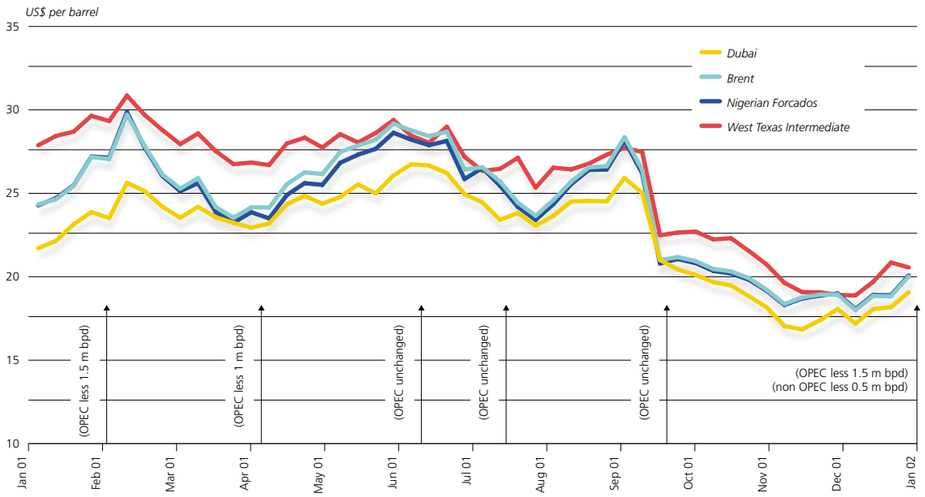
◆ After having frequently risen above $30 per barrel in 2000, crude prices for the year will average out at near to $25 per barrel.

◆ The drastic measures taken by OPEC members to reduce production quotas successively have had only a short-lived effect on crude prices. The September 11th events plunged markets into a profound apathy and prices quickly collapsed. Realising that a sudden further reduction on production quotas would have little effect on prices, the producing countries waited and now are placing their hopes on a new reduction of 2 million barrels per day (1.5 million OPEC, and 0.5 million non-OPEC) as from January 2002. If this policy is respected by all it should allow prices to consolidate around $20 per barrel.

However it is also clear that playing around with supply is not enough so long as demand in the current economic climate has not picked up to normal and regains a sustained growth rate.

Faced with such drops in production and therefore in demand for transport, owners can no longer pretend to be able to maintain freight rates for long. We shall see further on that certain categories are suffering more than others.

Weekly crude oil prices in 2001



Source : ITOPF

Effects on freight rates

VLCC

It is without question this category which is the most exposed to the tightening measures being imposed by the producers. Directly dependent on liftings from the Middle East Gulf, the rates have very quickly taken a dive.

With the exception of three jolts of varying degrees, the fall in rates has been sharp and painful. Taking all routes into account, in the course of the year equivalent time charter rates have slumped from $80,000 per day to $20,000 per day.

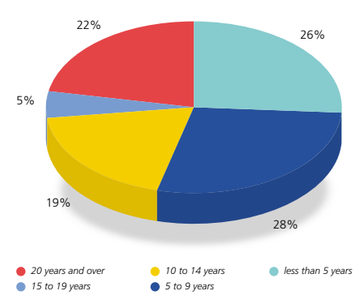
One can clearly see in the graph (and as evidenced elsewhere) that the events of September 11th in the U.S. have had a substantial impact.

Proof of the underlining weakness of the current market in contrast to the year 2000 is that voyages to the Far East (which are the most active for this size of vessel) have triggered and helped accentuate for the most part this drop in rates.

The Japanese and Korean oil companies' owned fleet have not been employed 100%, and these 'relets' heavily weighed on further depressing the

VLCC fleet age distribution

(in number of vessels)

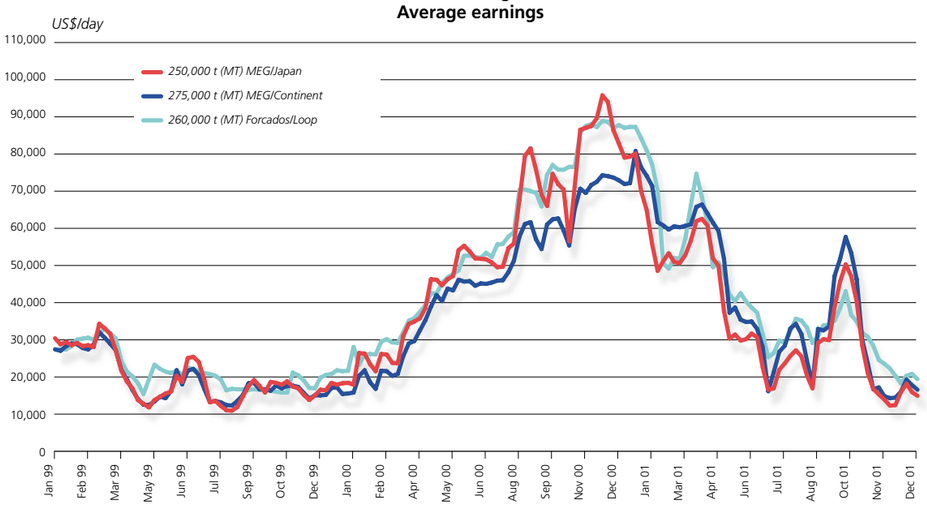


Number of VLCC/ULCC evolution by age class

Age	end 1999	end 2000	end 2001	end 2002*
over 20 years	145	119	92	93
15 to 19 years	11	11	16	21
10 to 14 years	43	53	63	83
5 to 10 years	126	130	134	117
under 5 years	96	117	122	157

** without scrap or total loss*

VLCC tanker freight rates
Average earnings



market and largely explains the strong drop in rates on these routes.

Without actually offsetting the loss of traffic on liftings out of the Middle East Gulf, there has been again this year a very strong increase in combined cargo movements from West Africa with Far Eastern refineries as the main destination.

While such movements serve as a safety valve for VLCC owners in the difficult times that they are now experiencing, this business as we will see later on, is being done to the detriment of the traditional traffic which belonged to the Suezmax size.

The new drop in crude oil production of 1.5 million barrels per day decided by OPEC with effect from January is likely to keep an already weak global market under pressure, compounded by a supply of tonnage which is growing both quantitatively and qualitatively.

The orders for newbuildings which were made in euphoric mood immediately after 1999 will start weighing heavily in the forthcoming months. Only an increase in the number of scrapping of the oldest units can give any hope to owners.

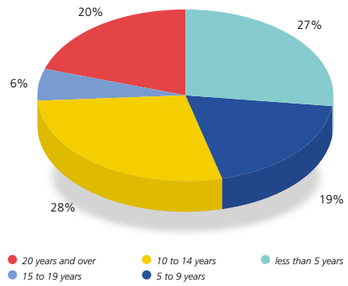
Two other factors which are not helping freight rates are:

◆ Tankers which are oil company operated are no longer guaranteed to find full employment and will continue to depress the market.

◆ The policy of pooling which seemed last year to be a stimulating factor for freight rates, is now causing various commercial difficulties. In many cases we have already seen that the pool has no option but to anticipate and even exaggerate a drop in freight levels…

Suezmax fleet age distribution

(in number of vessels)



Suezmax

As with the VLCC, the turnaround in the tendency between 2000 and 2001 was sudden and resulted in a rapid deterioration in the general state of the market.

Time charter equivalents that were frequently above $60,000 per day at the start of the year slipped in some cases at the end of the year below $20,000 per day. Nonetheless the greater flexibility which characterises this category of tankers has allowed owners to stabilise their minimum returns at proportionally better levels than the bigger sizes. As comparison, average returns in 1999 were only $15,000 per day.

As already stated in our previous report, the West African market no longer plays a predominant role as pacemaker. As mentioned above, VLCC are responsible for this and two 1 million barrels lots are more and more frequent not only in movements to the East but also towards the US and Europe.

However activity for other destinations in this size category of ship is regularly increasing and allows owners to ensure a much better balance on employment.

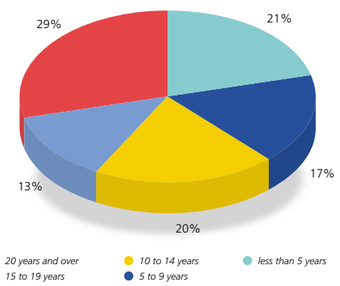
The North Sea and the Caribbean markets remain relatively on the sidelines. The Middle East Gulf tends to favour the older category of ships.

The Mediterranean is experiencing a surge in activity. Liftings from the 'Sumed' pipeline outlet are stable and risk staying that way due to the competition of the low VLCC levels. In addition, Irak crude out of the Ceyhan terminal, so long as the United Nations 'oil for food' agreements continue, is favourable to the Suezmax size.

Liftings of Russian crude (or from CIS countries) out of the Black Sea are in constant progression. Due to the technical constraints imposed, modern vessels are required and these fixings serve as a barometer of the market more and more. Analysing the graph which gives returns on different voyages both in 2000 and in 2001, shows that the Mediterranean zone often acts an accelerator in a rising market or a brake in a falling one.

Aframax fleet age distribution

(in number of vessels)

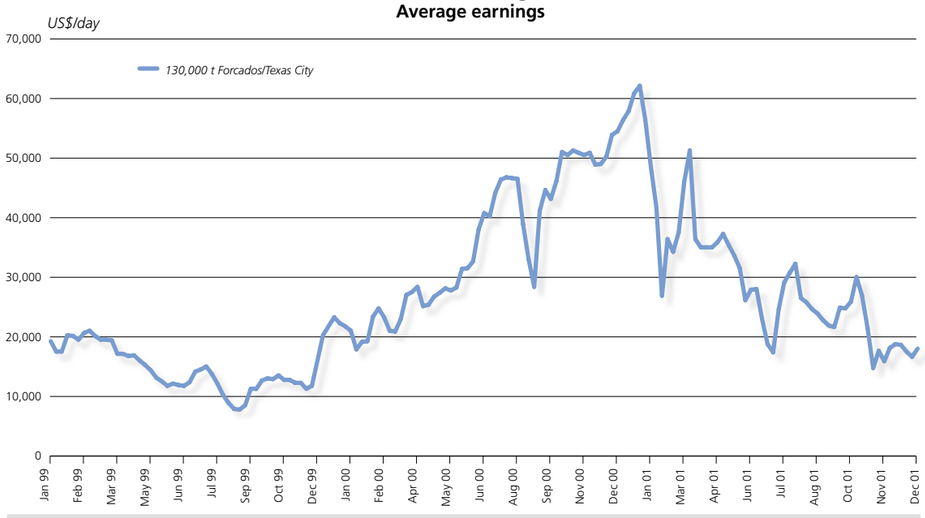


As with the VLCC, the policy of pooling put in place these last few years helped stimulate the market in 2000. However in today's climate of economic recession, it plays a prominent role in the weakening of rates. It is a case of doing everything possible to prevent non-employment of their fleet, which appears today to be in large surplus.

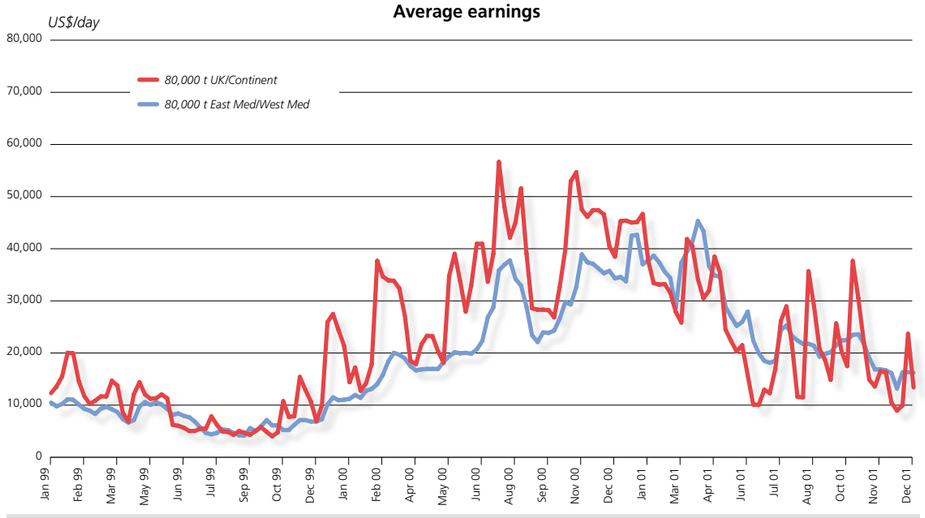
Aframax

Even more so than the Suezmax size, the great flexibility of the Aframax category allows owners to limit the impact of the economic crisis which we are currently experiencing.

Suezmax tanker freight rates
Average earnings



Aframax tanker freight rates
Average earnings



The analysis of the evolution of returns on the main routes shows once again the strong downturn in levels after the peaks reached in 2000.

One notices however that in general, the drop is less for this category of vessel. Even if rates have plunged from $50,000 per day at the beginning of the year to about $20,000 per day at year's end, the floor level (for the moment) has proportionally less of an affect on owners for this size compared to the larger sizes. As additional evidence of this stronger resistance: at the end of 2001, a 12 month time charter is negotiated at around $22,000 per day for a modern Suezmax and still $20,000 per day for a modern Aframax.

The inter-North Sea activity continues to be marked by wild fluctuations but with peak demand and rates for liftings recurring end-month.

As a general rule, the Mediterranean has produced the best results for owners with equivalent time charters above $30,000 per day on average over the year. Despite a lessening in demand, charterers have to be on their toes in this zone. Availability of quality ships remain precarious and obliges the charterer to cover his needs two to three weeks in advance with all the incumbent risks. The still important number of ships over 20 years, even 15 years, prevalent in this area has no longer an impact on freight levels. In practice, the drastic security measures taken both by governments as well as oil companies ensures that only units less than 15 years reflect a true value of this market.

The diversity of movements and the large number of intervening charterers operating in the Mediterranean are supplementary reasons for the healthy level of rates in this market.

In the current climate of low freight levels, owners of older vessels must choose between waiting longer and longer between fixing, going off to join the ever expanding numbers of such ships in the East, or sending them voluntarily for demolition.

The Outlook

In our previous report, we anticipated that freight levels would hold for 2001 and 2002 before a probable dropping off in 2003 given the massive number of newbuildings then appearing.

With the world economic climate suddenly wavering between stagnation and depression, and an America unexpectedly facing the woes of unemployment, compounded by terrorist attacks putting at stake its supremacy, freight rates have got sucked into a downward spiral which is certainly overdone.

The question is to know whether this is a mechanical phenomenon which is justified and long lasting or, on the contrary, simply a strong reaction which will enable the market to recover a healthy balance quicker than expected. We think this second hypothesis to be more likely.

Many experts believe that the United-States will recover from the dramatic events of September 11th stronger than before, and that growth will pick up again after the second quarter of 2002. The role that the world's most important economic power plays in terms of energy consumption will be confirmed and it is likely in addition that we shall see a decline in the use of nuclear energy.

Despite efforts of producing countries to push up oil prices, the world producing capacity today is such that the oil price is unlikely to go over $25 per barrel. This is another factor in favour of a rapid economic recovery.

The high freight rates registered in 2000 and in the beginning of 2001 acted as a brake for any voluntary scrapping of the oldest vessels. However, faced with depressed rates such as we have currently, their employment should be increasingly dubious.

Given that today we have already witnessed a serious decline in the number of orders of newbuildings for the three main categories of tankers, we should see an increase in the number of vessels over 20 years heading for the scrapyard. The return of a better balance between supply and demand could therefore occur in a far shorter time than predicted by many. ■

Comparative number of crude oil tankers by age and size class

Size	20 years & over	less than 20 years	on order
VLCC	92	335	84
Suezmax	54	216	66
Aframax	165	433	134

Besiktas
164,626 dwt,
blt 2001 by Hyundai HI,
owned by
Besiktas Denizcilik

The Second-hand oil tanker market

Last year's revue concluded by drawing the reader's attention to the trend towards a slowing down in world growth and the repercussions that this would have on the value of ships built in the 70's and 80's. This perception was revealed to be accurate, or more honestly partially so, as in fact all ages of ships suffered a drop in value even if older ships were the most affected.

The year 2001 saw an impressive number of transactions, at the end of the year we have listed about 140 second-hand sales of ships for navigation or transformation (and thus excluding demolition). In comparison, the total of ships transacted in 2000 was 126 and in 1999 only 98. This figure of 140 is however slightly misleading as a considerable number of transactions were done "en bloc" and it is primarily by this yardstick that one can measure the effects of mergers and regroupings within the shipowning world.

Values have declined due to a drop in ships' revenues for all sizes, the systematic compressing of construction costs offered by yards, and by charterers taking a control of the market at the expense of owners. Just as at the end of 1998 and during 1999, charterers can again pay themselves the luxury of deciding arbitrarily whether to reject older ships without risk of paying a heavy premium for a modern ship. It is for this reason that no matter what the size, ships of the 70's and 80's have seen their value drop by more than 45 % during the course of the year, whereas modern units and double-hulls have lost between 20 to 25 % of their value.

Prices remained firm at the beginning of the year but collapsed as the steady decline in daily revenues was being realised and slipped further after the events of September. We should like to point out certain tendencies which characterise this sector but which are also present in other types of tonnage:

- The cyclical rise and fall of values are getting shorter not only because of the instability of our economies but also due to the shorter reaction time of the players be they owners, charterers, or builders.
- If the concentration of tonnage in the various pools helps push the market on its way up, they do not seem capable of slowing it down on the falls.
- Different types of owners exist and their varying time horizons contradict their objectives, which are equally different. Consequently, those who are under obligation to always produce profits in the short term, tend to amplify the movements of the market.
- The sellers' ability to resist their counterparts when values are declining seems stronger than the resistance of buyers when values are rising.

Comparative Phasing-out schedule for single-hull tankers between IMO & OPA 90

	IMO		OPA 90	
Year	**non-SBT**	**SBT**	**SH**	**DB or DS**
To be deleted in	pre-Marpol : over 20,000 twt crude & 30,000 dwt products	Marpol : over 20,000 dwt crude & 30,000 dwt products	over 30,000 gt	over 30,000 gt
2001			1978	1973
2002			1979	1974
2003	1973	1973	1980	1975
2004	1974-1975	1974-1975	1981	1976
2005	1976-1977	1976-1977	1982	1977
2006	1978-1979-1980	1978-1979	1983	1978
2007	1981 & after	1980-1981	1984	1979
2008		1982	1985	1980
2009		1983	1986	1981
2010		1983	after 31/12/1986	1982
2011		1985		1983
2012		1986		1984
2013		1987		1985
2014		1988		1986
2015		1989 & after		after 31/12/1986
	No later than anniversary date		At anniversary date	

Specific schedules for smaller ships have not been included in this table.

The year 2002 appears to be starting out as difficult times for owners. The asset worth has fallen to levels of 1999 and a large number of ships are due to come into service for the Aframax and the Panamax fleets. The demolition of the oldest units is inevitable in the short-term, but the revenues of the old ships are often the means of financing the costs of their new ships.

Experience shows that the tonnage on offer has not and should not be the problem. The really essential factor is demand and it is this demand that we should try to determine as best as possible. Although we can not be categorical in our forecasts, we would nonetheless give some suggestions to potential investors:

- with modern ships, to seriously look at the possibility of buying "resales" (with equivalent specification) rather than systematically ordering new ships,
- with older ships, to keep in mind the comparative table of phasing-out given above.

The second-hand market for VLCCs

This sector of the market saw 37 units change hands, namely five times more than last year. The main player in this was Frontline (directly or via the Tankers International pool), since it seems that 13 ships out of the 37 involved this owner. The fluctuating values allowed certain to realise brilliant operations in terms of timing. For example Bergesen was able to sell for nearly $78 million per unit, several of his ships which he had bought for less than $65 million a year before. As mentioned above, a number of sales were done "en bloc", 17 ships out of the total 37 transactions changed hands in this manner. The most noteworthy without doubt being the sale of four – m/t 'Hellespont Burnside', m/t 'Hellespont Elmere', m/t 'Hellespont Holly', m/t 'Hellespont Sheridan' of 305,000 dwt built by Samsung, for delivery in 2001 and 2002 to the National Shipping Company of Saudi Arabia for a price of $82.5 million per vessel.

Out of 18 ships sold this year, built after 1990, all except four were double-hulled and were less than three years (newbuilding resales included). Among the four single-hulled, was the sale "en bloc" of the m/t 'Front Tarim' and the 'Front Tartar' of 306,902 dwt built in March 1993, for a combined price of $104 million with three years charter at $38,000 per day.

Ten ships built between 1980 and 1989 changed hands and to illustrate the drop in prices, we can cite the sale of the single-hulls with the m/t 'Isuzugawa Maru' of 247,392 dwt built in 1987 for $28.5 million in February, whilst the m/t 'Cosmo Jupiter' of 248,965 dwt built in 1986 achieved $18.9 million in October. Owners of ships in good running order and built in the 70's have managed to survive with honours in the current skirmishing. Out of the nine ships sold from this decade, seven were converted into FSO or FPSO. Thus the t/t 'Stena Companion' allowed her owners to obtain over twice the price of her scrap value, achieving nearly $15 million in September.

Although a final reckoning still remains to be done, it seems that at time of press, around 30 ULCC/VLCC have been sold for demolition. It is worth pointing out however that the rhythm of scrapping has been increasing in pace over the past months and that in the last two months of this year the activity was hectic. This tendency should continue even to accelerate right throughout 2002, and in any case to last at least as long as rates are under pressure. The price per light ton has also diminished and while it was possible to obtain about $170 per light ton at the beginning of the year, it finished at the end of the year at somewhere near $135 per ton.

The Suezmax second-hand market

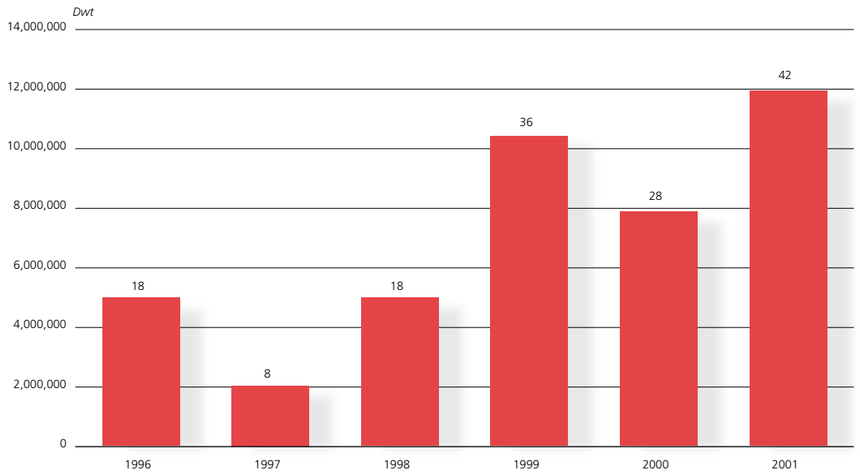
The volume of activity during these last years has remained extremely stable for this type of ship. We noted 23 transactions per year for 1999 as well as 2000, and this year the number changing hands has been 24. In the same way as with VLCCs, the number of ships sold "en bloc" was also significant, since a third of the 24 ships (namely eight) were subject to two grouped sales. The more important of the two was that which consisted of five resales, the 'Hyundai 1351', 'Hyundai 1350', 'Hyundai 1336', 'Hyundai 1335', 'Hyundai 1334', and 'Hyundai 1333' for delivery in 2002 / 2003 and sold during the summer for $330 million en bloc.

We have seen however that activity is essentially concentrated on very modern ships. Ten resales, added to five ships built between 2000 and 2001, then a single unit built in 1993, represented two-thirds of the sale and purchase deals in this sector. Several of these units have changed hands with charter back attached, such as the m/t Four Smile' 160,573 dwt built in 2001, which was sold for a price of about $60 million with a five year charter back at $27,500 per day. To our knowledge the only ship sold from the 90's was the m/t 'Polysymphony' 150,038 dwt built in 1993, which went at the beginning of the year for $41 million.

No ship built between 1980 and 1989 was sold and the remaining transactions were for units built in the 70's. As in the VLCC category, with freight rates collapsing during the year, buyers were especially active at the beginning of the year since five of the seven transactions were done in the first half of 2001. Thus the m/t 'Enalios Thetis' of 149,992 dwt built in 1979 was able to achieve a price of $6.5 million in February whereas in mid- November the m/t 'Elfwaihat' built in 1976 was sold at a level very close to its scrap value, of about $3.2 million.

The demolition figures were impressive, as 28 ships were taken off to the Far East. This is a level comparable to that of 1999 in which 26 ships were withdrawn from the market. The attractive freight rates in 2000 only produced 16 demolitions. As with all size of tankers for this year, sales of Suezmax for scrapping became more numerous as the year progressed.

VLCC deletion figures*



** incl. conversions*

The second-hand market for Aframax and Panamax

In the Aframax market we have seen in 2001 a similar volume of activity to that of last year's, namely 34 sales as compared to 36, which pales against the figure of 50 achieved in 1999. This figure is relatively small if we take into account the total number of ships comprising the active fleet namely 540 units. As a matter of fact, the division by age which has been relatively stable and balanced since the 70's up till now, should allow greater movement and flexibility in this market, in contrast to the VLCC and Suezmax categories which suffer from a lack of tonnage built in the 80's.

The sale of modern ships played a significant part as 16 of the 34 deals concerned ships under 10 years, all double-hulled bar one. Several sales "en bloc" were also achieved of which the m/t 'Astro Saturn' and the m/t 'Astro Maria' of 105,690 dwt, both built in 1999, went for a price of $45 million per ship in May. In comparison and to illustrate the progressive drop in the market all through the year, we can mention the sale of the 'resale' 'Samho S141' for delivery 2002, which changed hands in November for a price of $39.5 million.

Fourteen units built between 1980 and 1991 were sold and once again those with SBT were able to extract a higher price. The value of these ships has nonetheless been badly hit. We have seen the sale of the m/t 'Magnolia', 84,656 dwt built in 1983, for a price in the region of $11.7 million in January, whereas a seller had to accept in November a price of $7 million for each of the m/t 'Winamac', m/t 'Wapello' and m/t 'Waneta', in addition to taking them back under charter for a three year period at a reported rate of $14,000 per day. Only five ships built between 1975 and 1979 changed hands to continue employment. The last to date as we write has been the m/t 'Orapin Ocean' of 81,269 dwt built in 1976 who had her classification renewed in January of this year and which achieved a price of $3 million in December.

We have counted 19 Aframax which have been sent to the scrapyard. Unlike the VLCC and Suezmax, demolition figures show no noticeable change over 2000, which saw 18 and 1999 with 20. This is hardly surprising as this category of ship has been able to weather the lowering of freight rates better than others and even the older units give respectable daily returns East of Suez.

As to the Panamax sector there is renewed life and vitality, but above all it is the favourite of second-hand buyers. We wish that this trend will last, as the orderbook for newbuildings has seen on its side a substantial increase with 42 ships in 2001 against only 13 last year. The volume of sales reached 27 ships of 50,000 to 75,000 dwt this year, some 11 more than in 2000. It should be pointed out that five of these 27 Panamax had a width over 32.2 metres. The breakdown of sales by age bracket was relatively balanced. Thus seven of less than ten years were sold, and the most noteworthy sale without doubt was that of the m/t 'Maya', m/t 'Aztec', and the m/t 'Inca' of 68,467 dwt built in 2001, for a price per ship of $42 million in July.

Ten other units built between 1980 and 1989 changed hands. For example in May the m/t 'Minerva' and the m/t 'Andromeda' of 63,953 dwt built in 1984 were sold en bloc for a total price of $26 million. The other ten remaining sales related to ships built in the 70's, and the last to date was that of the m/t 'Sealion I' of 59,250 dwt built in 1977, which obtained a price in the order of $3.7 million, having passed her special survey. There were only seven ships sold for demolition in this category in 2001, as compared to eight last year and this was a satisfactory figure given that only four new units entered the fleet in 2001. The challenge is of another order for next year.

The second-hand market for OBO's

With 11 ships sold during the course of the year, the volume of sales in this category has remained stable since 10 ships changed hands last year. No less than seven of these, the 'SCF Spirit', 'SCF Trust', 'SCF Star', 'SCF Champion', 'SCF Endurance', 'SCF Challenger', and 'SCF Trader' of 95,000 dwt built between 1991 and 1992, were sold en bloc for a total sum of $210 million during the summer to the great satisfaction of the sellers (and that doubtless only possible) due to the thinness of the market. The four other ships sold, date all from 1981 or 1982, and we can give as example the sale of the 'OBO Panoil' of 70,637 dwt built in 1981, in June at a price of $5.5 million.

Elsewhere, 11 OBO ships were demolished this year, their sizes ranging from 72,000 dwt to 172,000 dwt, having been built between 1974 and 1978. Currently some 140 ships of this type whose tonnage exceeds 50,000 dwt remain in service, even if not all have the ability to carry oil products in their present state. ■

The transport of refined oil products

With regards to the transport of refined oil products in 2001, although the year began in euphoric mood it ended in one of uncertainty and according to some analysts even of pronounced pessimism. Owners and charterers together expect 2002 to be a difficult year.

Nonetheless, 2001 will go down as being a vintage year for product tanker shipowners. Daily returns for ships operating on the spot market were on the whole higher than those of 2000, which in themselves were excellent.

Although the drop at the beginning of the year was a technical correction and largely predictable, nobody thought that the levels achieved, more than $50,000 per day for the LR and more than $30,000 per day for the MR, could be maintained. It was generally thought that the market would find an equilibrium in the middle of the year, but it was not the case: the drop in rates which began in May started gathering speed month after month to finish the year at the levels of end 1999.

The freight market for product tankers suffered a continuous drop in revenues throughout the year 2001 for all sizes.

The 'handysize' (handy product) from 25,000 to 40,000 dwt

It is in this category that the imbalance between supply and demand was greatest at the beginning of the year, resulting in returns of over $30,000 per day. Not helped by the delivery of more than 30 newbuildings, it was the weak American and to a lesser degree the European demand that explains the dramatic drop in revenues which attained at the end of the year levels close to $10,000 per day.

The creation of the Handy Tankers K/S pool, formed around AP Moller, Seaarland Motia and d'Amico Tankers which consists of 25 ships in 2001, led certain oil companies to cover their medium-term tonnage needs. BP took control of seven ships in this size, as well as CSSA, while Shell, Agip and Tamoil all took on two each.

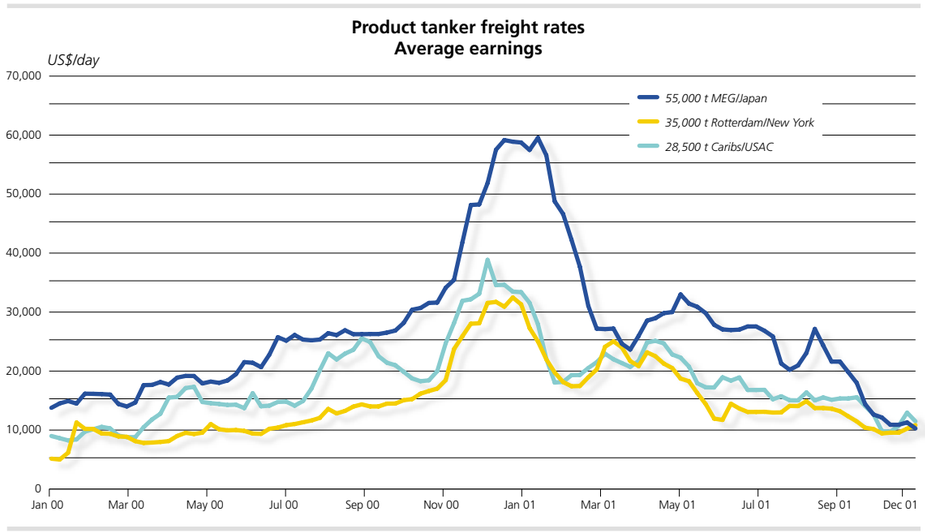
Either by chance or as a result of this policy, the pool does not seem at least for the moment to have accumulated a sufficient share in the deals concluded to have had a significant impact on rates.

The 'medium range' (MR product) from 40,000 to 50,000 dwt

Following the delivery of 11 ships in 2001, this category of the fleet of product tankers is the most modern with two-thirds of ships being less than 10 years.

As for the 35,000 tonners, many charters have been concluded for periods of two years or

Kersaint
37,263 dwt, blt 2001 by Hyundai Mipo, owned by Socatra



more, notably for account of Stasco (five), Coastal-El Paso (three), ExxonMobil (two), and Glencore (three) at rates between $16,000 and $18,000 per day.

Naturally given to covering inter-zone voyages, these ships suffered from the shortening of their voyages as soon as American demand fell-off as from the month of June, and their daily returns which were over $35,000 per day at the beginning of the year collapsed to $11,000 per day in December. As from October they also suffered from a lack of activity in the Far East.

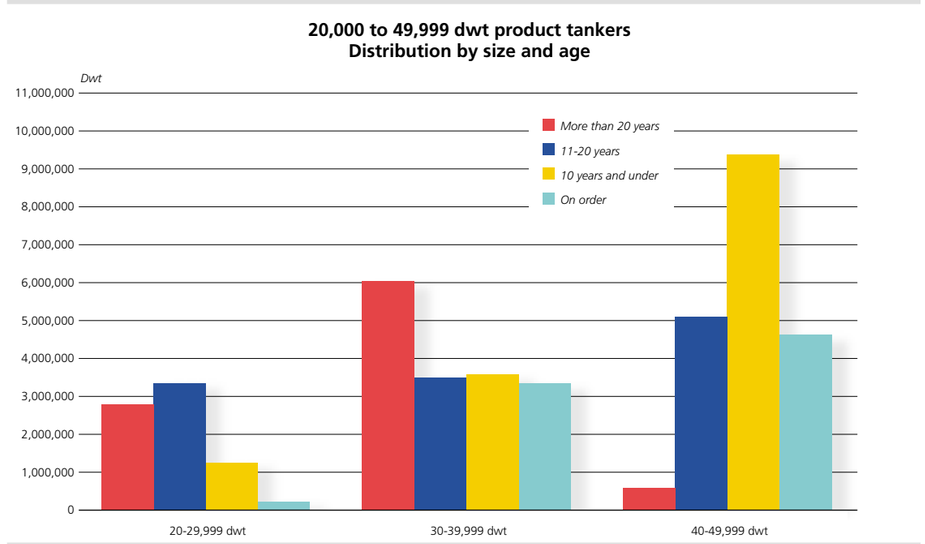
The 'long range' (LR product) from 55,000 to 110,000 dwt

This category benefited from the good performance of the market in the Far East during the first half of the year, during which their daily returns always remained above $30,000 per day and sometimes went up to $50,000 per day. The second-half was more difficult due to the fall in Japanese demand and a virtual disappearance of jet voyages MEG/Europe as from September.

The LR1 were largely used for exports of jet from Middle East Gulf or from the Indian Ocean, as well as voyages of gas oil and fuel oil from Europe to the U.S. The few very modern ships (less than five years) saw rates of close to $20,000 per day for periods of one to five years.

The existence of the "LR2 pool" and contracts at variable levels based on different indices (notably Platts) helped to avoid a really sharp fall in rates for these ships, although the result was achieved at the cost of considerable waiting time which affected daily returns.

The explanation of the slow but steady drop in product tanker freight rates is due more to a fall in demand than a rise in availability.



The U.S. down

The North American zone represents more than 30 % of world demand for oil products (45 % of gasoline demand). However U.S. consumption fell as from the beginning of the second quarter, well before the terrorist attacks of September 11th which merely amplified to a larger extent the decline. The most spectacular example can be found in jet consumption for the month of November 2001 which was 20 % lower than that of November 2000, although the annual consumption for jet and diesel oil was 3 % higher. In November 2001, distillate stocks (gas oil, diesel, and jet) were 15 % above those of November 2000, whilst stocks of gasoline were 10 % higher than the previous year.

Europe lagging behind

European demand was not able to pick up the slack, partly because it only represents a small proportion of world oil product demand and partly because its growth rate of 1.6 % was insufficient. Although European buyers have become a privileged target of exporters from the Middle East Gulf, the Far East and more recently India, this traffic which is a strong generator of tonnes-miles, stumbled at the end of the year principally due to a big drop in jet imports (the daily consumption falling by 14 % in November).

In addition, whilst petrochemical demand has slowed considerably, German distillate stocks at the end of the year are at their historic highs.

The Far East on a cliff edge?

Japan's inability to extract itself from its structural crisis and the exposure of several emerging economies to external contractions (the crisis in tourism and electronics) has led to stagnating demand for oil products within the Far East. As such the annual consumption of jet and diesel in Asia has fallen by 2 % in 2001. The increase in local refinery capacity (Korea, Indonesia, Thailand, and especially India) has favoured regional exchanges and resulted in shorter voyages and cut off the flow of exports towards Europe and the U.S. west coast, which contributed to the good performance of freight rates last year.

Belisaire
12,681 dwt, blt 2001 by Niestern Sander, owned by Pétromarine

The fear of a major crisis in Japan, which could then ricochet on the fragile economies of Korea and Indonesia, contributes to the pessimism in the minds of many observers. The risk of a serious impact on the world scene cannot be excluded.

Despite the need to renew the fleet of product tankers, a flood of orders could unbalance the market.

The fleet of handysize (30,000 / 40,000 dwt) increased by 29 units in 2001 for a total of over the million dwt mark. Forty-two additional units should be delivered in 2002 and 47 in 2003, whereas only 17 ships are programmed for 2004. One hundred and thirty five new ships will have be delivered in four years, nearly a third of the existing fleet.

The fleet of medium range has grown by only 11 ships delivered this year for a total of about 500,000 dwt, but 30 ships should be delivered in 2002, 53 in 2003 and 20 in 2004. In 2005 two-thirds of the fleet will be less than 15 years old.

As to the largest size, four were delivered this year, 11 will be put on the market in 2002 and 25 in 2003.

However charterers have adopted extremely strict quality criteria, especially on age, which considerably reduces the number of eligible ships. This has

become a very sensitive issue in the handysize sector where nearly 50 % of the ships have become practically unemployable.

Despite the pessimistic outlook for the short-term, it is reasonable to expect an improvement in the medium-term if the anticipations do not stifle the expected recovery at birth.

It is obvious that stock positions at year's end and stagnant demand for oil products do not encourage optimism.

Nevertheless the elasticity of tonnage on offer remains relatively small due to increased concerns on quality. It might suffice therefore that the recovery of the American economy lives up to the analysts' hopes for the third quarter of 2002 and that Japan manages its revival for an increase in oil product demand to produce a rapid and substantial rise in freight rates. After all, isn't it what happened at the start of 2000, when rates were at their lowest?

While an exaggerated pessimism seems out of place in the short term, there is still a risk in the medium-term with a financial market historically favourable combined with a lowering of construction costs leading to a wave of orders which in turn would produce a tonnage surplus, that would unbalance the product tanker freight market for a long time to come. ■

Product tankers second-hand market

Some 92 ships of 25,000 to 60,000 dwt were sold for further trading in 2001, compared to 67 transactions last year. Fifty-four units were handysize, 31 were medium range and seven were in the long range size.

Eighteen sales were carried out for ships built in the 70's (last stop before demolition?), 31 for units delivered in the 80's, and 43 for tankers built in the 90's.

Amongst the latter, some 20 were less than three years old. Owners wishing to renew their fleet, and taking advantage of well-sustained freight market at the beginning of the year, produced it has been noticed a feverish activity on the resale of ships under construction, with short-term deliveries obtaining at least up until June a premium over longer term deliveries.

OMI Corp. (U.S.) was certainly amongst the most active, buying not less than 16 modern ships in the medium range category, with a number of them being under construction.

A part of the ships sold were done en bloc and often with attached charters or charters back. Notable buyers other than OMI Corp., were clients of the Livanos group (five ships with charters back) and also clients of the Stelmar group (10 Osprey ships).

After record freight levels achieved at the end of 2000 / beginning of 2001, the serious slowdown of the world economy throughout the year weakened rates, which suffered a continual decline with intermittent blips to plunge precipitously mid year. The events of September 11th only reinforced this tendency which got reflected for real upon the value of second-hand ships.

We indicated last year an increase in values of the order of 15 to 25 % for modern units. This year the trend is clearly the reverse as prices have dropped by 18 to 20 % according to size and age.

Since January 2001, 41 ships have been delivered for 1.57 million dwt. At the same time, 28 ships for a total of 0.97 million dwt have been withdrawn from the fleet, but the orderbook holds 221 product tankers for a capacity of 8.97 million dwt, of which 77 for delivery in 2002 and 104 in 2003. Combined with a slowdown in the world economy, this additional capacity will indubitably weigh upon rates and therefore on second-hand values.

We would like to think that owners could refrain from having such big appetites when ordering, but the anticipated weakness of the yen, the likely reduction in construction costs and the low interest rates will doubtless make it irresistible for some. This will inevitably affect the second-hand values of even the most modern ships. ■

THE OFFSHORE AND SPECIALISED SHIPS MARKETS IN 2001

2001 was overall positive for the different sectors of the offshore business. Crude oil prices in fact remained at strong levels for the first three quarters of the year, peaking over $30 per barrel in February and then fluctuating between a range of $23 to $28 until September. The events of September 11 have made the oil market's future less certain and have highlighted and accentuated the economic decline. As a result by the end of 2001, oil price has already considerably dropped. Despite a certain stability around $17 / 18 per barrel, there is nonetheless a drop in world energy demand and the global economic situation is fragile.

With average oil price levels remaining on balance high, this has encouraged putting into place large exploration and production budgets, focusing mainly on the enhancement of oil and gas offshore fields in deep waters. Technical innovations now allow seismic and geological studies to be carried out at depths in excess of 6,000 metres at sea.

It is most unlikely that oil companies will suddenly curtail deep offshore exploration and production. These fields are to be found generally by definition far from the coastline and also outside traditional land-based production zones (Middle East, CIS, Central America), which puts them outside the risks of conflict which have unfortunately traditionally prevailed in these regions, and also outside the risks of land-based storage.

Support vessels: PSV (Platform supply vessels) and AHTS (Anchor handling tug supply)

The trend to develop oil and gas production in deep waters continues to influence the key players in this industry who foresee a sizeable increase in the offshore contracting services. It is accepted that production in depths over 500 metres will significantly increase due to field developments off Brazil, West Africa, and in the Gulf of Mexico. At the beginning of the year, several offshore shipowners started to modernise their fleet by ordering large units capable of operating in deep waters. Edison Chouest ordered the world's largest AHTS: 347

feet long, 72 feet wide, 6,500 dwt. Tidewater also contracted with two shipbuilders in the Far East to build eight ships. This owner has under construction four AHTS of 84 m with a power of a minimum 20,000 bhp and two platform supply ships are due for delivery between December 2001 and January 2003. Tidewater has announced a fleet modernisation with the acquisition of 20 newbuilding units.

In addition, Rolls-Royce Marine has reinforced its position as a leader in the area of naval architecture, engineering and associated equipment for supply vessels, emphasising the success of its UT designs in the current market. The Norwegian Aker Brattvaag for example, part of the Aker shipbuilding group, has signed building contracts for 21 vessels, mostly UT designs, of which 14 were ordered by the shipowner Gulf Offshore as part of the renewal of its fleet.

The success of the UT 755 design has led to 25 orders in a number of shipyards. This PSV of about 70 m in length, 5,500 bhp, and DP2 has become the ship of reference for anyone wanting to renew their fleet, outside the North Sea, due to its versatility.

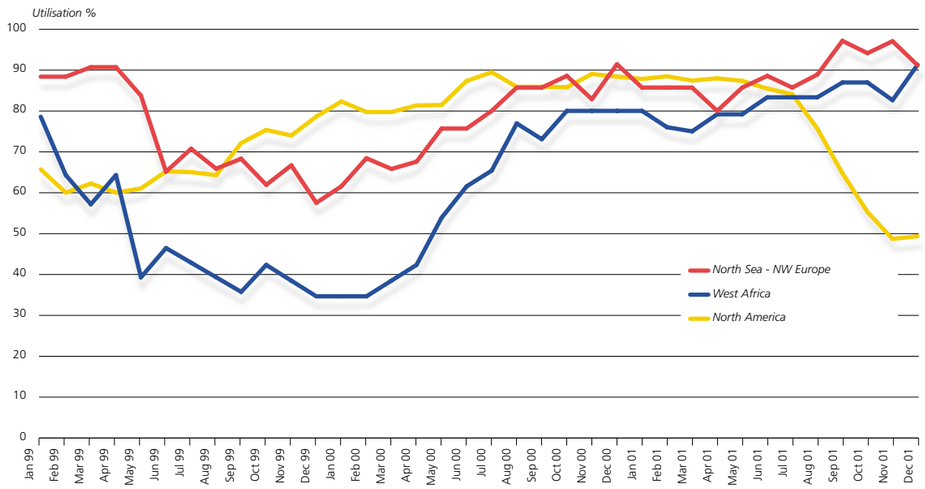
Swire Pacific Offshore, Singapore, after ordering four AHTS in Norway in 2000, has placed an order with the Korean INP for four AHTS UT 738 of 10,000 bhp, 16 knots, 130 tons bollard-pull capacity, for a total cost of $73.2 million.

Bourbon Maritime, the new entity combining all the maritime activities of the Bourbon group and controlling 100% of Surf, has intentions for the latter to become a key player in the deep offshore sector. Since March 2001, Bourbon Maritime holds 50 % of the Brazilian shipowner Delba Maritime. This new entity has signed three long-term time charters with Petrobras for three AHTS of UT 722 class. These ships will be built in the Brazilian shipyard of Fels Setal. Surf has also ordered a ship for multipurpose works, class VS 4501 named 'Athena' with Keppel shipyard in Singapore. This ship, 86,30 m long and 20 m wide, capable of accommodating 82 people on board, fitted with a helideck pad and a crane with a 100 tons lift capacity, will work on a long-term contract on offshore oil production with TotalFinaElf Congo. It will be Surf's 'flagship'. In addition, the joint venture Sonasurf (Sonangol, Surf) won the ExxonMobil Angola tender, comprising 12 ships on long-term charter, namely the entire maritime logistics for the Block 15 field. Together with Eidesvik, Surf has also ordered two PSV of the VS 470 class in Norway.

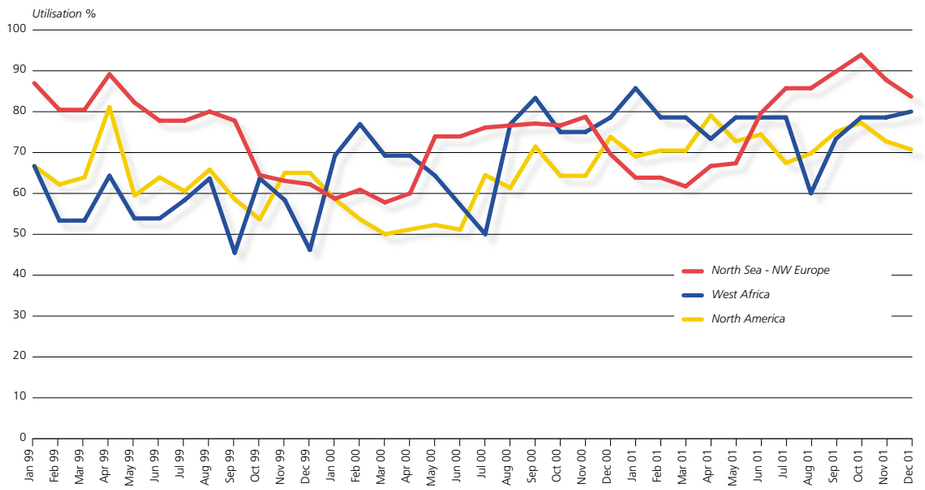
The market is watching out for the first signs of a drop in the utilisation levels and charter rates, which might occur with a number of newbuildings due to be delivered. This is not the case for the moment, outside the Gulf of Mexico, and in particular PSVs continue to be much sought-after and their rates remain high.

Luiana
UT755L type, blt 2001
by Orskov,
owned by Sonasurf

Jackup utilisation rates



Semi-Submersibles utilisation rates



Drilling

The tendency towards consolidation in this sector, which has been going on for several years, will probably come to an end due to lack of valid candidates, following the merger of two big Texan drilling companies, Global Marine (Houston) and Santa Fe International (Dallas). The entity GlobalSantaFe has given birth to the new number two in the sector, behind TransoceanSedco and in front of Pride International, now number three, following the acquisition of Marine Drilling Co. The new company's headquarters are in Houston and owns 90 drilling platforms working world-wide. These recent mergers will enable the new entities to take major positions in the market and allow exceptional growth prospects with substantial economies of scale on overheads, giving a better evaluation of their share prices on the stock market.

The market of jackup rigs has remained steady with utilisation rates in the North Sea and West Africa over 80 %. It has recently dropped in the Gulf of Mexico down to a level of 67 %, due mainly to a sharp drop in the price of natural gas. In Brazil, utilisation of jac-

Luegi
2 x 2,758 bhp,
blt 2001
by Damen Shipyards,
owned by Sonasurf

kup rigs remained at a level of 100 % throughout the year. South-East Asia also saw very high utilisation rates around 86 %. During the course of the year 2001, the jackup rig market largely contributed to the profits of drilling companies, although a substantial decline in the levels of activity are foreseen for 2002, and the extent will largely depend on the way the North American gas market moves.

The utilisation rate for semi-submersibles has remained high all over during the course of this year, and 43 out of 47 semi-submersibles located in the North Sea are working at the end of 2001. All the modern drilling ships with dynamic positioning, with the exception of some for technical reasons, were employed under contract by the end of 2001.

The market for building mobile drilling rigs (with eight firm contracts) saw orders confirmed by SantaFe Drilling in Singapore for two jackup rigs and two semi-submersibles, and also Maersk Drilling declaring an option with Hyundai for a second jackup. These two units will be the two largest in the world with legs of 205 metres, allowing drilling in regions like the North Sea in depths of over 150 metres. The order by Atwood with Keppel Fels, Singapore, for a large jackup of Mod V class, should be noted, as well as the Rowan Drilling order in its own shipyard at Vicksburg for a jackup of Tarzan 250 class and that of Maersk Drilling for a semi-submersible with a new design, DSS class 20, which will be assembled by Keppel Fels Singapore in Azerbaidjan, and which has already been fixed for three years with ExxonMobil. The discoveries and drillings for developing numerous deep water reserves such as those cited above, will continue to support the overall demand for semi-submersibles, as well as for drilling ships with dynamic positioning navigation such as 'Pride Africa' and 'Pride Angola', ships of IHC Gusto 10,000 class having acquired a reputation for reliability.

Construction and underwater work

This sector of the offshore market has continued to consolidate itself. Technip and Coflexip have come together, the latter having earlier acquired the deep water department, Aker Deepwater of the Norwegian Aker, which holds amongst others the licences for constructing of Spar platforms. The new company Technip-Coflexip has resulted in the creation of the fifth largest oil service group in the world, controlling the full range of activities from upstream to downstream. This new entity employs 18,000 people and has achieved a pro-forma turnover of 4.5 billion euros in 2000.

The new venture between the American Halliburton and the Norwegian DSND should also be mentioned since it contributes to expand Halliburton's services in the scope of underwater work sector.

The pipe-laying and underwater construction markets should grow by 60 % in the next five years under the assumption of a steady rise in demand for offshore oil and gas. However we should not forget that the offshore industry is intrinsically cyclical, due to the effect of the price fluctuations for oil and gas, and the variable lifecycles of investments, depending on specific regions in the world. The development of pipe-laying at over 500 metres depth at sea calls for highly sophisticated pipe-laying vessels which could lead to an increased competition in this specialised market, nevertheless, the mere fact of having the right ship may give a substantial advantage to the extent that the main operators then have construction projects technically in place ready to be executed. Anyhow, in most cases, subsea contractors had or will have to order such kind of modern asset on a speculative basis. In this respect, Dutch contractor Heeremac, has committed more than $160 million this year to the upgrading of its laying and lifting platform 'Balder'. We can reasonably assume that large vessels capable of operating world-wide will take advantage of the fluctuations in the oil and gas prices, and seek employment in the most advantageous regions.

EPC (Engineering, procurement, contracting) and FPSO (Floating production storage and offloading vessels)

The EPC market, linked to the engineering, construction and installation of necessary structures for oilfield production, witnessed a significant improvement this year. There were a number of noteworthy contracts of impressive technical and financial size, mainly in the Gulf of Mexico and West Africa, such as Shell Nakika (GOM), Chevron Sanah (Angola), Exxon Kizomba A (Angola), Shell Bonga (Nigeria), Conoco Belanak (Indonesia), BP Crazy Horse (GOM). This latter oil field has estimated reserves of one billion barrels situated 125 miles offshore New Orleans, and calls for the construction of production platforms with a unit price of roughly $500 million each, allowing production at depths of 2,000 metres.

Despite a certain number of projects which are experiencing delays in approval, the fundamentals remain strong, given the importance of projects still under offer and the maintaining of very high development budgets. Examples of such projects are: Exxon Erha (Nigeria), ChevronTexaco Agbami (Nigeria), TotalFinaElf Dalia (Angola), BP Plutonio (Angola), and Chevron BBT.

Competition between the main prime contractors becomes fierce as soon as the need of a drydock for the construction of a floating structure comes into play. Access to the right shipyard for constructing and adding components remains a vital aspect for such work, but this situation should ease with the slow-down foreseen in shipbuilding in 2002. There is also the gradual phasing out of the Norwegian EPC contractors with the merger between Kvaerner Oil & Gas and Aker as well as the takeover of Moss Maritime engineering by the Italian Saipem.

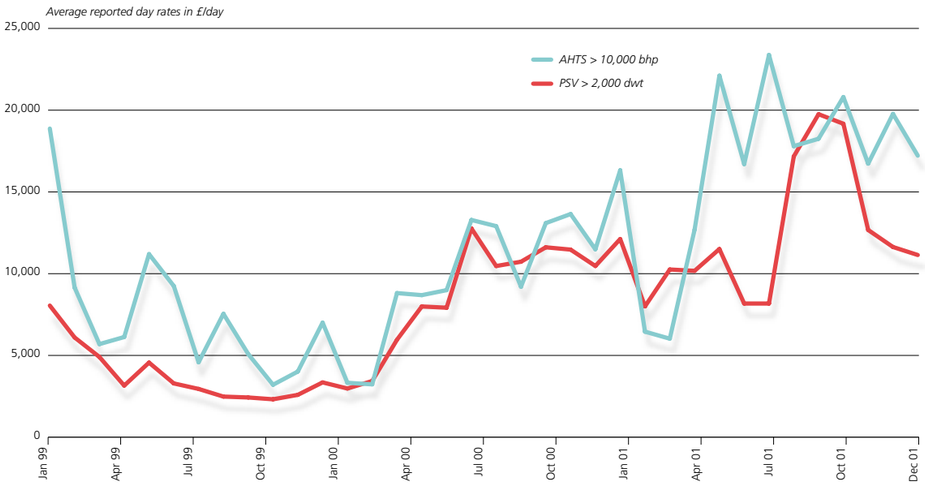
On the other hand, the surge of HHI offshore as a key player has been more than ever confirmed.

Floating dock
16,000 t lifting capacity,
sold by Flender Werft
to Dunkirk Port Authority

Credit should be given to the technical success of 'FPSO Girassol' operated by TotalFinaElf, at a depth of 1,400 metres, 200 km off the Angolan coastline. This is the biggest unit of its class currently in service, (300 m x 60 m x 30 m) on which there is 25,000 tons of oil processing equipment on the deck of the barge. It contains accommodation for 140 people and has a storage capacity for two million barrels of crude oil. The FPSO started operating in December 2001 with projected production of 200,000 b/d rising to 300,000 b/d.

The leased FPSO market also saw a sizeable expansion this year. One currently expects up to 40 new

North Sea supply vessel market



Lodbrog
redelivered by Remontowa, to ASN Marine A/S after an extensive conversion work from a former ro-ro into a cable ship

units due to come into operation within five years, this figure also includes the units, which will be fully owned and operated by oil companies, bringing a total of some 110 units throughout the world by the end of 2005. There are today 68 FPSOs operating of which 33 are on long-term hire to operators. West Africa and Brazil remain the two main markets for this type of business.

The year 2001 saw a record number of contracts awarded, which confirmed SBM's leading position. Among the main contracts, there were two generic FPSOs for Exxon (SBM), the replacement of the 'P36' platform in Brazil by a leased FPSO, similar to 'FPSO Espadarte', the 'FPSO Doba' for Enterprise Oil Brazil (Modec), Soekor, Sable Field (Bluewater), the very big FSO for Exxon Chad/Cameroon (Modec), and the newbuilding FPSO for TotalFinaElf in Libya (Exmar Offshore). In West Africa and Brazil the standard size is two million barrels.

The main changes in this sector saw the acquisition of the Singapore Nortrans by the Norwegian specialist in drilling and furnishing platforms, Prosafe, as well as the acquisition of two FPSOs, 'Berge Hugin' and 'Navion Munin' by the Dutch contractor Bluewater. The latter now holds a dominant position in the North Sea.

At the start of an era of heavy conversions for such projects, the main shipyards in Singapore have largely confirmed their predominant position in this sector.

Cable laying vessels

The Internet boom and the correlated extraordinary expansion of telecom which came to a head in 2000, led to orders being placed for a number of cable layers and underwater telecom system repairing ships. The big companies constructing optical fibre networks then projected a steady increase in international networks. Some cable laying vessels were ordered by owners who previously had no experience in this business. It is the first time since sea laying operations started back in the mid 19th century, that this sector has seen such a deregulation and such an explosion.

In 2001 the bursting of the financial bubble of TMT (Technology, Media, Telecom) companies has led to a reduction in the investment budgets in this sector and a number of underwater optical fibre projects have been abandoned.

Cable laying vessels started being delivered by the construction and conversion shipyards at the end of 2001, but will be arriving on the market in greater numbers in 2002. Their arrival unfortunately comes at the time when the cable laying sector is feeling the pinch. Key players in this area are looking for solutions to overcome this downturn.

It is likely that older cable laying vessels will be progressively dismantled and/or scrapped, and that some units could be transformed so as to make them viable for offshore business, in particular for use as ROVs (Remotely operated vehicle), support vessels. In addition, some construction and conversion projects will be delayed. The main operators have also decided to carry out a drastic cutback in numbers.

In conclusion it should be added that a number of converted or new vessels will be used as maintenance ships on long-term contracts taken up by the operators of these new systems. These contracts concern in particular regions which have been newly equipped such as Africa, the Indian Ocean, and the Asian arc (Japan, China, Singapore), which will give certain units employment and thus ensure a steady revenue over years to come.

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Concerning BRS, and in line with the maxim frequently used by our American friends to "think positively", we advise our readers, who are not yet informed, that we have opened in May 2001 an office in Houston (Texas), specialising in the offshore sector and run by Americans: Mr. Dave Weinhoffer (director), assisted by Mr. Jon Thielemann and Mrs. Rola El Zoor. We trust that the European "savoir-faire" and the French touch in the field of shipbroking, linked to the skills of American management, will allow us to serve the best interests of our American and international clients. ■

THE CHEMICAL CARRIER MARKET IN 2001

After experiencing a morose period over the last four or five years, characterised by very low freight rates and an important surplus of supply over demand, the chemical carrier market started moving up during the fourth quarter of 2000. This tendency continued at the start of the year 2001 practically without interruption until the month of September. The tragic events of September 11th in the United States brought about an abrupt halt to spot activity throughout all markets and at the end of the year, as we write, no recovery has really manifested itself. Nonetheless, it should be noted that all through the year and even after the events of September, term contracts have remained extremely active and have allowed owners a comfortable level of employment for their vessels.

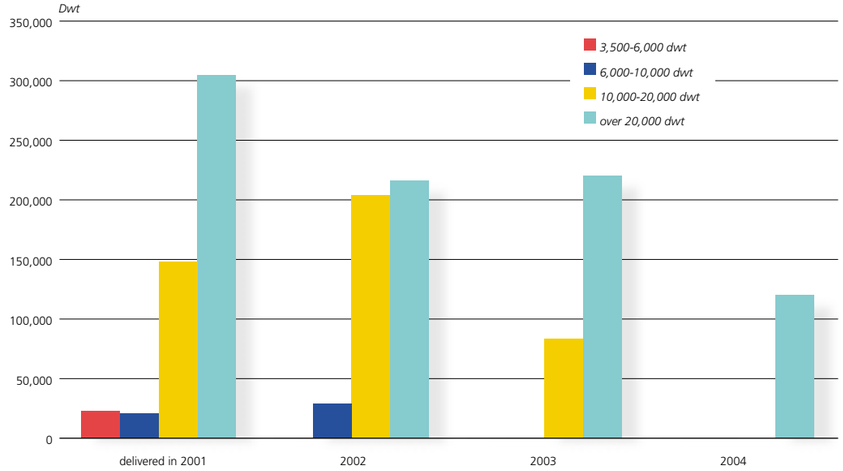
The year 2001 has also given rise to an overall improvement of the financial standings of the main owners and operators, which is a significant achievement. It has been quite a time since such a situation has occurred.

The financial results posted by the main operators over the first six months of the year give an idea of the magnitude on the increase in freight rates as compared to 2000. Stolt-Nielsen showed a 64 % improvement on turnover over the first two quarters and Odfjell-Seachem 40 % over the same period.

The general improvement this year in the chemical sector can be explained by both structural and temporary reasons.

From a purely structural point of view, whereas the market over the last few years was suffering from a chronic imbalance due to the important surplus tonnage, the year 2001 gave place to a more balanced situation often in favour of owners with demand in certain markets being in excess of vessel availability.

Freight rates have logically benefited from this better balance. The rise registered already in the first quarter, carried on right up to the end of the second quarter, then marked a pause during the summer months. The slowing down of the world



economy, particularly in America which plays such a prominent role, made itself felt at the middle of the year, and the resulting drop in demand mainly for voyages from the US Gulf, led to a substantial drop in spot rates at this time. These lower levels have spread throughout all markets following the events of September 11th. However, the overall balance in supply and demand which exists and seems not to be under threat for the next three years means that the petrochemical sector, in contrast to others such as the dry bulk, containers and tankers which have all seen plunging rates, has freight levels which have levelled out but without any appreciable drop.

Another structural change which has contributed to the general improvement of the market has been the rationalisation within the chemical carriers, put in place by owners several years ago in order to reduce costs and to adapt to the new regulations and ever more stringent requirements in terms of security and efficiency. Mention should be made of the agreement between Stolt-Nielsen and Tokyo Marine on the routes to the Far East done in order to reduce the competition and the risks of port delays.

Other factors but of a temporary nature also contributed to the positive improvement of financial results for owners this year. On the one hand the continuous drop in crude oil prices which have gone from $24 per barrel at the beginning of the year to finish at $18 at the end, has resulted in lower bunker prices and thus lower operating costs. On the other hand, the strong dollar in relation to European currencies has helped European owners and has also had a beneficial effect on their financial results.

Clearly at year's end, uncertainties as to the future of the chemical carrier sector exist. These uncertainties lie mainly in the increases for insurance premiums to be applied for next year on hull & machinery, the P&I Clubs or risk premiums paid out to the crews, but above all on the timing and the extent of the recovery in the world economy.

Freight rates

The North European market maintained a good level of freight rates with a steady increase right up till the third quarter, thanks to the solid covering on term business and a well-sustained spot market. At the end of the year, a significant drop in rates came with the slow-down in spot activity, but generally it was a good year for owners with rates rising by some 10 / 20 %.

Inter-Mediterranean activity has become a two-tiered market distinguished by some charterers requiring only quality ships, with the result that good modern vessels have obtained substantially higher levels.

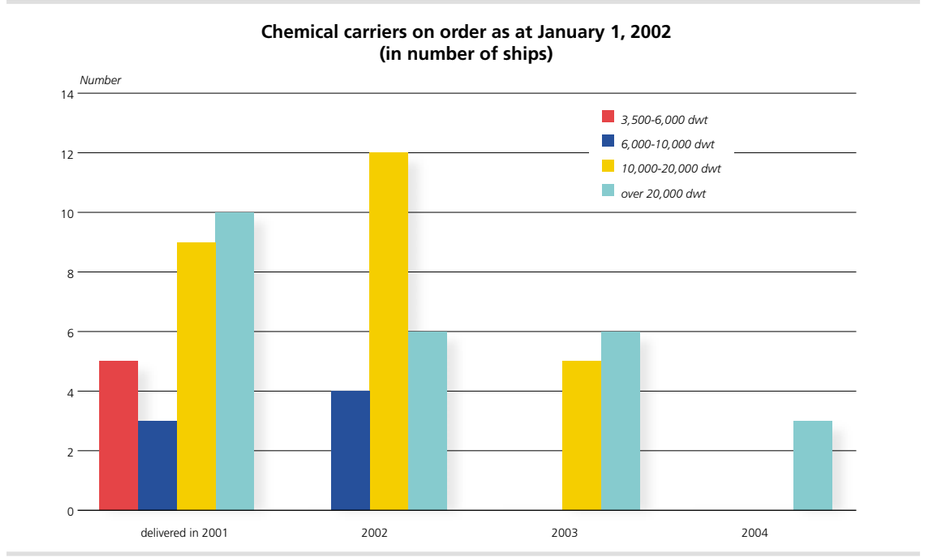
The North European short-sea traffic, movements to and from the Mediterranean, have experienced significant fluctuations in the volumes and freight rates, with notably a strong demand in the first

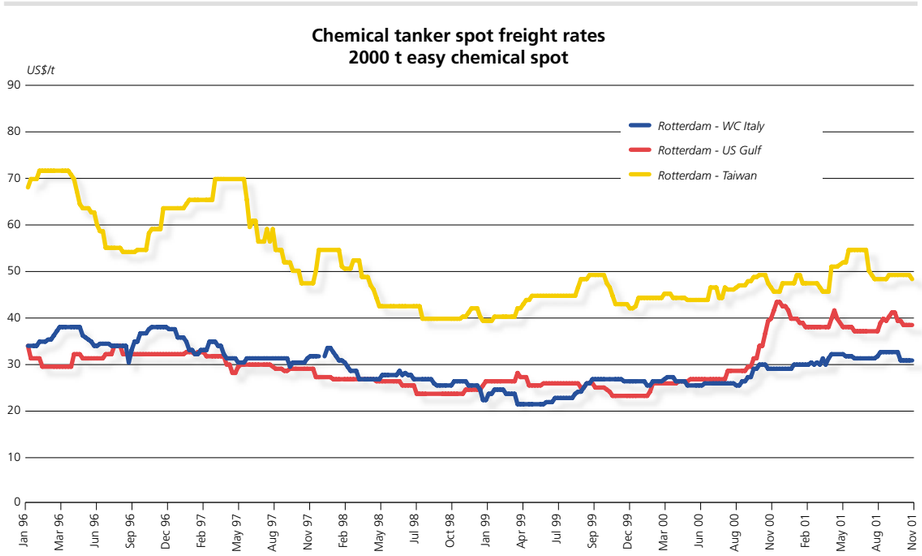
Pointe du Croisic
6,500 dwt, blt 2001
by Kleven Florø, owned
by Navale Française

quarter in the northbound voyages and then in the second quarter on the southbound voyages. Rates increased by as much as 20 % in the peak period and by some 10 % on average over the year, which has resulted for 3,000 ton chemical lots in freights at around $30 per ton for cargoes into the Med and some $27 / 28 per ton on the Med / North Europe leg.

On movements from US to Europe, the market has remained quiet up until September, despite certain occasional variations. Since the events of September 11th, spot activity has slowed down considerably, in particular for "trading" cargoes. The contract nominations however have been kept at a high level throughout the year, even despite a slight reduction since the month of September.

In the beginning of the year freight rates for easy chemical lots of 3,000 tons between Houston and Rotterdam stayed at the levels that they experienced at the end of 2000, namely in a bracket between $37 / 39 per ton. At the end of the first quarter, rates dropped down to $35 per ton and steadied out at this level until the middle of the summer.





The drop registered at this time worsened with the slowing down of the American economy and the events in New York in September, to achieve a level of about $33 per ton at the end of the year.

On movements from Europe to US, the market continued to rise during the first quarter with a peak coming in March / April 2001. Big parcel lots of oil products and MTBE started seeing lower rates as from May onwards and this tendency carried on up until the end of the year. Cargoes of chemical products however have remained at healthy levels both in terms of volume and rates right through the year.

For 5,000 / 7,000 ton lots of easy chemicals from Rotterdam to Houston, freight rates went from $29 per ton at the start of the year up to $39 per ton in March / April and have settled down since May to a level of $32 / 35 per ton.

Traffic from Europe into the main ports of S.E. Asia has been on the increase and freight rates have also risen considerably over the year, with a high at the end of the summer. Four main owners share this market, covering for the most part contracts in the hands of industrialists.

On the spot market rates for lots of 1,000 tons requiring stainless steel tanks have increased by some 20 %, for example out of Rotterdam into Singapore, Korea, and Taiwan the market has gone from $55 per ton to $65 per ton.

Nonetheless it should also be noted that at year's end the fall-off in activity linked to a policy of wait-and-see, in particular by China and her Asian interests, preferring to hold off for the cost of raw materials to drop further before restocking. The events of September 11th as well as the over-optimism in the demand forecast have also provoked a lack of confidence with exporters of chemical products.

This slow-down has brought with it a drop in the market which is now back to the freight rates that were seen at the end of last year.

The fleet

A slower rate of increase in the chemical carriers fleet which began during the past two years has continued in 2001. It results from the dramatic drop in new orders placed by the main operators since 1999, pursued in 2000 and maintained this year. The important fleet modernisation programme undertaken in the years 1995-1998 had as consequence a plethora of new tonnage coming into service during the years 1997-1999. The protracted depression in chemical carriers resulting from the Asian crisis of 1997 combined with the excess tonnage, seems at last to have caused owners to be more prudent when investing. The declining rate in the increase of the fleet is however offset by the very low level of scrapping. The drop in the number of vessels on order would have been even more significant without the delay in delivery dates of a number of ships in certain shipyards, which are experiencing technical problems in completing orders.

Since the beginning of the year, 22 vessels for 406,000 dwt have come into service, compared to 78 vessels for more than 1 million dwt delivered in 1998, or 44 chemical carriers for 800,000 dwt delivered last year. The average size of these ships is 18,500 dwt. To this total however, three vessels of 59,000 tons should be added which are due for delivery by the end of the year but will probably slip into 2002 for two of them. The orderbook for the end of 2001 amounts to 39 ships for 960,000 dwt. The majority of orders do not extend beyond 2003. New orders placed this year have gone mainly to the Japanese who have offered relatively prompt deliveries: 22 vessels for 448,000 dwt are foreseen to come into service in 2002, and nine vessels for 267,000 dwt in 2003, the balance being the delayed orders placed in Poland for the account of Odfjell-Seachem. This year none of the main chemical carrier operators have placed orders and essentially new orders have come from Japanese operators such as Iino Kaiun who have invested in new ships to replace older units.

The level of scrapping has remained extremely low. It is unfortunately a recurring theme in this sector which is preventing a steady elimination of the oldest units. Since January 2001 only six vessels for 32,720 dwt have been sent to the scrapyards. These figures are to be compared with last year's eight ships for 93,000 dwt and in 1999 with only three for 7,200 dwt.

As we mentioned last year, in addition to vessels dedicated to transporting chemicals, there is a growing number of coated product tankers, classified IMO II or III, which can be added and whose orders have virtually exploded since the 'Erika' incident of 1999. In the 25,000 / 50,000 dwt size category, no less than 220 vessels for 9 million dwt are on order and 35 for 1.3 million dwt have been delivered since January. These ships can potentially compete with the stainless ships for transporting easy chemicals. Nonetheless, one can say that the chemical carrier fleet is in the process of getting into better shape.

Globally despite the rather pessimistic economic forecasts for 2002, the chemical carrier sector seems well placed to face the difficulties that lie ahead in the coming months. According to the experts, the slowing down of the economy should produce a pause in the trend towards higher freight rates in this sector for next year, and consequently give reduced returns in the short term for the main operators.

The downturn in the economy will probably bring about certain changes in the flow of traffic, but on the whole demand is healthy and should even see a slight increase of 4 % for next year, above the increase in supply which is planned to be about 2 % in 2002.

We do not foresee an important risk of over-capacity of tonnage over the next few years, except in the case of a collapse in the product tanker market which could then hypothetically look for work within the chemical carrier trade. On balance we believe that freight rates should stabilise over the coming months before starting to pick up again with the predicted, or at least hoped for, recovery of the world economy in the second half of 2002. ■

The second-hand market for small product tankers and chemical carriers

The lack of interest posted by the large chemical charterers and even more markedly the oil Majors for single-hulled vessels has been the most notable aspect of the year 2001. It helped push up the value of the rare double-hulled vessels being offered second-hand. We can give as examples the 'Sioux' built in 1981 (6,400 dwt, coated / coiled) which went for the sum of $3 million, the 'Bacalan' (11,500 dwt, built in Finland in 1982, coated / coiled / ice class) sold for $8 million and the 'Trelsi' built in 1991 (15,000 dwt, 17,000 cbm, coated / coiled) sold for $16.5 million.

2001 was thus a year, which was orientated principally towards newbuilding of small product tankers (between 5,000 and 15,000 tons). Turkish shipyards were able to offer numerous resales available for fairly prompt delivery, amongst which were the 'Pyla', the 'Clipper Legend' and the 'Clipper Leader' (10,000 dwt, 12,000 cbm) and the 'Sukran C' (4,700 dwt).

Nonetheless, the number of second-hand sales was considerably higher, which goes to show that it is always possible to find buyers who are looking for valuable employment of ships, be it even single-hull, as long as the price is right. We can illustrate this with the sale to Aksay of two chemical carriers the 'San Mateo' and the 'San Pedro' (11,300 dwt, stainless steel and zinc coated, built in 1988) for $10 million en bloc.

In general it can be said that 2001 is in the post-'Erika' era characterised by a marked acceleration of the fleet's renewal with a confirmed preference by charterers for the 10,000 / 15 000 tons size category.

If we were to judge the chemical carrier market solely within its own confines and criteria, we could conclude that the offer and demand of tonnage is in better balance than two years ago. This is borne out by a firming up of freight rates since the end of 2000. However, we should also take into account the growing number of product tankers which are also suitable for chemical cargoes (as can be witnessed by the numerous product/chemical carriers of 35 / 45,000 tons, ordered in Korea or Croatia this year). The decline in rates, which we are experiencing currently in the sector of product tankers, could weigh indirectly on that of the chemical traffic which is exposed to these ships. We expect in consequence that ships above 20,000 tons in the oil market and the easy chemical sector will play an increasingly reciprocal role as a balancing factor in the coming years, even if in general the chemical carrier market will remain less volatile than that of the products which is more exposed to the spot market.

For vessels under this size category, the prospects are good given the distance still to be covered before a renewal of the fleet meets the growing requirements of the oil charterers and the lack of flexibility of demand in this segment of the market. Once again the proverb of Florian will prove to be true, namely that "To live happily, be discreet". ■

THE LIQUEFIED PETROLEUM GAS SHIPPING MARKET IN 2001

A serious knockout on all markets

Significant events

Whereas the year 2000 saw a strong increase in the price of oil products including LPG and derivatives, and a substantial rise in freight rates in all segments of the shipping market, we thought that the gas sector, not having encountered the same upward thrust in rates as other categories, would somehow behave in a more stable manner and be less affected by a possible market downturn. We were too optimistic! What is the situation now at this year-end, when many certainties and expectations have been shattered, or even dramatically swept aside?

Globally the year 2001 has been marked by a strong slowing down in all industrial sectors, either upstream in terms of raw materials or downstream in the demand of by products and their distribution, with as a natural consequence a strong impact on the freight element.

Jane Maersk
(A.P. Moller) 35,639 cbm, blt 1990 by Hyundai, operated by Exmar and time chartered by Petrobras

La Forge
70,793 cbm, blt 1981 by Nippon Kokan, sold to MC Shipping and chartered back for five years by Geogas

We should take a look at last year's tables illustrating the price variations of several key products and up date them for the past twelve months period:

Products	Nov. 2000	Nov. 2001	%
Crude oil MEG ($/bbl)	32	17	-47 %
Brent, North Sea ($/bbl)	33	18	-45 %
Naphtha CIF Rotterdam ($/mt)	303	155	-49 %
Natural Gas ($/mmbtu US Henry Hub)	8.03 (Dec)	2.54 (Dec)	-68 %
Propane CP (contract price FOB Saudi Arabia) ($/mt)	345	235	-32 %
Butane CP (contract price FOB Saudi Arabia) ($/mt)	345	232	-33 %
Anhydrous Ammonia (FOB Black Sea) ($/mt)	170	85	-50 %
Ethylene (contract price Europe) (euro/mt)	705	550	-21 %
Propylene poly gr (contract price Europe) (euro/mt)	595	405	-32 %
Butadiene (Europe spot) (euro/mt)	610	345	-43%
VCM (CIF Korea/Taïwan) ($/mt)	560	350	-38 %

.....and another look at the levels of the average freight rates achieved on the spot market and the equivalent time charter rates for short periods in the various size categories of ships. We must however remember that these average rates exclude any eventual idle time between voyages and any transactions for longer periods (two to five years).

Ships by size category/capacity (cbm)	Nov. 2000	Nov. 2001	%
VLGC 75 / 85,000 cbm spot MEG / Far East ($/mt)	42	16	-62 %
LGC 52 / 59 000 cbm 2 / 6 months t/c ($/month)	775,000	650,000	-16 %
Mid-size 24 / 35 000 cbm t/c equiv. of spot voyages ($/month)	625,000	580,000	-7 %
12 / 22 000 cbm t/c equiv. of spot voyages ($/month)	475,000	375,000	-21 %
6 / 11 000 cbm ethylene t/c equiv. of spot voyages ($/month)	375,000	275,000	-26 %
4 / 8 000 cbm semi ref. 2 / 3 months t/c or equiv. of spot	280,000	220,000	-21 %
4 / 8 000 cbm pressurised 2 / 3 months t/c or equiv. of spot	220,000	175,000	-20 %

Those negative variations are impressive, as much in the price of products as for the freight rates, regardless of ship size.

We can summarise the main reasons as follows:

◆ The world economy has been running out of breath with all signals going from amber to red, principally in the U.S. which has been the driving force and where a slow-down in consumption was to be feared for quite a time after the easy days of the last few years. Unfortunately the turnaround had to come sooner or later and though everyone tried to cling on to a few sectors which were still on the boil, the decline had already set in as from the beginning 2001. OECD statistics for the 30 member states published successive GDP growth figures each lower than the preceding, to end up with a level near 1 % for the year, and forecasts wildly dispersed for 2002 given the actual recession in the U.S. and in Asia, where levels have now gone into the red. We are a long way from a level of over 3 % which was predicted at the end of 2000, and the tragic events of 11th September only accelerated the trend which was already well established, if often ignored.

◆ A general surplus capacity of production in all industrial sectors, whilst demand was weakening. Even though the old adage "more tons equals more freight" is often true, too big an imbalance between the development in production and the consumption level can undermine a solid basis of economic exchanges. One thereby exceeds the limits of practical hedging between different geographical zones such as have been frequently developed in the product market. Crude oil, naphtha, LPG, chemical gas and ammonia have all been hit by such restrictions.

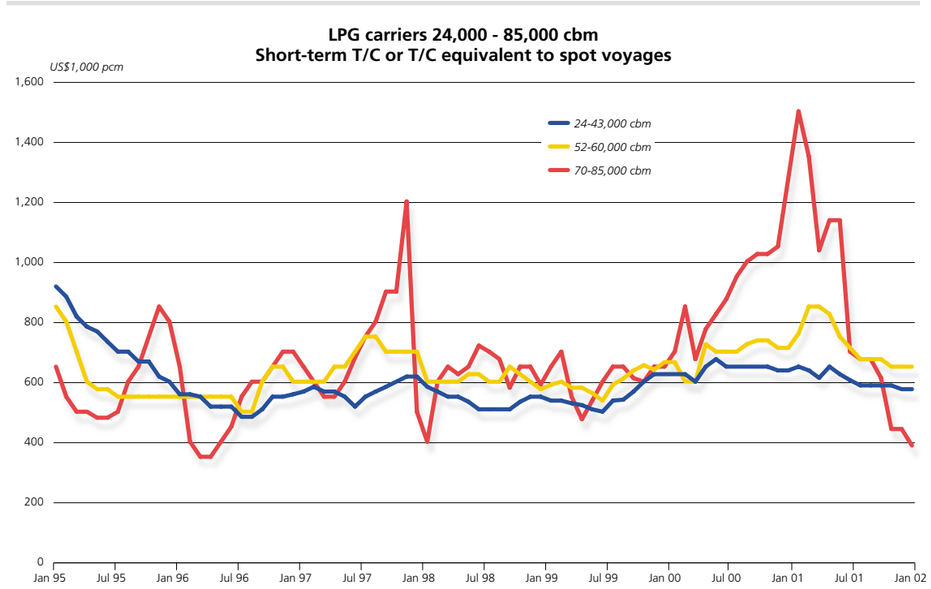
◆ The limits and consequences of mergers among operators: although the majority of ships in the LPG fleet above 8,000 cbm is split and run by the three 'Major' owners, Bergesen, A.P. Moller and Exmar the effect of freight optimisation on certain movements hits a barrier when a substantial reduction in traffic comes up. The addition of idle times no longer allows a pool operator to obtain the appropriate average return on his fleet, whereas a smaller size operator does not suffer from this same handicap. The "Major" owner Bergesen decided to change his policy and approach towards the spot market partly for these reasons but this did not stop the very low demand conditions reflected in 10 units of his VLGC pool (75,000 / 85,000 cbm) currently looking for employment in the Middle East. Although difficult to quantify, the mergers and groupings realised over recent years in the product side have become operational and have now allowed a full optimisation of logistics in several markets which previously were more competitive but less efficient, with inevitable consequences in the volumes exchanged.

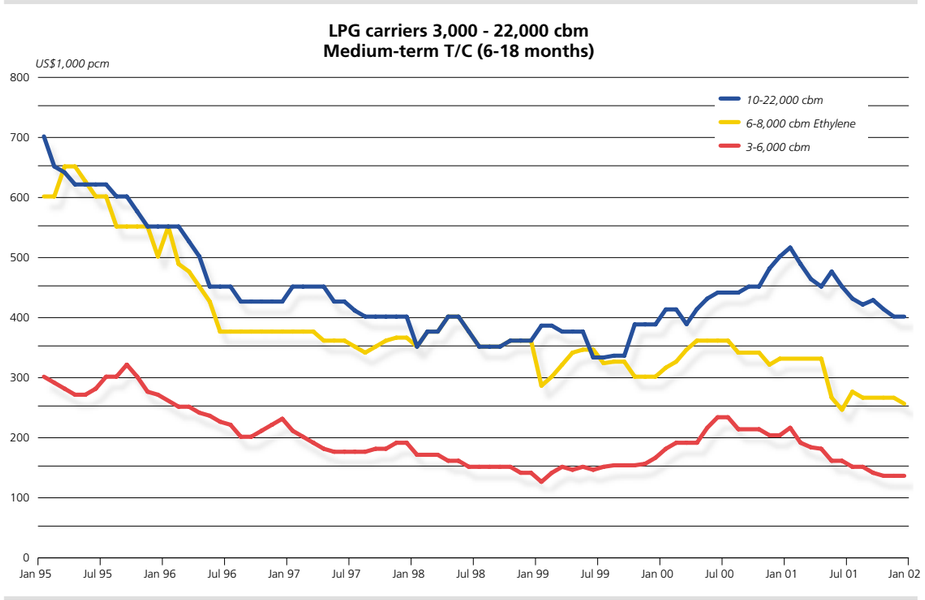
◆ Delivery of newbuildings ordered since 1998: within a market with limited growth, deliveries of new units create exponential availability of capacity. At the end of November, there have been 28 newbuildings delivered since January 1st 2001, with capacities ranging from 1,000 cbm to 84,000 cbm for a total of 578,000 cbm! It should be said however that six VLGCs (78,000 / 84,000 cbm) are included in these deliveries.

Situation by ship size

VLGC (Very Large Gas Carriers) 70,000 to 86,000 cbm

The year 2001 witnessed a wild fluctuation in this sector, still fragile and highly exposed to the struc-





ture of "contract prices" compared to spot prices of butane and propane. Despite a strong rise starting in mid 2000 with the help of the clean product market (naphtha and jet) which led to nearly record historic highs at the beginning of the year at levels of $50 per ton for voyages MEG / Japan – an equivalent monthly time charter rate of roughly $1.6 million – a sharp drop was experienced already as from February.

The pressure of American imports was no longer felt and the clean product options diminished whilst opportunities for LPG employment became more scarce.

The proportion of the fleet employed in the clean product market in January 2001 went from twelve ships down to five or six at the end of the summer and back to eight at the end of November, despite a lower income return. Although not being as firm as at the start of the year, this market still offers freight levels above those in LPG, namely an equivalent monthly time charter rate of about $450,000 as against below $300,000 for LPG, also affecting the percentage of idle time to 8 % in October 2001.

A limited number of time charter transactions have recently been concluded on the basis of three to 12 months, well below previous levels, in the order of $450,000 / 475,000 monthly.

Emerald Star
7,464 cbm ethylene carrier, blt 1992 by I.N.M.A., owned by Stargas and operated by the Gaschem-Medgas pool

There is a serious question mark hanging over this segment of tonnage, supplemented by a further 13 units under construction which are due to be delivered in the next two years, mainly for the account of Japanese and Korean conglomerates, one oil Major operator already tied up with the Bergesen pool, and a few independent owners. Seven of these ships have been delivered during the course of 2001, thus representing a large additional cbm capacity within an already depressed market.

LGC (Large Gas Carriers) of 52,000 to 60,000 cbm

The drop in activity in this size category was not as important as that affecting the VLGCs. This smaller segment accounts for 27 ships being spread between two distinct product markets, ammonia and LPG, of which 22 are controlled by Bergesen.

We were already questioning this issue in our previous reports and we now see this sector has registered four new units ordered for delivery in 2003, a fairly inevitable step in an attempt to improve the average age of this fleet: 14 of them are still over 20 years.

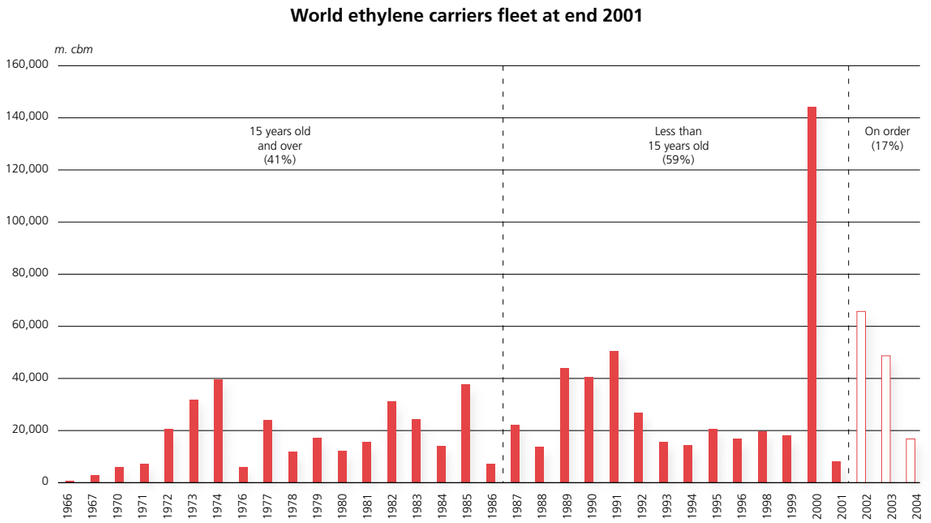
The monthly returns of these ships have substantially fluctuated over the last twelve months following the variations on imports of ammonia and LPG into the U.S., with a pronounced dip in the last quarter, and currently achieve on the spot market about $675,000 monthly, always excluding all idle time between voyages.

A certain stability and therefore less volatility can be expected in this sector over the next few years with the prospect of a few old units being withdrawn from the market.

Mid-size carriers of 24,000 to 43,000 cbm

Amongst the different sizes of ships, this segment is nearly exclusively controlled by Exmar following the big reshuffling by sizes which gradually took place over the last few years, and turned out to be the one least affected by the downturn in the market. The concentration of such a fleet of more than 25 ships, combined with the flexibility of switching from ammonia to LPG and vice versa, means that the rates concluded varied little both on term business as well as spot.

However the idle time for this fleet, roughly 15 % for the first nine months of 2001, has considerably increased in the last two months to close to 22 %. Certain trades like the imports of ammonia into the United-States have been severely affected by the sudden plunge in the price of natural gas. While the time charter rates for a period of one to three years fall within a monthly bracket of $475,000 / 575,000 for a 24,000 cbm and of $670,000 /



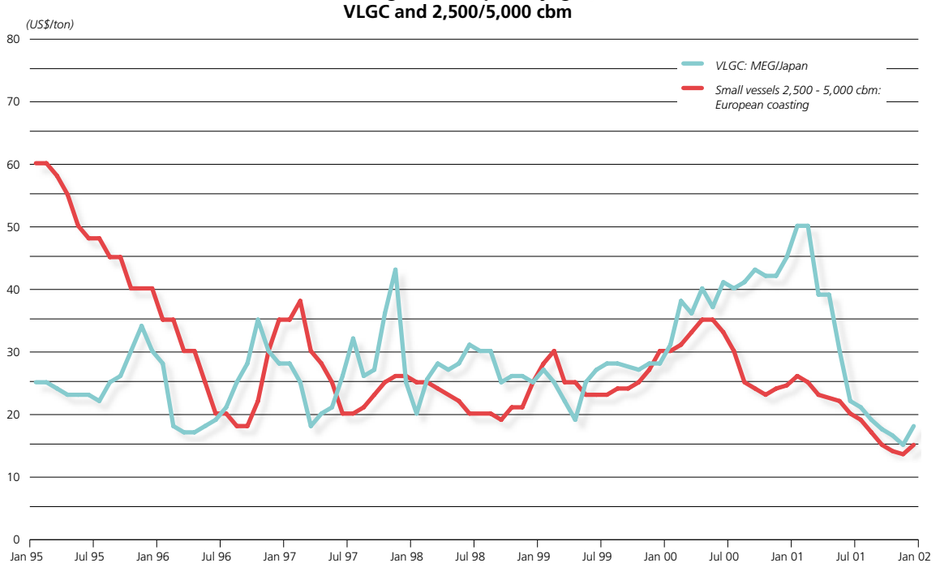
Eole
7,216 cbm pressurised, blt 2000 by Murakami Hide, owned by Tachibanaya and long-term chartered by Geogas

750,000 for a 35,000 / 39,000 cbm, voyage rates achieve the same levels on time charter equivalent basis and sometimes even more when employed in the ammonia business. Nonetheless the sector is vulnerable given that they can face competition in the spot market from both the larger and the smaller sizes. Four new units of 35,000 / 37,000 cbm are currently on order for the account of Bibby, Mitsui, Geogas, and Carbofin, for delivery end 2002 and 2003, but the latter ones should not have too bad an effect on the evolution of this sector, given that several units are due to be withdrawn in the next few years on account of their age.

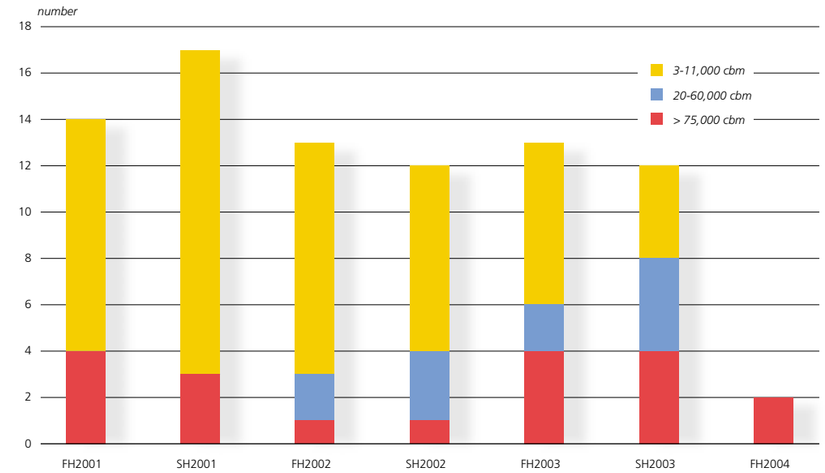
Gas carriers from 8,000 to 22,000 cbm

Mainly dedicated to the chemical gas market, and although partially concentrated in the hands of one Major operator, this sector has been particularly hard hit by the general decline in consumption and demand for chemical gases. The ethylene, propylene, butadiene, and vcm markets have all been subject to the pressure on prices mainly due to a surge in alternative products upstream (polyethylene, polypropylene, etc.) feed by new production units in Saudi Arabia, Asia, NAFTA, and due to the "debottlenecking" of European crackers whose production has been optimised to be able to compete with units over one million ton capacity. Numerous ships of 15,000 to 22,000 cbm not finding any regular employment in chemical gas have had to change sectors and secure voyages in butane/propane, often at very competitive rates compared to the bigger size ships. The results in monthly time charters has been to see a slide in rates throughout the year, going from an average level of $500,000 at the beginning of the year to $350,000 / 375,000 at mid December. Nineteen ships are currently on order or under construction in this size range, including four pressurised ships from 8,300 cbm to 10,500 cbm, and 11 ethylene carriers from 8,200 cbm to 10,000 cbm, all for delivery in 2002 and 2003. We still have to see a major improvement in the chemical sector or else a substantial move of older ships into scrap, to allow this new capacity a chance of getting smoothly absorbed over the next years!

LPG freight rates (spot voyages)
VLGC and 2,500/5,000 cbm



LPG carriers deliveries 2001 & orderbook



Gas Carriers of 8,000 cbm and less

A very difficult year as well for this size of gas carrier, given the slowdown in the petrochemical market and butane/propane trading, as already intimated. Although even more spread out between numerous owners, traders/owners and pools, this fleet has been subject to various buying moves or regroupings between some owners and owning groups (Lauritzen Kosan, Kilgas, Tschudi & Eitzen) looking for a size concentration in the marketing of these ships. The spread in the freight rate levels according to size has been considerably narrowed and falls in a bracket between $150,000 to $250,000 given actual sizes and specifications (fully pressurised, semi-pressurised/refrigerated, or ethylene carrier). The large variations in rates has sometimes permitted the renewal or extension of some term contracts at floor prices for periods between six months to one year, as certain owners prefer to secure an employment at lower numbers rather than tempt an unpredictable spot market, even in winter.

Newbuildings are also present in this sector with some fifteen ship on order between 3,000 and 7,500 cbm, pressurised, semi-pressurised/refrigerated, and ethylene types, all for delivery between 2002 and 2003.

Perceptions

The extent of the slowdown has not spared any corner of the world and the recent bursting of several economic bubbles frequently inflated "virtually" may be the price to be paid in order to go back to the solid foundation on which markets can find a proper footing.

This lean period with the marketing of products and the operating of ships pushed down to levels of operating/production costs cannot last too long except at the risk of seeing the closure of some production sites and partial or full lay-up of ships.

We should however see in the near future a return to a better balanced freight market since advances in the supervision and the technical monitoring of ships, still too often dispersed and haphazard, are beginning to have a clearer impact on more and more geographical sites. New restrictions for higher quality put in place by more and more operators are being tightened and this unavoidable trend should accelerate the pace of the oldest units being sold to scrap, even for some of them when well looked after, and thus reduce the surplus capacity affecting certain size categories of ships. ■

LPG second-hand market

LPG carriers over 50,000 cbm

In contrast to previous years, potential buyers in 2001 were able to profit from the willingness of certain owners to leave this sector or else to refinance themselves. In this vein there was the sale of the 'Baltic Flame', 76,000 cbm delivered in 1992, for $42 million which signalled the return of Westfal-Larsen back into LPG. By way of comparison the last sale of a recently built VLGC took place in 1996 when a five-year-old ship got a price of close to $50 million.

For an older vessel (1981) such as the 'La Forge' a price of around $18 million was agreed between MC Shipping and Geogas, with a reserve that the latter guarantee the ship's employment for five years.

After buying the 'Darwin' 70,000 cbm built in 1977, for $5 million, which had been used for a number of years as floating storage, Trafigura took a commitment to take over the 'Al Bida' and the 'Al Berry' 75,000 cbm built in 1979 as a three years bareboat with an obligation to buy at a price which is understood to be equivalent to $8 million each for a straight cash sale.

20,000 cbm to 50,000 cbm carriers

There were no sales reported in this category this year, but our next revue will probably be able to recount the solution which is being worked on to resolve the problem of the 'Navigator'. As to older units, they seem reserved solely for the scrapyard, as did the 'Gaz Kandla', 26,000 cbm built in 1969.

8,000 cbm to 20,000 cbm carriers

The news of the year is the en bloc purchase by Tanker Pacific of the six 15,000 cbm ships of AP Moller, built between 1981 and 1984, for a price of about $77 million, with the ships joining the AP Moller pool without any guaranteed results on the part of the latter.

Carriers less than 8,000 cbm

Due to lack of candidates available for sale at reasonable prices, the market for small pressurised ships remains at levels comparable to those of the last three years despite a lowering of freight rates.

Consequently in the 3,000 / 3,500 cbm sector of pressurised vessels, Formosa Plastics bought units built in the mid 80's for about $2.5 million. Elsewhere Far East Shipping managed to sell the 'Deneb Gas', 3,300 cbm built in 1991, for $5 million and the 'Subaru Gas', 3,500 cbm built in 1998, for $7.4 million.

For the semi-refigerated carriers, the only units offered for sale are near to or over 20 years, and their owners are often obliged to attract potential buyers by offering extended terms of credit. It was in this manner that the owners of 'Prins Philip Willem' and her two sister ships, of 1,600 cbm built in 1985, were reported sold on the basis of a bareboat charter for five years, equivalent to a cash price of $2 million apiece. ■

THE LIQUEFIED NATURAL GAS SHIPPING MARKET IN 2001

2001 started as a truly innovative year for LNG shipping, with a record number of ships on order but ended with a hint of LNG "deja vu" when orders were cancelled along with new ships on order without firm employment and three firm commitments to Enron looking very doubtful.

So what happened?

The concept of short-term contracts and spot trading was fuelled with extraordinary high US gas prices (+$10 mmbtu in January 2001). The rush was on and an industry that had been shipping constrained, risked being stalled due to lack of newbuilding slots at the yards. By June 2001 it was almost impossible to have a choice of a yard for a 2005 delivery slot, and naturally prices started to rise.

The bright light of the year was the knowledge that this publication appears to be avidly read in Copenhagen when AP Moller finally joined the other big LPG players (Exmar and Bergesen) and ordered their first speculative LNG ship of the new millennium at Samsung!

Otherwise, it was a year that should have had great expectations for evolution but instead settled back into the LNG "status quo" mode hopefully only as a temporary relapse.

The fleet

The fleet was only increased by one unit taking the total active numbers to 128, but by the end of the year there was a total orderbook of 47 units although it had been up to 49 before BG cancelled one of its Samsung units and Tanker Pacific cancelled its very optimistic attempt to enter the specialised LNG "club". BG had previously negotiated the option to cancel its second ship at Samsung without penalty but it would seem that Tanker Pacific faced a $10 million penalty from Izar. This was perhaps a sharp reminder to shipowners trying to enter the "club" that subscription rates are high!

** British thermal unit (0,252 kcal)*

LNG carriers fleet as at 01.01.2002

Small	capacities from 18,000 to 50,000 cbm	total: 16
Medium	capacities from 51,000 to 100,000 cbm	total: 15
Large	capacities above 100,000 cbm	total: 97

We mentioned "deja vu" earlier and this was clearly demonstrated when El Paso chartered in four new Daewoo ships from Exmar. El Paso featured mainly in the collapse of the LNG industry in the U.S. in the early 80's that resulted in ships being scrapped or mothballed for several years. With long-term plans to order more ships and ambitious floating re-gasification units planned, El Paso is clearly taking the new LNG wave seriously with hopefully better results this time around.

The tendency has been to order new large ships but one very small ship has been ordered in Japan whilst Gaz de France looks likely to order a new 74,000 cbm for its cross Mediterranean needs. Larger ships are also on the agenda with Tokyo Gas ordering a 145,000 cbm ship from Kawasaki Heavy Industries (KHI) and the Snohvit LNG project close to signing for three 147,000 cbm ships at Mitsubishi Heavy Industries (MHI), Mitsui (MES) and Kawasaki (KHI).

Perhaps the most significant issue in the present orderbook has been the re-emergence of the membrane technology. Out of the 47 ships on order 37 are membrane, or some 80 %. Potential future orders would suggest a swing back to Moss with a probable eight to be ordered in the first quarter of 2002, but there will be a new membrane system launched soon, CS1, that may prove very attractive. The CS1 should offer increased cargo capacity without increasing the external dimensions of the ship: that is once this industry's reluctance to change is overcome.

The projects

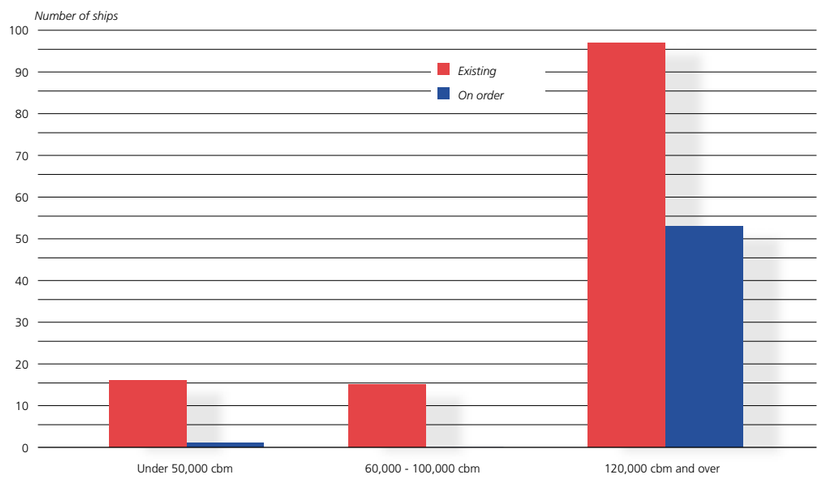
2001 resulted in "more of the same" as far as projects are concerned with no new project launched yet much talk of expansion plans without any firm decision being made.

The Norwegian project, Snohvit, looked as if it may have received a final go-ahead before the end of the year, but government elections and new tax regimes caused a two-month delay. Project partners are eagerly awaiting the parliament decision, expected by 7th March 2002, to see if this ambitious project will finally fly. The high northern latitude of the site makes this plant an LNG engineer's dream as he finally has cold water cooling!

Angola was raising expectations early in 2001 for a 2005 start up but by the end of the year this had slipped to 2007 at the earliest. No doubt the merger of Texaco and Chevron has caused some delay but the organisation of the proposed partnership with other oil companies in Angolan waters is the main reason. Any further delay for Angola could have long-term consequences as Nigeria may well surge ahead as the only real African LNG exporter and as Nigeria LNG seeks financial closing for trains four and five and talks of a new project near Escravos. War-torn Angola could suffer from wary financial investors who try to minimise risk exposure who could see Nigeria as a proven success story. Timing is critical for LNG projects to be successful, and missed commercial opportunities can cause years of delay.

Algeria continues in its usual format but there is talk of increased production, but LNG may have to give way to pipeline investment with a partnership that includes TotalFinaElf, proposing a second pipeline connecting Algeria and Spain. RasGas has started its expansion to service the Petronet LNG contract in India. Further expansion is planned for the Italian Edison contract which unlike the fob Petronet agreement will be ex-ship. The shipping contract for the Edison deal is now in the final stages of tender with five shipowners hoping to be lucky in securing a four-ship deal. Oman LNG was one of the projects suffering from the fall out of Enron's Dabhol India collapse only months before the 20-year delivery contract was due to start. Indications of problems emerged early in 2001 when Enron was unable to receive due payment from the Maharashta State Electricity Board for electricity supplied from its Dabhol power plant (at that time fuelled by naphtha). The collapse of Dabhol also caused some concern to Mitsui OSK who had a LNG ship on order at Mitsubishi that was finally delivered in November 2001. This was the first example of old LNG "deja vu", with a ship ordered but no longer with a viable project. Fortunately a temporary (?) solution has been found with the vessel now chartered to Oman LNG for ex-ship deliveries to new short-term buyers for the lost Dabhol quantities. Abu Dhabi was also due to supply LNG to Dabhol, for smaller quantities, but little has been reported as to who or where these contract quantities will go. The western markets can absorb the LNG but the market price may not satisfy the exporter.

LNG carrier fleet as at January 1, 2002



The first real LNG plant interruption in the industry's history due to political unrest occurred early in 2001 when ExxonMobil shut down its Arun plant in Sumatra (Indonesia) due to terrorist activities in the area. The LNG buyers, however, hardly noticed the event as the other LNG plants in south east Asia were able to assist and service the contracts between themselves. The LNG "club" once again demonstrating its ability to offer its members the true benefits of "membership". Australia finally saw financial approval given for train four with expected start up in 2004. Japanese buyers are once again the main recipients of the gas, but no longer exclusively on an ex-ship basis. Japanese buyers would seem to have learned from their bitter experience of the Asian financial crisis in 1997 that their exposure to mainly ex-ship deals prevented them from market opportunities of alternative sources of cheaper gas. The future look of this industry may probably be decided by the Japanese approach to new contracts.

And 2002?

Perhaps the delayed innovations of 2001 will materialise in 2002. Gaz de France should order a new diesel electric powered vessel with the new CS1 membrane tanks: two new concepts in one vessel, a major step for the LNG industry. With a delivery of 2005 we may not see any other such orders until the new concepts have proven themselves but at least progress is being made. This lead may be accepted, as there has been great concern over recent years about the lack of trained steam engineers for the steam turbine plants. However, our word of caution is more towards the lack of trained LNG operators as with an existing orderbook of 47 ships with a possible 16 this year, we are looking to increase the number of LNG seafarers by about 1,500! Where are these people coming from?

Alternative sources of propulsion must be the main area of concentration for this decade as environmental issues assume greater global importance. LNG ships are the only vessels in operation today that consume an equivalent of about 180 tonnes per day: the oil industry stopped using turbines in the mid-70's. The LNG carried may not offer any pollution hazard but the 5-6,000 tonnes of heavy fuel oil could, let us not forget that the cargo on board the 'Erika' was fuel oil. ■

THE DRY BULK MARKET IN 2001

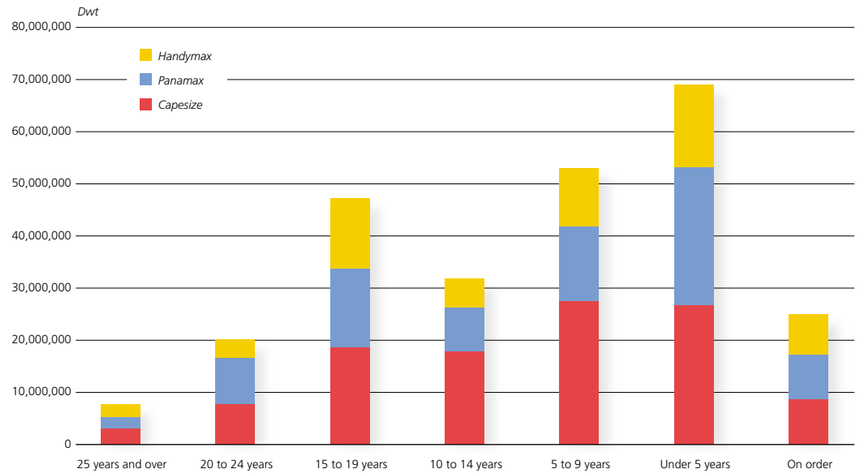
Has the announced crisis happened?

While the year 2000 was a colour print, 2001 was the negative. We should not however be surprised. The low prices for newbuildings, offered throughout 1999 and even in 2000 by Far Eastern shipyards led to a plethora of orders. Deliveries in the course of the year reached record levels of 6.6 million dwt for the Handysize (158 ships), 8.6 million dwt for the Panamax (116 ships), and 5.8 million dwt for the Capesize (34 ships), whilst at the same time the demolition figure was only 8.6 million dwt for all sizes.

Already towards the end of 2000 a slowdown could be felt, the Baltic Dry Index closing at 1,600 points, below its maximum of 1,760 points reached in November, and expectations were clearly bearish. However against all likelihood, the market held up with mixed fortunes until the end of May when the number of ships delivered started to weigh heavily. Exports of Australian coal continued at a sustained rate to an extent that they were able to absorb in the initial months the deliveries of new Panamaxes. China started playing a more and more active role in this sector, overtaking South Africa in second place as largest coal exporter in the world. In the month of March alone, China exported nearly 10 million tons of coal. On the other hand, right from the start of the year, the demand of iron ore was in decline as compared to 2000 figures.

Although the Chapter 11 bankruptcy filing of a number of American steel companies of which Bethlehem Steel is the most noteworthy had a relatively small impact on the volume of ore transported by sea, the world economic environment dictates the rules for steel operators. According to the International Iron and Steel Institute, American production in 2001 has dropped back by 10.9 % as compared to 2000. Production in the E.U. was down by

Dry bulk carriers fleet over 40,000 dwt by age class - end 2001



2.7 % and the two heavyweights – France and Germany- were respectively down by 7.7 % and 3.4 %. At the same time India saw its production rise by 1.4 % and Japan's dropped by 3.4 %, but Asia registered a combined production of 332 million tons namely 4.0 % higher as compared to 2000. Once again China showed itself to be a major player with production reaching 141 million tons.

In 2001 world crude steel production totalled 823.9 million tons against 829.6 in 2000. Given the uncertainties in the international scene, the result is remarkable.

In the light of these figures one is tempted to conclude maybe a little hastily that the fall in freight rates was the result of an excess of tonnage on offer. This impression needs to be tempered somewhat. One of the highlights of this year was the merger, after that of British Steel and Hoogovens in 1999, of Usinor, Aceralia and Arbed to give birth to the number one steel company in the world with a production capacity of 45 million tons. Other steel companies are following as a merger between NKK and Kawasaki has been announced.

Whilst awaiting the outcome of the big merger, as well as doubts about the world demand, an important volume of contractual cargoes was not covered. Elsewhere the necessary adjustments to production and stocks were done at the last minute, on a step by step basis as the American economy slipped into recession, as Japan went deeper into its stagnation, and with the slowing-down of activity in Germany.

Finally, suffering from a double monetary constraint and the high freight rates of 2000, Japan and more especially China relocated their ore supplies from Australia at the expense of Brazil, thus reducing the volume in tonnes-miles transported. This situation prevailed right throughout 2001.

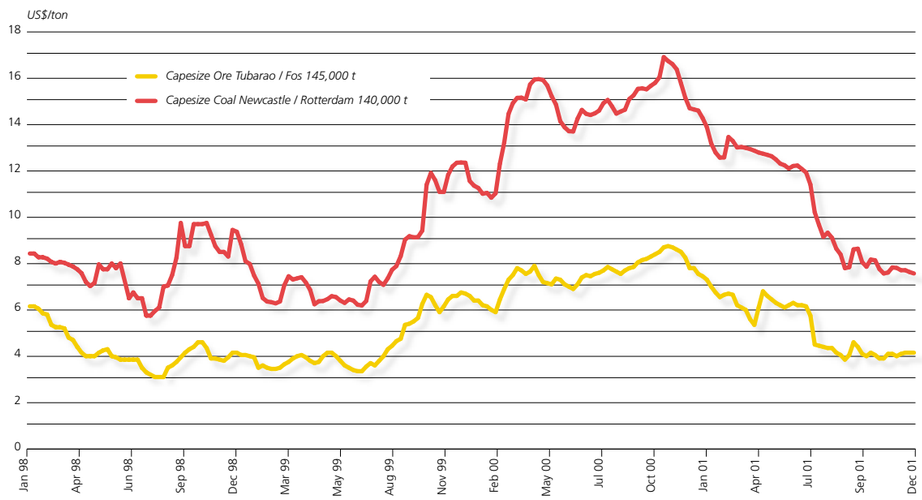
Elsewhere world demand for coal, despite rising regularly, has also seen some changes. As for ore, the Asian economies switched increasingly to Australian or Chinese coal, at the expense of South Africa and America. To illustrate this, in the first nine months of 2001 South Africa exported 5.9 million tons towards Asia as compared to 11.8 million tons for the same period in 2000.

Steel companies have not been the only ones to merge. The Australian mining company BHP and the South African Billiton have created one of the biggest world groups. In the cement industry the merger between Lafarge and Blue Circle has created the biggest world force in this sector with a production of 14 million tons. The German Heidelberg Cement with its purchase of Scancem are close on their heels. Grain companies got into the act with the purchase of the American Continental Grain by its compatriot Cargill in 1998. There are others who have been left aside in this consolidation as can be witnessed by the bankruptcy of the Swiss André.

This process could not leave the shipowners totally indifferent. Their response came quickly as already in November 2001 the English ABC-Zodiac (ABC being already the product of a merger between P&O/Shougang) and the Belgian Bocimar announced their union, giving rise to the largest world Capesize owner with 80 ships (bearing in mind that the total Capesize fleet is 656 ships). The creation of very large Panamax or Handymax owners has not yet occurred, but it is true that these markets are much more dispersed.

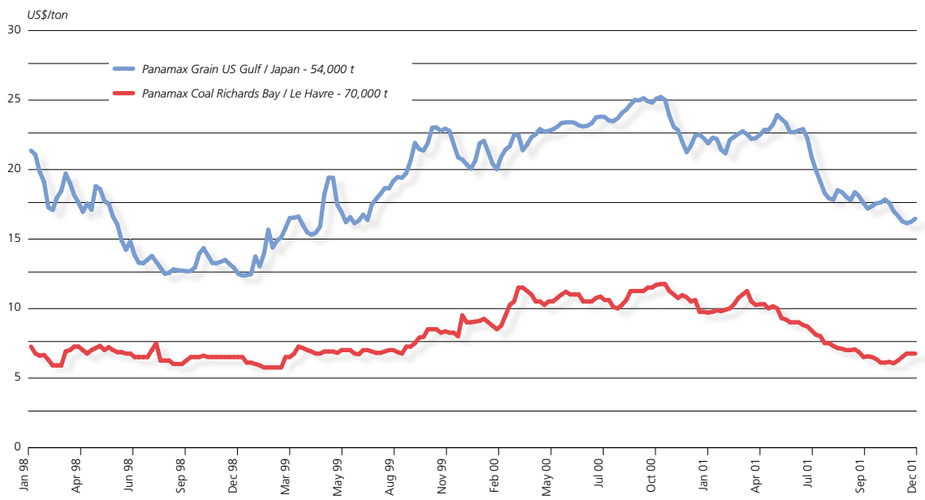
We are therefore seeing a globalisation of the market with a small number of players but with increased influence. At the same time freight has become a commodity like others that one can buy and sell spot and term, giving birth to a new type of operator specialised in Capesize and/or Panamax in certain geographical zones or trades, such as Swiss-Marine or Enron (whose bankruptcy is only a blip in this evolution). The recent period when a contract was wide open, now seems something of the past. Nowadays for each charter, a dozen owners at least

Dry Cargo freight rates - Capesize



Source : Baltic Exchange - BRS

Dry Cargo freight rates - Panamax



Source : Baltic Exchange - BRS

(luckily not always the same) propose variations of a theme. In this respect the growth in the market for buying and selling freight 'futures', provides a host of possibilities for hedging or making other alternative complex coverings.

The nearly instantaneous knowledge of ship's positions, the rapid circulation and the abundance of information paradoxically can complicate getting to the basic essentials. In order to remain in the game, it is now more than ever crucial to be part of the initiated few.

It is true that after an euphoric 2000, 2001 pales in comparison and the facts are there to back this up. However the rationalisation of the market, which began several years ago, has quickly accelerated and only a more positive economic situation will lead to improved freight markets.

The strong players of the future are formed in these times of crisis. Abundant, complex information requires specialists and also favours the development of new tools for its analysis and interpretation, and only the best armed will be able to survive.

The Capesize second-hand market (80,000 dwt and over)

Last year we concluded our analysis by stating that it would be necessary to be prudent in 2001. In practice during the first quarter, the second-hand Capesize market continued to follow its downward trend already begun at the end of 2000.

Values then flattened out between March and April. They rose strongly up to the end of June when they literally collapsed until September, before steadying out at a level well below last year's. One only needs to look at the fluctuations in freight rates to find the reasons for these dramatic variations in prices.

As always the oldest ships were the most affected, whereas modern units tend to gain less in rising periods and lose less in falling ones.

There were some 26 sales for further trading (comprising 16 ships delivered from 1990 to 2001 and 10 built between 1981 and 1989.) Eight ships built between 1969 and 1978 were demolished this year amounting to 1,043,000 dwt, whilst 34 ships were delivered totalling 5,769,000 dwt.

For a fully classified ship and in good condition, the following values were applicable:

		January 2001	December 2001
150,000 dwt	built in 1995	about $26 / 27 m	about $18 / 19 m
150,000 dwt	built in 1990	about $19.5 / 20 m	about $14 / 14.5 m

The consolidation in the market, reinforced by the setting up of the Cape International pool, does not prevent some strong crosswinds from blowing. Even if at year's end it seems to be calmer with a slight rise in the freight rates, the tendency for ship's values are declining as there are big uncertainties within the world's economies.

Construction prices should not rise next year which will have a direct repercussion on values of the most recent ships. In a poor market, it is always preferable to renew one's fleet by a newbuilding rather than by acquiring a modern second-hand ship with immediate availability.

The drop in the yen if it continues its path pursued at the end of the year, should incite Japanese sellers to be more flexible on asking prices for their ships financed locally. Values expressed in dollars should therefore suffer.

It will take a real and solid recovery in freight rates together with a renewed revival in growth prospects for second-hand values to be able to move up substantially. If the hopes are less muted at the end of the year, the reality remains stubbornly subdued even if in a thin market like the Capesize, changes in situations can sometimes be quicker than expected.

A glimmer of hope lies in the current modest orderbook. It represents about 9.3 % of the existing fleet. In 2002 only 25 ships should be delivered by shipbuilding yards for a total capacity of 4.2 million dwt.

The Panamax, Handymax & Handysize second-hand market

At the end of last year, we concluded our review for this segment of the sale & purchase bulk carrier market saying that players in the shipping industry could be "cautiously optimistic" for the near future only if an accelerated demolition activity is re-established coupled with positive industrial production and world trade figures, as this could be the only counter-balance to the massive number of deliveries both in the Panamax and Handymax segments. Let us look at what happened.

While deliveries took place, demolition was very slow to follow. The world economy did not continue with the same vigour, to say the least, Japan still cannot get out of its decade long recession, Far Eastern economies again walking a tightrope, the European Union slowing down and we now have an U.S. economy officially declared as being

Lake Maine
53,500 dwt,
grab-fitted blt 2001
by Imabari Shipbuilding,
owned by Daio Kaiun Ltd
(Japan) and on long time
charter to Louis Dreyfus
Armateurs (France)

in recession since March this year, resulting in decreasing industrial production figures.

The effect of all the above was, as expected, a severe downward pressure on freight rates which, as one would anticipate, put ship values under pressure. Values softened across the board for all types and age segments of the dry bulk carrier market.

The youngest units too, experienced similar downward pressure on their values as the yards started to look for new business and were expected to become more aggressive, trying to secure new orders by offering attractive prices and terms.

All this was already happening when terrorists struck the U.S.A. on September 11th.

The uncertainty and speculation of what the future may bring, has become the number one preoccupation in everybody's mind which, in the shipping industry just as with every economic activity, translates itself into "inaction, do nothing, wait and see".

As one would anticipate, the above mentioned factors had a negative effect in the second-hand sale and purchase activity resulting in a lower number of successful transactions in all sizes. The number of reported sales during 2001, when compared to those for 2000, yield the following:

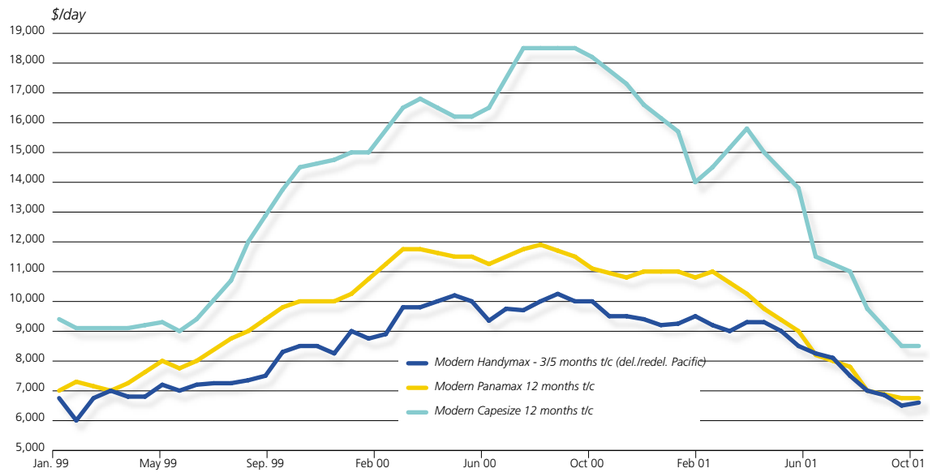
- 26 % less Panamax sales (40 vessels in 2001 against 54 during 2000)
- 31 % less Handymax sales (48 vessels in 2001 against 70 during 2000)
- 23 % less Handy sales (77 vessels against 100 during 2000)

The Greek shipping community still had a leading role amongst buyers this year, although the number of reported bulk carrier sales to Greek buyers was half (59 ships) the one recorded in 2000 (120) and about one third of 1999's figure (158). The much publicised listing of shipowning companies on the Athens Stock Exchange did not happen this year although we understand that the legislation is in place. It may take a while before any company attempts such a listing and definitely not in an exchange, which after having gone through "a very drastic correction" has also been suffering from a long "bear" period.

Chinese buyers made their presence felt this year, by doubling the number of ships purchased, 19 ships as opposed to only nine during 2000. Similarly Norwegian buyers were reported to have purchased 17 vessels versus only seven in 2000.

As 2001 is drawing to an end, second-hand dry bulk carrier values continue their downward trend at a slower pace and many feel that we may be very near the bottom of this cycle. The result is an increase in the willingness of prospective buyers to inspect vessels, that are being offered for sale, even if most are of the opinion that prices may drop somewhat further before they pick up again. An apt example of this is the number of interested parties, 16, who inspected in Argentina (not on the Continent) earlier in December 2001 the 'Panagio-

Average time charter rates for bulk carriers



tis A', a 1995-built 71,500 dwt Panamax bulker. She has been reported sold to Greek buyers, Angelicoussis, for a price in the region of $13.4 million. This is $100,000 more than the reported price for which the 'Maratha Memory', a 1997-built 72,000 dwt vessel, was sold only a week earlier! Is this a "blip"? Could it be the proof that we have indeed reached the bottom? Or, is it just because competition was fierce and not seen since 1999? We do believe that it is a mixture of all the above.

The Japanese yen has weakened further this year and at the end of 2001 has reached a three year low ($1 = yen127) if this trend continues, and according to exchange rate specialists, it may well do so considering the dire state of the Japanese economy, there may be a greater number of vessels being offered for sale from Japanese shipping companies. This together with the fact that prices will be considered as very near the bottom may well "kick start" second-hand sale & purchase activity.

Second-hand sale and purchase activity picks up as soon as there are healthy signs in the freight markets, but apart from world economy, international trade etc. the criterion of supply and demand is forever present in shipping.

The Panamax and Handymax scheduled deliveries for 2002 are at much lower levels (about 9 % and about 11 % of the active fleet respectively) than 12 months ago and the figures for Handysize scheduled deliveries remains very low (about 4 % of the active fleet).

Demolition this year picked up significantly and in terms of dwt removed from the market we note:

◆ Panamax: about 2.2 million dwt were removed this year, 33 ships, representing an increase of about 400 % over the figures for 2000. However, this is only about 3.3 % of the active fleet.

◆ Handymax: about 1.07 million dwt were removed this year, 25 ships, which is about the same figure as for 2000, i.e. no significant change. This is only about 2 % of the active fleet.

◆ Handysize: about 2.5 million dwt were removed this year, 90 ships, which represents an increase of about 32 % over the 2000 figures. This is only about 3 % of the active fleet, but the scheduled deliveries for this size of vessels are only about 4 % of the fleet…

Panamax (55,000 to 75,000 dwt)

A total of 40 ships were reported sold during 2001 and some points worth noting are:

◆ 52.5 % (21 vessels) built in the 90's of which eight were constructed after 1995.

◆ 42.5 % (17) built in the 80's of which two were built in 1988-1989 the rest prior to 1985.

◆ Only two vessels sold in 2001 were built in the 70's representing only 5 % of the sales.

◆ More than half (24 vessels) involved en-bloc purchases ranging from two ships up to five or six vessels.

◆ Some vessels had been reported "sold on subjects" several times during the course of the year, but had subsequently not been lifted and their owners re-marketed them until an eventual firm sale. This was true for younger ships as well as ships over 15 years old.

◆ We noted several en-bloc sales of modern ships (less than five years old) involving long period time charter or bare boat back arrangements with sellers. This would appear to be the only way possible for a ship to be sold, in the view of the uncertainties of the freight markets, large orderbook, etc. One example is the sale of the 'Far Eastern Progress' and the 'Far Eastern Auspice' both of 72,000 dwt and 1996-built, at $15.6 million including a 10 year bare boat charter back to sellers, another one including a long period time charter back is that of 'Pacemperor' and 'Pacmonarch', both 74,000 dwt and 2000-built, sold for $22.0 / 23.0 million including a 12 year time charter back.

◆ Transactions whereby owners were selling their entire Panamax fleet, some included long period employment and others were straight sales. The sale of the Lasco controlled Panamax fleet involved five vessels of which two were built in 1990 and three in 1994, the en bloc transaction included a 10 year bare boat charter back to the sellers and a purchase option. The en bloc charter-free sale of the Docenave Panamax fleet to Elcano of Spain, involved five vessels all 20 years old.

◆ Some deals whereby the buyer would take a fairly modern vessel on bare boat charter with purchase options at predetermined prices during the course of the period and a purchase obligation at an agreed price at the end of the period: the 'Aspen', 'Hawthorn', 'Capella' and 'Polaris' all 1997-built and of 73,000 dwt were sold in pairs to two different buyers, but with the same reported structure, where the buyer takes the vessel on bare boat charter for five years at $5,250 per day with purchase option at the end of years three and four for $12.0 and 11.0 million respectively and a purchase obligation at the end of year five at $9.8 million.

◆ The sale to Actinor Shipping of Norway of the 'Northern Venture' and 'Xinshi Hai' both 1995-built and of 68 000 dwt, for $15.0 million including a 12 year bare boat charter to Cosco and the en bloc sale of the A.P. Moller controlled 'Maersk Taikung', 'Maersk Tanjong' and 'Maersk Tukang' to Spar Shipping of Norway at $13.25 million each including a three year time charter back to the sellers including optional periods are also worth noting.

At the end of 2001 the value of a 10 year old Panamax bulk carrier stands at about $9.0 million, about 20 % less than what it was 12 months ago, whereas a 5 year old vessel of this size is worth about $13.0 / 13.5 million, about 16 / 17 % less than what it was valued at $16.0 / 16.2 million, in December 2000. In short, values have diminished back to their 1999 levels, if not somewhat lower.

Having said this, the reported sale at the end of December of the 'Panagiotis A' (mentioned earlier) would seem to indicate that values are no longer as low as mentioned just above, but this is only one sale. On the other hand, it takes very little (just one sale might prove to be enough…) to change buyers' sentiment into deciding whether "the market has reached the bottom and that now is the time to buy", this could lead to a stampede, like the one experienced in the spring of 1999… To avoid this, our advice "in good faith but without guarantee" would be, if you are potential Panamax bulk carrier buyers, to buy now rather than later.

Handymax (35,000 to 52,000 dwt)

Among a total of 48 ships were reported sold during 2001:

◆ 23 % (11 vessels) built in the 90's of which one was built in 1990 and the rest after 1994.

◆ 54 % (26) built in the 80's of which 10 after 1985.

◆ 23 % (11) built in the 70's.

◆ As opposed to the Panamax sales, few en bloc deals were reported and even fewer involved long period charter back arrangements to the sellers.

◆ Chinese buyers made their presence felt by inspecting and offering on 80's built ships calling to China.

◆ This is the size of vessel that the former principal of Golden Ocean (the VLCC shipping company that was taken over by Frontline) chose to make his comeback in shipowning by purchasing the 'Bara', a 1998-built 42,000 dwt unit, from Louis Dreyfus Armateurs, for a reported price of $14.5 million including a four year time charter back to the sellers.

The value of a 10 year old Handymax bulk carrier 12 months ago was about $ 11.5 million, whereas at the end of 2001 it is estimated at about $8.75 / 9.0 million representing a 20 % drop in value, a five year old vessel of this size currently stands at about $12.5 million, about 19 % less than what it was worth ($15.5 million) in December 2000.

Our feeling is that for this size of ship we are very close to the bottom, however there have not been any recent end-of-the-year sales to indicate a reversal of this downward trend, but this may be just around the corner. So if one is considering investing in a Handymax bulk carrier, one should actively be inspecting such vessels in order to be

Santa Christina
25,378 dwt, blt 1996 by Imabari Shipbuilding, owned by Nissho Shipping (Tokyo) and on long time charter to Le Nickel SLN (Nouméa) Eramet Group

ready to "move" once one feels "the time is right". It will not be too long…

Handysize (18,000 to 35,000 dwt)

A total of 77 vessels were reported sold during 2001:

- 34 % (26 vessels) built in the 70's of which four were built prior to 1976.
- 53 % (41) built in the 80's of which 18 units were built after 1985.
- 13 % (10) built in the 90's, of which half were built in the second half of the decade.
- Two of the 90's built ships sold, involved charterers exercising purchase options.
- Very few en bloc deals were reported during 2001.
- Far Eastern buyers proved to be more active during 2001 than in previous years, Greek buyers too were quite active and these two nationalities were reportedly involved in about 60 % of the total number of sales.

At the end of 2001 we estimate the value of a five year old Handysize bulk carrier at about $10.5 million, whereas 12 months earlier the same type of vessel was worth about $11.75 / 12.0 million. A 10 year old ship in December 2001 is estimated to be worth in the region of $7.0 / 7.25 million, whereas in December 2000 her value was closer to $8.25 / 8.5 million. The drop in value for the five and ten year old categories is about 10.6 % and 12 % respectively. It would seem that the drop was greatly decelerated due to the weak orderbook in this size. Again, the feeling is that values may have reached a bottom…

◆ ◆ ◆

Concluding this year's review of the second hand bulk carrier market, the majority of the Panamax and Handymax deliveries is behind us and prices are at levels similar to those of early 1999. The world economy is experiencing a recession after many years of expansion, but economists are forecasting a recovery in the second half of 2002. The reasons evoked for this recovery include the level of interest rates, which are at record lows, generous financial stimulus in the U.S. (tax cuts, emergency spending following the 11th September attacks…) amounting to about $375 billion and lower oil prices. The recovery may come more rapidly if all the above has a stronger impact. Confidence and sentiment will revive faster than expected.

Next year, we shall look back at what actually happened during 2002, but for the time being we are of the opinion that values have or are about to "bottom out" and therefore any investment in these sizes of bulk carriers should be undertaken sooner rather than later. ■

THE CONTAINERSHIP MARKET IN 2001

After a booming year 2000, the container ship charter market is in the doldrums. The terrorist attacks of 11th September have cast a chill on a market already cold. To make matters worse, liner operators are receiving huge newbuildings, which are currently unwanted.

The charter market has dramatically changed since the summer 2000, when operators swooped down on the rare 3,000 teu ships made available, paying rates of around $25,000. One year later, the rates have fallen by 40 / 50 % for this size. Of course the slowing of the progression in trade (which remains however positive) is to blame. What makes things worse is that it is combined with the delivery of one overpanamax ship every six days on average. In addition, the sudden relea-

Fleet as at 31 December 2001

	Cellular			Box non-cellular		
Size range	nb	teu	2001/2000	nb	teu	2001/2000
> 5,000 teu	164	983,902	66.6 %			
4,000 / 4,999 teu	185	806,887	3.5 %			
3,000 / 3,999 teu	218	785,806	8.1 %			
2,000 / 2,999 teu	478	1,190,478	11.2 %			
1,500 / 1,999 teu	387	651,490	3.9 %	17	30,381	6.5 %
1,000 / 1,499 teu	491	586,629	2.1 %	104	118,738	11.2 %
500 / 999 teu	554	391,983	1.0 %	324	215,248	7.4 %
100 / 499 teu	437	134,951	-0.6 %	1,434	342,883	5.7 %
Total	**2,914**	**5,532,126**	**13.1 %**	**1,879**	**707,250**	**7.2 %**

Source : BRS-Alphaliner

Cellular Ships : Deliveries / Orders - Year 2001

	Deliveries			Orders		
Size range	nb	teu	$ M	nb	teu	$ M
> 5,000 teu	60	362,373	3,758	32	202,308	2,174
4,000 / 4,999 teu	15	63,809	636	25	108,290	1,184
3,000 / 3,999 teu	10	35,201	386	19	62,690	702
2,000 / 2,999 teu	45	112,483	1,376	28	70,702	896
1,500 / 1,999 teu	25	41,530	607	18	30,310	361
1,000 / 1,499 teu	20	21,873	367	14	15,621	249
500 / 999 teu	15	10,983	n/a	34	27,136	n/a
350 / 499 teu	2	918	n/a	–	–	n/a
Total	**192**	**649,170**	**7,130**	**170**	**517,057**	**5,566**

Source : BRS-Alphaliner

se in May of several 3,000 teu Choyang ships onto the market has resulted in a glut in this segment.

Ships are running under their capacity. Charter rates have plummeted, as well as box rates. Capacity cuts and even lay-ups have been proposed. The shifting of ships to North-South trades through domino effect is also seen as a way of absorbing East-West capacity, although a tricky one. For example, ships of 3,000 to 4,000 teu found their way on the already congested Europe-Middle East-India trade, depressing the rates further on this route.

In what is qualified a "synchronised sinking" of economies, the world industrial production has shrunk. In South East Asia, emerging economies are linked more than ever before to the US economy, especially in the field of technology goods. They became over-dependent on exports to recover from the 1997 crisis, the consequence of a weak domestic demand. There are however exceptions: China and India perform better than their neighbours.

What matters for liner operators are the trade figures. In the first half of 2001, the U.S. imports have decreased by 12.5 % on an annual basis while the Taiwan, Japan or Singapore exports fell by 25 %. The number of ships idle (spot) rose strongly in the 1,000 to 2,500 teu range during the first half of 2001. In the second half of the year, several ships of 2,500 to 4,000 teu were left idle at the end of their charter. And when these large ships find employment, it is at depressed rates. Conversely, smaller ships of 500 to 1,200 teu have remained in strong demand for feeder or short-sea and mid-sea trades. Their rates have decreased, but they have not plunged.

Quite remarkably, the difference in charter rates between small and large ships has shrunk considerably, as already seen in previous depressions. At the end of 2001, ships of 500 teu got $4,500 per day, while ships of 3,000 / 3,500 teu could not expect more than $10,000.

The capacity monitoring schemes implemented in the fourth quarter on the Europe-Far East and on the Transpacific trades led to more pain. Many operators are embarrassed by the large ships they received throughout the year. These schemes made it possible to trim the East-West capacity in an unprecedented way in the containership era.

One thing is clear: owners of vessels dedicated to the charter market support the brunt of the capacity cuts. Not only do they see some of their ships idle at the end of their charters (especially the large ones), but they have suffered from a dramatic fall in charter rates. Charter rates for large ships have halved since their peak of the Summer 2000.

All is not negative however. The downfall in box rates has its positive side as lower rates allow the carriage in containers of low priced commodities, or neo-bulk cargoes commonly carried on cargo vessels or bulk carriers. The drawback is that these cargoes are mainly heavy ones, but huge quantities of bagged rice, some steel products such as small pipes or steel wire, aluminium coils, forest products… can also be containerised. Seeing that some of these cargoes are currently carried by over-aged cargo vessels, which are to disappear in the coming two years or so with the 2002 enforcement of the International Safety Management (ISM) code for general cargo vessels, we believe that there is a card to play for containerships. Once in the box, such cargoes could be retained by containership operators, as far as rates remain attractive enough. Very Large Container Ships (VLCS) would help to capture these cargoes in case of a market recovery, although if rates are really booming it would make sense to cast longing glances at more rewarding cargoes.

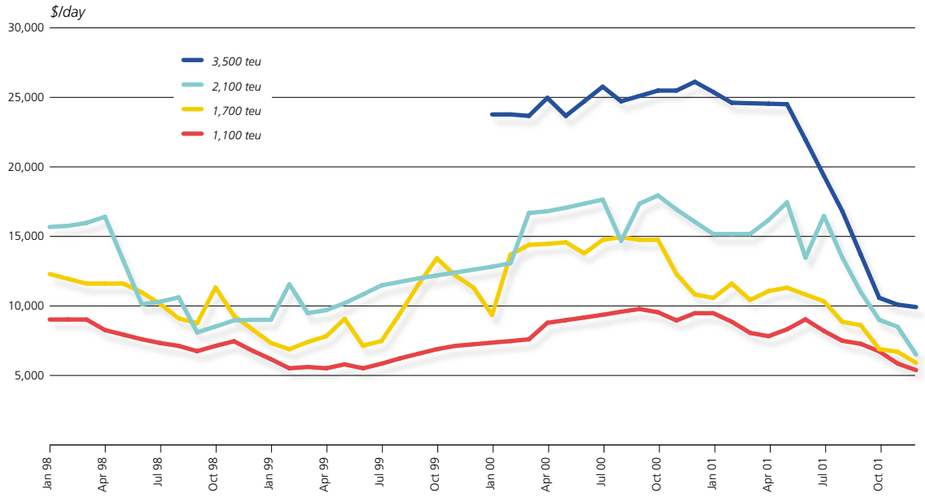
CMA CGM Berlioz
6,477 teu,
blt 2001 by Hanjin,
operated by CMA CGM

It should not be forgotten that in the medium-term, the new capacity now coming on the market will be absorbed. Orders will have to flow again. Recent history has shown that seaborne container transportation has always grown more quickly than international trade as a whole. However, there is comparatively less growth expected than in the past, when a lot of break-bulk trades had yet to be containerised. International trade itself grew at twice the growth rate of the world economy in the past two decades. Assuming an annual growth of 7 % in container trades, the fleet needed in 2010 will be twice as big as the 2000 one. Nevertheless, it remains to be proved whether this rule of thumb is to be repeated in the future.

The operators

The liner shipping industry is not as concentrated as other industrial sectors. It is scattered among

Containerships time charter rates - evolution 1998-2001



Evolution of the fleet 1992 - 2002

	Cellular			Box non-cellular		
Year	nb	teu	progr.	nb	teu	progr.
1992	1,424	2,010,644		891	285,916	
1993	1,520	2,207,466	9.8 %	966	315,529	10.4 %
1994	1,621	2,384,709	8.0 %	1,031	333,697	5.8 %
1995	1,765	2,643,221	10.8 %	1,115	362,399	8.6 %
1996	1,937	2,969,032	12.3 %	1,198	385,059	6.3 %
1997	2,130	3,345,285	12.7 %	1,309	424,505	10.2 %
1998	2,359	3,847,991	15.0 %	1,413	463,420	9.2 %
1999	2,535	4,258,281	10.7 %	1,546	542,197	17.0 %
2000	2,625	4,475,628	5.1 %	1,649	598,795	10.4 %
2001	2,755	4,892,759	9.3 %	1,776	659,997	10.2 %
2002	2,915	5,532,788	13.1 %	1,879	707,250	7.2 %

Figures are given at 1st Januaries of each year. *Source : BRS-Alphaliner*

some 300 operating groups employing 4,650 ships deployed on liner trades worldwide and representing 6.3 million teu in December 2001, of which 150,000 teu were inactive as a result of the market slow-down, according to BRS-Alphaliner data. Nineteen of them are involved in the East-West trades (Transatlantic, Transpacific, Asia-Europe). The largest of them, Maersk-SeaLand operates a capacity of 725,000 teu, representing 11.8 % of the global active capacity in teu terms. The next in size is P&O Nedlloyd, with 6.2 % of the global capacity.

There have been only minor transactions since the buying of Norasia Lines by CSAV in June 2000. The most significant one has been the takeover of ACL by Grimaldi. Other small transactions took place, such as the last bits of Harrison going to P&O-Nedlloyd, the buying of Fred Olsen Canary service by OPDR and the buying of the Kent Line container business by Tropical Shipping.

Now that the pressure is on, mergers and acquisitions will surely be given a new impetus. The gloom has already claimed its first large victim as Choyang collapsed. After a meteoric rise, China Shipping -once a prominent player on the charter market- has paused. The floating of C.P. Ships and the proposed one for P&O-Nedlloyd, transform these operators into targets for some of the major players, who could then turn into "super mega carriers".

CMA-CGM was one of the most aggressive operators in 2001, with the launching of several services, especially to South America and Africa. The company also took delivery in 2001 of the bulk of its newbuilding program, which includes among others a series of eight 6,700 teu ships, replacing 4,000 teu ones on the Asia-Europe route.

In order to fill them, CMA-CGM followed a clever strategy of concluding agreements with possible competitors, inviting them to buy slots on its ships, without binding itself into rigid and more or less global agreements. Not only is this solution satisfying for the company, but it also appears as a boon to operators which do not have the volume to justify deploying their own ships. Contship and Lykes have entered the Asia-Europe trade this way. Furthermore, they benefit from economies of scale allowed by very large ships.

The fleet

The cellular fleet has doubled during the past seven years, in teu terms. At 31 December 2001, there were 2,914 cellular ships over 100 teu, aggregating 5.53 million teu, while the orderbook reached 436 ships for 1.45 million teu, down from a peak of 1.65 million teu in early 2001. At 31 December 2001, there were 164 ships over 5,000 teu in service, and a further 95 on order. The largest ships in service remain the 15 'Sovereign' class series vessels of Maersk-SeaLand, the capacity of which stands at around 8,000 teu.

The good news is that new orders have waned. In the second half of 2001, only four ships of 5,000 teu and over have been ordered. However, after 665,000 teu delivered in 2001, there are still 740,000 teu due for delivery in 2002 and 450,000 teu in 2003.

As for cellular ships deleted from the commercial scene (either broken up or converted to military or other use), their capacity aggregates around 45,000 teu in 2001. This represents a small fraction of the 665,000 teu delivered this same year.

The advent of the ULCS: inroads into the future

Plans to order container-ships of 9,000 teu and over have been put on hold, but the current gloom will have an end as international trade will continue to grow. With this in view, ULCS (Ultra Large Container Ship of 12,000 to 14,000 teu) is a viable option, at least for the largest carriers.

It would not be surprising to see the first of such ships sailing by the middle of the decade. Maersk-SeaLand is the best placed in the race for the coming two or three years: most of its key hubs will be fitted with eight or nine 22-row cranes, able to serve 55 or 56 metres-wide ships, with lengths which could reach 410 m to remain compatible with stability requirements (i.e. ships of 14,000 teu).

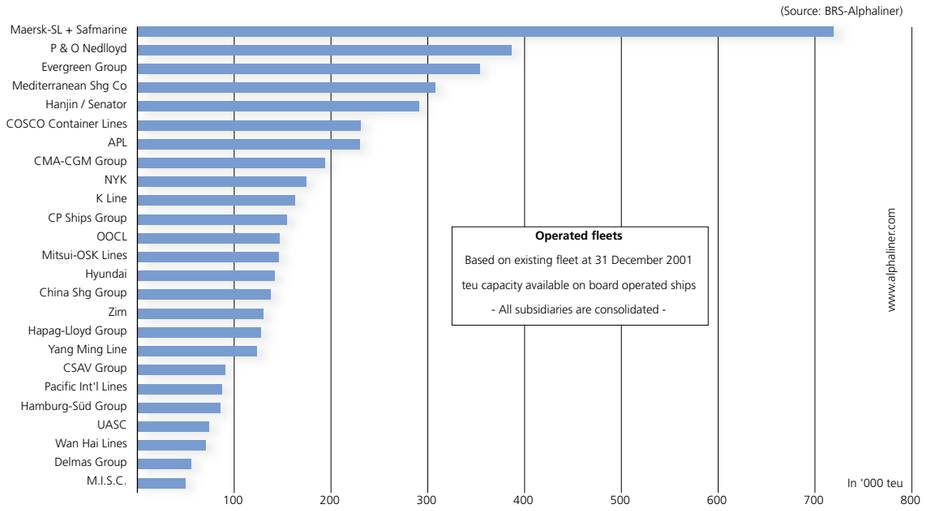
There is a consensus which has emerged, saying that the 9,000 teu ship, and more surely the 12,000+ teu ship, is a perilous adventure. For the 18-row 9,000 teu ships, there are already plenty of terminals which can handle them. They are in fact not much bigger than Maersk-SeaLand's 'S' class (with an estimated real intake of 7,960 teu at six tiers on deck). The main problem is to fill them on a high volume route, while keeping other options on parallel routes in order to offer a sufficient number of direct links and, hence, competitive transit times between a number of ports.

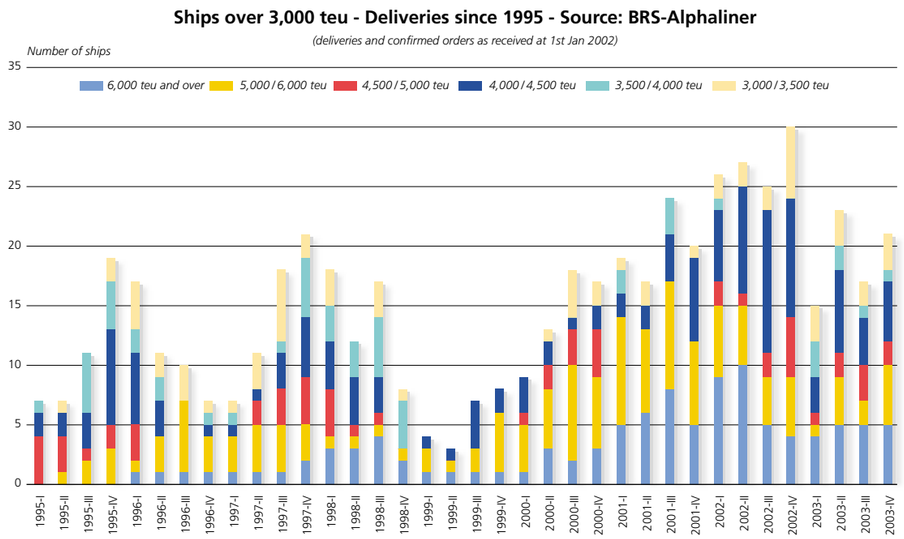
Mare Phoenicium
(ex-EMS Bridge) 4,038 teu, btl 1999 by Hyundai, owned by Hansa Mare Reederei GmbH & Co., under her previous name, now chartered by CMA-CGM for their MedTPX service

Surely it is a perilous affair for the 12,000 teu ship (and even for smaller ships of 22 row breadth), as these ships will rely solely on a given route because so few ports will be adequately equipped to handle them, at least in the beginning. Such an argument is nothing new. In the late 60's, it was often said that containerisation would remain an East-West affair for the very same reasons. The conservative companies specialising in North-South trades at that time and sticking to this idea are no longer there.

Given the volumes concerned on routes such as Asia-Europe or Transpacific, individual operators

Liner operators "Top 25" - at 31 December 2001





would find it difficult to venture into this kind of project (Maersk-SeaLand set aside). A grouping of lines within a tight consortium would be needed in order to share the financial burden and ensure the viable long-term operation of high volume strings with ULCS (and not a mere technical "alliance", which is no more than a slot swapping arrangement).

Such a concept sends us back 30 or 35 years, when rival operators had to regroup in what were then called "integrated consortiums" in order to replace armadas of general cargo vessels with a handful of large, costly containerships on key routes. In such consortiums, day to day receipts and expenses were fully pooled, with a joint managing entity.

Alas, such consortiums are today outdated and the pioneers such as Trio or ScanDutch are now history. In a world where things are prone to change overnight, tight agreements are not the recommended way. Only a new wave of mergers and acquisitions could make the ULCS option a reality in the medium-term.

High volumes carried on inter hub "container pipe-lines" justify the advent of ULCS. Such pipelines will come on top of parallel direct services, including shuttles linking two or three ports. They complement container pipe-lines between key regional ports, on the East-West traditional routes as well as the North-South ones.

After all, the pattern of North-South routes has become the same as on East-West routes, only the average size of ships makes the difference. Whatever the cargo and the route are, the transport units are the same: 20 and 40-feet boxes (put aside specialist equipment such as reefers), and they are handled by the same standardised terminals. The accompanying tariff-making process is made easier by the expansion of the "Freight All Kinds" approach.

Such an evolution will also lead to the "commoditisation" (a neologism) of container transport. In other terms, the transport of a container from point A to point B (including inland destinations) could be traded as a commodity, thus clearing the ground for the setting up of a futures market, with shippers hedging against variations of box rates. In such a world, the carrier with the lowest cost regarding other logistics input, such as transit times and reliability of service, will win the game.

VLCS and ULCS will surely play their role in this equation. Yield management, i.e. the best possible use of the available capacity (as already applied in the passenger airline industry), will also continue to develop. With all this in mind and with very large ships coming, allowing economies of scale as yet unseen, there is little doubt that the nature of the competition is to change in the current decade. ■

THE RO-RO MARKET IN 2001

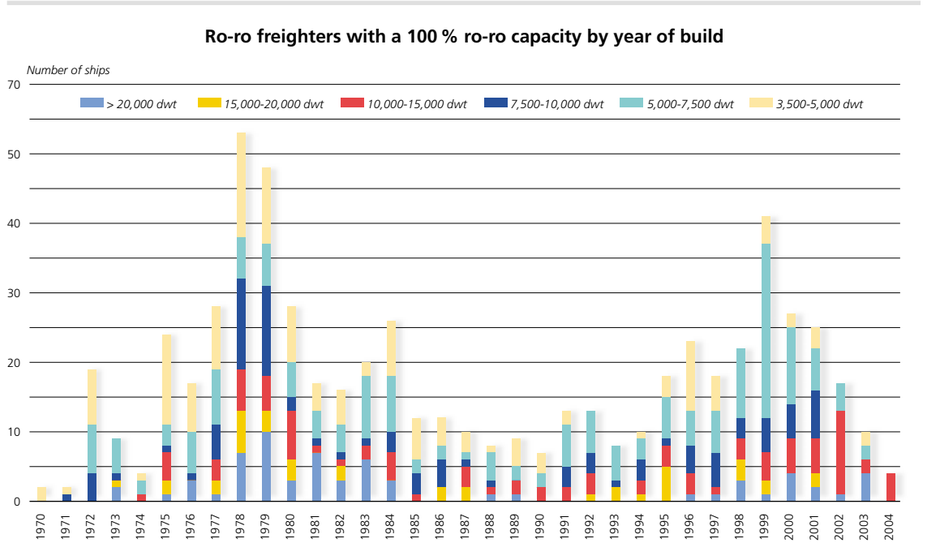
The noose tightens...

The concept of a ro-ro ship is a commitment to a somewhat unconventional flexibility in the shipping world, as much by the autonomy it offers in ports with difficult access, as by the diversity of cargoes that can be handled in ports non or badly equipped with shore-cranes. While simple and dependable, it seems important to remember that the ro-ro is also irreplaceable on certain routes. Clearly the development of port infrastructures for containerships, handling methods or storage capacities have a direct effect on ro-ro traffic, but there is still a lot to be done before a massive substitution of one system over the other can be envisaged.

In terms of comparable units, the capital costs for transporting a 40-foot container by containership are a lot less than the same movement of a trailer on a ro-ro vessel. The transport cost argument of course weighs heavily for shippers in their logistical choices and economic pros and cons, but it is not the only item to be taken into consideration. Others factors count such as handling speed and above all the continuity in the transport chain by land in the shortest time.

If all these constraints prevail on a short or medium haul routes, then the ro-ro takes precedence over the container. Nonetheless it is a case of "David and Goliath". As we have frequently pointed out, although the container has got the lion's share of certain long-haul ro-ro routes, both means of transport can and should exist together in various parts of the world. We however do not imagine that the ro-ro fleet will double in the next ten years, as we have seen that has happened in the containership sector.

On the other hand, we have witnessed a rejuvenation of the fleet, which while not producing a sizeable increase in capacity, has had the merit of allowing operators a better quality of service. The analysis of the ro-ro fleet remains a complicated affair given the diversity of ship types, since the evolution of the ro-pax concept lends itself in prac-



tice to producing ships which have more affinity to ferries than pure ro-ros. Few new orders have been recorded in 2001, and deliveries have also been considerably reduced in 2001 compared to the past three years. Although the freight market has the same profile as last year's in terms of volume, time charter rates have been globally reduced.

The ro-ro market and geo-politics

The subject would deserve an analysis on its own as there has been such an intense activity throughout the year on movements of military material, either for interventionist reasons or simply for training purposes. The dramatic events of September 11th in the U.S. and the intervention of the international community in Afghanistan did not however produce the same repercussions as the Gulf War did ten years ago.

The different military organisations have become much better structured and did not panic when it came to transporting troops and material this time. The American Military Sealift Command drew from its experiences in the past and only resorted to the spot market occasionally to cover its needs, without causing any particular waves or price hikes. The U.S. and the U.K. are definitely the two countries with the best-integrated fleets and best-fitted to meet their transport needs. There are in practice the only two countries with an operating service mechanism capable of making arbitrages between ships on long-term charter, owned vessels and spot charters.

Of course other European countries have shown themselves to be interventionists as well, but have not yet taken the necessary steps to be able to enforce this policy in the long-term. This waiting attitude adopted by military organisations has some perverse effects on the market. First of all, a number of very old ships, which have been financially written-off for a long time, win a lot of these tenders without their owners being able to find steady employment for them over the year as a whole. It gives the military the benefit of covering their transport needs at competitive costs, but with little anticipation for the medium or long-term. This attitude may become difficult to manage sooner or later.

In practice there are still a lot of ships in service built in the middle and at the end of the 70's. Although it is possible to charter and buy these second-hand ships cheap today, the effect of a fairly massive scrapping would soon be felt in terms of transport supply and also immediately in prices. Owners of more modern ships, built in the 80's and early 90's could then hope for a second breath, as they are amongst those suffering most from the current very low freight rates and lack of employment. The running costs of meeting such low utilisation and the poor returns of period business have pushed some owners into laying-up, often unable to compete with older ships in the spot "military" market.

As frequently the case, it is impossible to generalise about this market and the specific character of each ship makes them almost individual special cases - with one or two additional knots, a car deck, a straight or quarter ramp, etc. – matters which differentiate one from the other and can make or break a deal. All these are items which potential buyers of second-hand vessels will have to take into consideration in their choice.

Profession: tramp owner...

The predominant tendency over the last few years, which has led the majority of large operators to own their ships rather than charter-in has not reversed, on the contrary. The initiatives of owners, which have ordered newbuildings to "play the market" have proven to be highly dangerous.

Armada has reduced their assets over the last years to simply ensure a continuous employment of their ships, and it does not seem that they are in an expansionist mood.

Stena, who several years ago threw themselves into a phase of renewing their fleet in an inspired manner, have the big advantage of working with a "safety-net", capable of operating an arbitrage on their own lines if ordered vessels should find themselves without tramping employment. Nonetheless Stena still have to absorb three more ships of 3,000 lane metres in the year 2002.

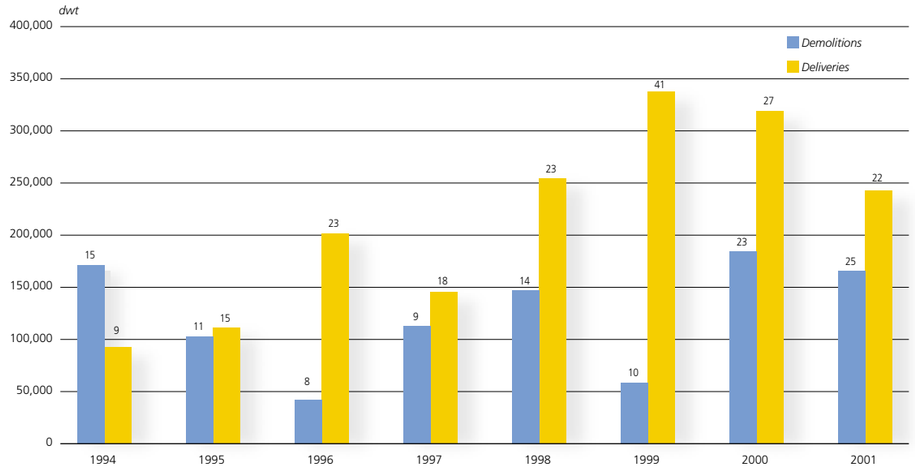
The owner Visentini remains today an isolated case of really gambling on the future, building his ships in his own yard and with his own designs but with undeniable success. This unique example is worth citing for its visionary aspect, and in parallel with a policy of renewing the smallest and oldest ships, finding success with sales to Stena as well as the Turkish Ege Roro, for example.

Other owners like Ernst Russ are paying the cost of the very reduced activity on the spot market. Already owners of four ships of 1,650 lane metres backed with period charters, they have received at the beginning of the year a unit of 2,500 lane metres 22.5 knots, which saw its initial employment in the Atlantic prematurely terminated in the autumn, leaving this splendid ship on the shelf in a capricious market.

It will be interesting to see how the sector of the market of fast 2,500-3,000 lane metre ships will evolve in the course of 2002. There is a fragile balance and the market got tossed about during the second half of the year due to the introduction of three ships from Ege Roro (2,500 lane metres). One of them finally found a home with Cotunav. Certain niche services, which operate with ships of 1,800-2,000 lane metres, could benefit in 2002 from a possible swap of the bigger sizes of 2,400-3,000 lane metres to allow them to increase their transport capacity at reasonable costs. Maybe we will see a new class of routes coming into service and finally shedding in compensation to congested roads. Will the recent accidents that have hit the trans-Alpine road tunnels lead to new policies favouring short-sea shipping? We very much

CR Tanger
9,332 dwt,
1,900 lane metres, blt 1978,
sold by Delmas (France)
to Pasifae Shipping Company
(Greece)

Ro-ro vessels demolitions vs deliveries since 1994



doubt it, as history tends to have a shorter and shorter memory, and we would rather bet on the well-conceived private initiatives, which should finish being crowned with success sooner or later.

Having found shelter in different business management structures or having been sold, a good number of ships built for Russian operators continue to liven up the market with varying fortune, but with a preponderance for the largest ships to find period employment on long-haul routes. Egon Oldendorff operating through a Norwegian commercial management structure (Atlantica Shipping) already got his way into the closed circle of tramp owners and seems set to enlarge his presence in this market, on condition to define and target precisely the type of ship to focus on, which while remaining risky could prove profitable.

Tomorrow...

Given the age profile of the fleet, and the ever-approaching deadline of demolition of the oldest ships, we believe that this is a propitious time to invest in good quality ships of not more than 15 years at a reasonable price. Assuming that the life span of these is realistically about 25 years, it is possible that this choice over the medium term should be positive.

On long-haul routes, the charter market has been particularly quiet. The decline in the chartering activity is in this instance also linked to the number of new ships, which have gradually replaced tramp ships, despite the level of new deliveries in 2001 being below that of the preceding two years. Grimaldi has remained the most active player in the pure ro-ro sector (as opposed to the ships of PCC and PCTC). Elsewhere, Delmas, who is in partnership with Grimaldi on the Mediterranean / West African Coast trade, has undertaken an external growth transaction at the end of the year, taking control of their common partner Setramar. Earlier in the year we had the case of Grimaldi taking control of Atlantic Container Line, a good example if needed of the interaction between ro-ros and containers. We can also mention that at the end of the year DFDS, emblematic actor in the ro-ro market took majority control of Lys line, a Norwegian operator of containerships.

Facing a difficult horizon for numerous owners in the container transport market (at least until end 2002), it is not impossible that we will see several "forced mergers" between niche market operators in this sector with the biggest ro-ro operators.

Finally and unless there is an important volume of new orders in the next two years, the ratio of deliveries to demolitions should naturally get inverted, which could signal the beginning of a new tendency in the market.

To be continued… ■

THE REEFERSHIP MARKET IN 2001

Signs of improvement without real conviction

Despite the end of the year 2000 being extremely active, the beginning of 2001 was strangely calm and the start of the high season was delayed to early March.

Some sixty ships were brought out of lay up too early at the start of the year whereas demand mainly from Chile and Equador was not strong enough to be able to absorb such a sudden supply of tonnage.

Spot rates remained depressed until the end of February with the market falling victim to poor weather conditions in Central America and Argentina. In early March the combined demand of the southern hemisphere fruit exporters pushed up the market, but without ever going over 90 to 95 cents for modern ships of 500,000 cu ft and having good container capacity on deck.

The dollar's strength relative to the euro helped Chilean fruit exporters into the United States, but with the ships' rotation being much shorter, the reduced exports to Europe had a negative effect in terms of tonnes-miles and the number of ships chartered.

Generally owners experienced a high season comparable to the previous year, while the period from May to the end of the year was far better in 2001 and more promising for 2002.

As from mid-June more than 80 ships were laid up and some ten were sold to scrap. Russia now plays an ever increasing role in the spot market, as it not only regularly imports bananas but also a number of other fruit from the southern hemisphere throughout the year (nearly 1.5 million tons of apples, pears, and citrus fruit).

We have seen again this year that the spread in rates between the high and low seasons is tending to narrow and that container utilisation during the high season is able to cover peak demand without having to go onto the spot market too often.

In the standard palletised ship's size of 380,000 / 420,000 cu ft, the Canary contracts were signed in July for time charter periods from November to early May between 70 and 76 cents, namely 5 % more on average than the previous season (a total of eight ships).

Owners, who did not lay-up their ships too early, were often able to fix them in the summer at better rates than in the autumn. Time charter rates reported for conventional palletised ships of 450,000 / 500,000 cu ft averaged 32.5 cents in June, 23.5 in August and September, to fall to 19.5 cents in October before rising to 35 cents in November.

July and August which are historically the most difficult months for owners saw a healthy activity thanks to the export of citrus fruit from South Africa and South America towards Europe and Asia, on one hand, and a recovery of banana prices in the U.S. and Europe on the other.

In the last quarter the most noteworthy improvement was seen for small sizes at the start of the citrus season from Morocco to Scandinavia, Russia, and the northern Continent. Rates jumped from 45 cents for palletised ships of 2,000 / 2,200 pallets to more than 70 cents in few weeks. This was partly due to the fact that Moroccan owners decided not to reactivate their old ships but to put them up for sale and also to work the citrus cargoes on a spot basis.

As to the needs of the Major banana producers we have seen again that chartering decisions to cover their 2002 contracts were taken late in the day and especially that the number of ships chartered for a 12 month period is declining. Only some 15 ships of about 500,000 cu ft, 21 knots, 100 feus, fitted with 36 / 40 tons cranes, were chartered at about 63 / 65 cents for the more modern ones and 55 / 57 for ships of over 10 years, which corresponds to an increase of about 5 % compared to last year.

Significant events

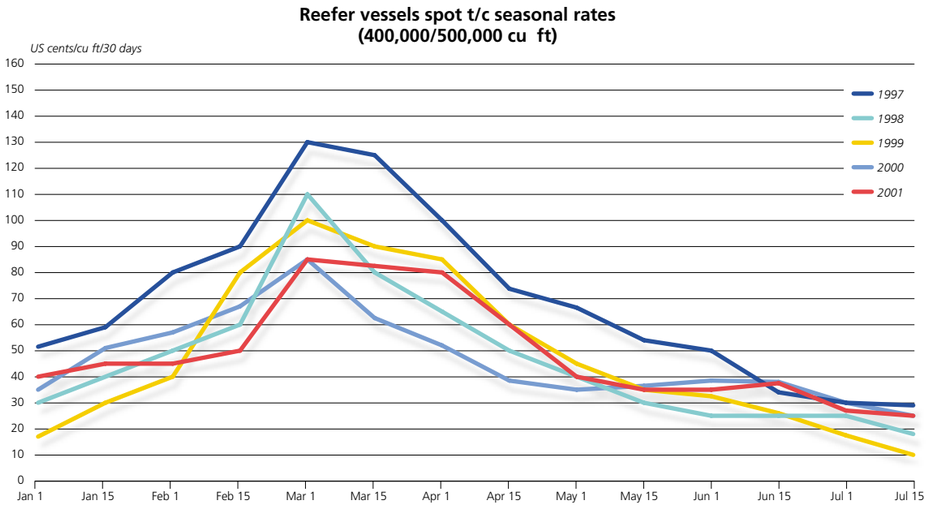
Owners consolidation

After the takeover of Cool Carriers by Lauritzen and the setting-up of Lauritzen-Cool end 2000, Swan Reefers bought Star Reefers as a first step, and then joined forces with NYK to form a new pool NYK-Star Reefers, which controls 72 ships between 393,000 and 670,000 cu ft.

Hamburg-Süd who had been a partner in Star Reefers left the pool and four of their eight ships went to join the Leonina pool of Lauritzen-Cool, while the remaining four stayed on with NYK-Star for another year.

The Dutch owner Vroon b.v. with 10 ships joined the Sun Group and three other owners, to form the United Reefers pool and has shown an interest in the Amer Shipping fleet (a member of the Leonina pool) which was put under court order in mid-March in the U.S. Vroon is trying to take control by buying a majority share with an American investment fund. United Reefers regroups five owners and controls a fleet of 24 ships of 185,000 to 535,000 cu ft.

Wild Heather
499,793 cu ft, 58 feu, 58 plugs, 20 kn, 10,144 dwt, blt in 1998 by Iwagi Zosen, operated by NYK-Star Reefers



Seatrade and Nissui Shipping have joined together in the Pacific for small size ships, creating Tokyo Reefer chartering, a mini pool which controls 15 ships.

In May a new Japanese company, Fresh Carriers Company (FCC) took over the management of Nissui's big ships chartered to Dole and on other fruit contracts.

We should also mention the start-up of a new container service Australia / New Zealand to West and East Coast U.S. by Maersk-Sealand. One of the first clients of this new service was the NZ Dairy Board who represents on its own 360,000 tons for U.S. destination.

Fruit producing countries

With effect from October 1st 2001 in New Zealand, Enza no longer had the monopoly of apple transport and exports and thus had to face other organisations which have stepped forward. Exports of kiwis from the southern hemisphere have remained stable (about 92 million trays), with an increase in Chilean production compensating for the drop in New Zealand's. This fruit is facing increased competition from southern Europe producers like Italy and France who now supply their own markets.

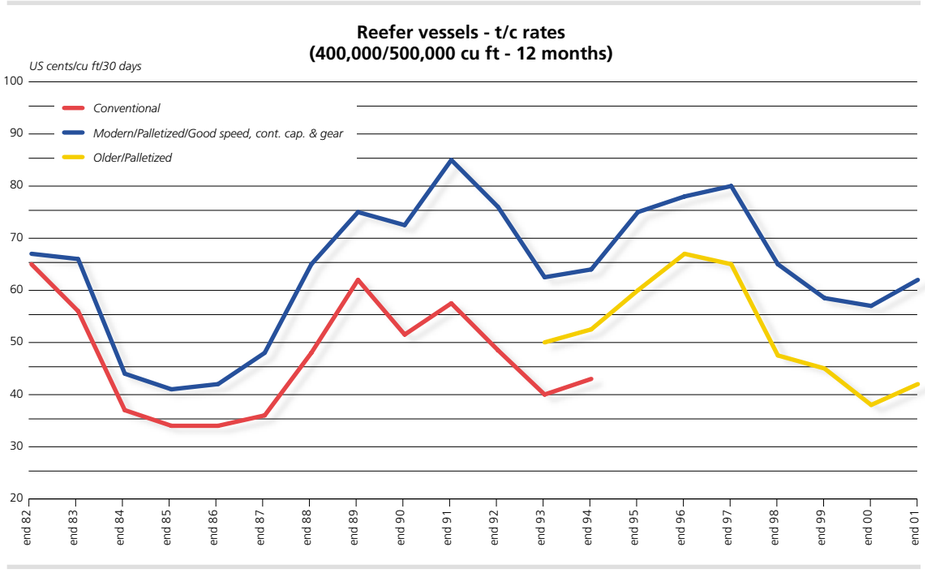
An agreement to finally end the banana dispute was reached in April between OMC and the EU. New regulations should come into force from December 31 2001, to allow the U.S. to lift their sanctions. In the first stage the system of import licences will continue up until 2006 and will be calculated on the basis of historical data with a reference period of 1994 to 1996 which should favour a group like Chiquita much more than Dole or Fyffes. The quota for the ACP countries will be reduced by 100,000 tons, which Europe will import from Ecuador or Central America with 83 % of licences being allocated to traditional importers. With effect from 2006 imports of bananas will be based on tariffs according to the country of origin.

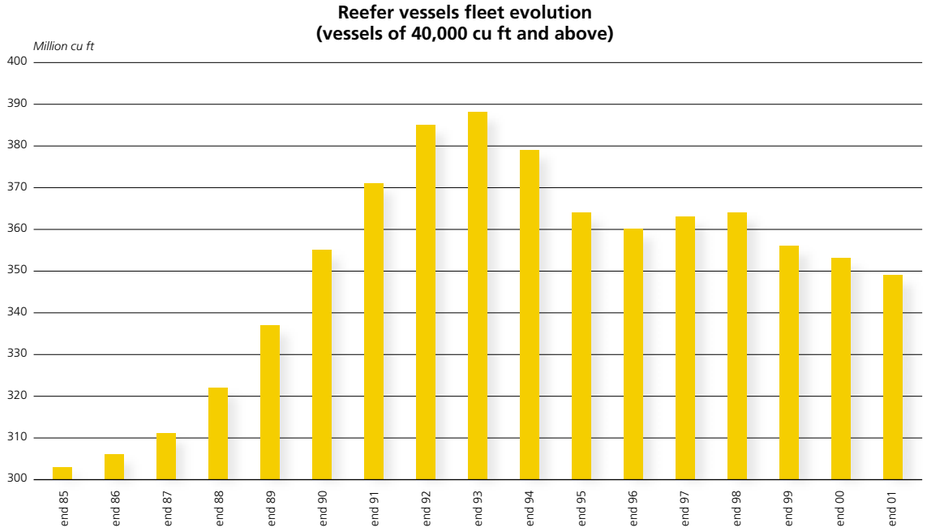
At the end of August after a week of intense conflict, the strike of Ecuadorian banana producers ended with the creation of a fund guaranteeing a production price.

The production of Argentinean apples and pears exceeded two million tons of which 488,000 tons were exported, and citrus fruit production reached 2.63 million tons. Export levels have increased towards Europe and Russia, and the U.S. has re-opened its market to citrus fruit.

Banana production in Honduras has regained its exports volumes before hurricane Mitch.

A significant reduction in banana's produced in Costa Rica and Equador was felt at the beginning of the year due to climatic conditions, which





meant that finally the price levels improved in the North American and European markets, after a long crisis period due essentially to an overproduction rather than a drop in demand.

In Morocco following a long dry spell, exports of citrus fruit and potatoes were some 30 % lower or roughly 360,000 tons.

The Spanish clementine campaign into the United-States was highly satisfactory (some 80,000 tons from November to February). However this year the campaign came to a sudden halt in December with the discovery of a dead fly in a cardboard box (with some 35,000 pallets in transit and on board ships in mid-December 2001).

In South Africa, citrus fruit production was about 1.5 million tons of which 800,000 tons exported mainly to Europe. The rand devaluation help stimulate exports, which also took advantage of the drop in Spanish production.

Apple harvests in Italy and France suffered a 10 % drop after the spring frosts and some 20 % in the state of Washington (USA).

The fleet

The world reefer fleet has reduced further this year. As of December 31st 2001, it comprised 1,237 ships over 40,000 cu ft, with a total capacity of about 349 million cu ft, namely a drop of 0.96 % in the number of ships, and 1.13 % in capacity compared to December 31st 2000.

Deliveries of newbuildings has again dropped considerably; four ships with about 1.3 million cu ft were delivered in 2001, against 13 with about 6.3 million cubic feet in 2000. They are the lowest figures seen since 1959.

Only three new units will be delivered in 2002, representing a total capacity of some 1.2 million cu ft.

It is surprising to find that despite the market weakness, the pace of ships being withdrawn (scrapped or for other reasons like total loss or conversion) has noticeably slowed down in number with only 16 ships being demolished (as against 27 in 2000), which goes against logic. In terms of capacity the volume dropped in the same proportional order, with the 16 ships totalling 5.3 million cu ft (compared to 9.5 million cu ft in 2000).

The figures given above are based on the refrigerated capacity in the reefer ship's hold. They should be interpreted by taking into account the increased capacity of refrigerated containers on delivered new units, both on reefer ships as well as containerships.

In practice we have seen in 2001 an increase of about 134 million cu ft in global refrigerated capacity, equal to nearly a third of the total capacity of refrigerated fleet.

Theoretically, the orderbook of containerships makes it possible to envisage the delivery into the market in 2002 of some 153 million cu ft containerised refrigerated capacity.

Conclusion and outlook

At the risk of repeating ourselves year after year, the same causes (the competition with containers and a surplus capacity) produce the same effects, and there is little chance of seeing the market recover in the short term.

The majority of analysts are in agreement that for any hope of a lasting improvement in the reefer market a roughly hundred ships of over 300,000 cu ft should be scrapped. At the start of 2002, 35 ships of over 300,000 cu ft will be between 25 and 29 years old and 21 ships will be over 30 years, representing a total of 56 ships and in volume about 10 % of the fleet of over 300,000 cubic feet, out of 505 ships in total in this segment.

The reversal in the containership market which reached historic lows at the end of the year 2001 for most sizes, further aggravates the competition within the perishable goods traffic. Aware of this risk, the large operators of reefers are developing regular parcel services and are getting established in places like South Africa, South America and New Zealand where the various export groups are more dispersed.

Even if transport by container is an operation requiring considerable investment and requires on average a minimum of three sets of refrigerated containers units to assure a regular service, it is disturbing to see coming onto the market this year 200 new containerships with a theoretical capacity of 80,700 reefer plugs compared to 144 ships with 47,000 plugs delivered in 2000.

Today we can see that orders for refrigerated ships are virtually nil, as the return on investment in this market over the last five years has been minimal if anything at all. Owners have reacted by reducing their overheads and in laying-up their ships for part of the year, but often at the cost of good regular maintenance.

However nothing can replace in terms of quality of transport the specialised ships of the last generation which offer unbeatable transit-times, the possibilities of additional spaces for containers on deck, and a great operating flexibility.

No doubt the big container operators will try to increase their share of the market in sectors where product can be conditioned and packaged in small quantities, but the traditional owners of reefers should be able to compete on base products transported in big volumes such as bananas and other everyday fruits. However, in order to meet this challenge, the market should give them the means. ■

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THE FISHING VESSEL MARKET IN 2001

Tuna fish : what future ?

France and her overseas territories have accumulated an impressive "savoir faire" and a fishing fleet of 35 refrigerated tuna seiners, which places it as number seven after Spain, Taiwan, the U.S., Mexico and in the same group as Venezuela and Equator and tied with Japan.

The technological developments have allowed the fleet to be totally adapted to the needs of fishing, namely to track down by satellite (using thermal detection) favourable areas where banks of tuna are concentrated, but also Argos beacons, undetectable by competitors' ship radar, which give the position of artificial wrecks supposedly swarming with tuna and which float over thousand of nautical miles.

The main species of tuna are the bluefin (or red tuna), the albacora (or white tuna), the bigeye (or patudo), the yellowfin (or yellow-jawed tuna), and the skipjack (or listao).

No mention of this industry and its current status or future development can be made without reference to canned tuna, in France, Europe and the World, which consumes 60 % of the catch, whereas the other forms of conservation – fresh, frozen, smoked, dried… make up the rest.

The world resources of tuna and other fish cannot be indefinitely exploited without causing a rapid depletion in the stock and serious disruptions in the market. Fishing techniques, which are not controlled and restricted, are aggravating the supplies of tuna. The search for efficiency and higher returns has made spectacular progress from the so-called "californian" method to the "turning seine"? But other reasons have pushed certain fleets to go only after shoals of tuna on the surface, easy to encircle, by using extremely cheap manpower on seiners with ever-increasing capacity (up to 1,500 tons). This is the development of fishing on artificial wrecks or FADs (Fish Aggregating Devices), which are tracked at great distance by satellite and occasionally are accompanied by exploration ships, the "auxiliary vessels".

Europeans have been able to track tuna on the move for a long time by using the "school" fishing technique and catch a higher percentage of yellowfins (neothunnus albacares), some 35 to 50 %, compared to Asians, who concentrate much more on the listao (katsuwonnus pelamis) which represent some 90 % of their take. Another serious problem posed by fishing off artificial wrecks, is that no selection is made between tuna, good for conservation and the young or small, which have little commercial interest and get destroyed, as is the case for the patudo (thunnus obesus), nowadays a particularly threatened specie.

Despite attempts to limit the catches on wrecks in the Atlantic and the Eastern Tropical Pacific, during the course of 2000 and this year, catches have again far exceeded what would be a reasonable amount for the normal market needs for conservation. In practice, the world fleet of big seiners remains around 400 units, but the average size of these ships has a tendency to grow on account of the increase in the "jumboisation" of hulls to expand their capacity to take on tuna, but also the introduction of new units of 110 metres long and with a 3,000 ton capacity. However the average age of the world tuna industrial fishing fleet is over 20 years, and even though orders of new vessels have currently stopped, one can reasonably expect to see a start-up again soon.

Record hauls are being recorded using the powerful modern techniques to supply too-many transformation installations, which are in surplus to a market that is growing very slowly in Europe and stagnating elsewhere. It is hardly surprising that the industry hit its worst crisis in 1999-2000, with the price of tuna at all time lows of 30 years ($ 350/t C&F Bangkok) and canned stocks oversupplied. A number of players have at last realised that it is high time to introduce measures aimed at protecting resources and to establish operating standards, which will allow the industry to remain permanently in business.

Canned fish is easy to use but is becoming outdated. Nowadays, with constant changes in feeding habits, the "fast food" and "prepared meals" are the new fashion for eating. But while demand for fresh and prepared tuna is spreading, canned product still counts. Tuna remains in the forefront of canned fish and is the favoured choice for the production lines of the big distributors. This trend is based largely on special brand labelling from the main producers, reinforced with advertising and has, like most foodstore items, seen a development of "own brands" from the distributors.

In France the growth of tuna and vegetables in the "salad" market has stimulated production lines which assembly the tuna cuts, together with the other ingredients in highly mechanised fashion. Having a headstart over other European countries, we possess a complete logistic network for frozen tuna with advanced infrastructure, from the factories in Africa which supply directly into Europe "outside customs" to the conception and realisation of classic and innovative products

Ile Bourbon
long liner, 55.50 m, blt 2001 by Piriou, operated by Armements Réunionnais

distributed throughout Europe. Notwithstanding, the three main national companies have been taken over by multinationals (American, Moroccan, and recently Italian).

Italy has remained faithful to tuna in olive oil, but they rely more and more on imported cuts. Preparation is done in the traditional way from the whole tuna (tonno grezzo) on the spot, however legislation makes no differentiation between this method and that of canned cuts, either in Italy or throughout Europe or in the rest of the world. The Spanish, whose methods of preparation are to the taste of Italians, have seen the chance that the Italian market offers to develop their canned exports where they control two important national Italian brand names.

Spain has become a major player in the last decade of the 20th century. She possesses many advantages with her fishermen, industrialists, a dynamic entrepreneur spirit, and support from both her Government and from Europe. Next to tuna, the second in importance is the sardine, but with a prominent role that the canning of specially prepared sea-food (mariscos) plays in supporting a large number of small and medium-size companies with product that Asian suppliers are unable to provide. And while talk of mergers amongst the canning companies is on everybody's lips, it appears that our neighbours are very attached to the notion of keeping a family control in business. Meanwhile the Spanish tuna network is currently spreading "urbi et orbi" both within and outside Europe.

Finally it is to be noted that the tuna canning market has seen a remarkable growth in the U.K. In 1998, canned imports were even higher than that in France. Two big private brands, controlled by powerful international groups, supply the lion's share of the U.K. market. It is interesting to see that they do not have the integrated network with fishing boats… but they have exclusive partnership agreements with companies operating out of certain ACP countries on the Atlantic and Indian Ocean seaboards, a recognition of sorts that the French model developed over the past 30 years was not so bad after all.

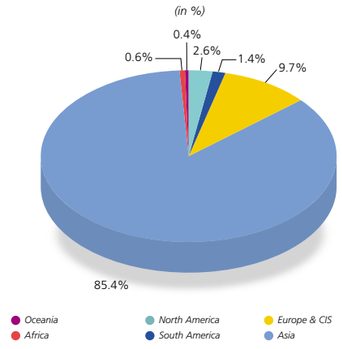
Can aquaculture compete with traditional fishing?

Aquaculture, the more or less controlled breeding of aquatic species, although practised for several millions of years in China, has only seen an important development in the last 50 years in fresh water and the last 20 years in salt water. Figures from the FAO estimate the fish production at 92.3 million tons and 32.9 million tons for aquaculture, a total of 125.2 million tons (1999 figures).

In comparison to traditional fishing, the aquaculture production only represents a third of the fishing sector, but as nearly all the available resources are fully utilised in traditional fishing, an increase in supply can only come from the aquaculture end.

The seafarming production is very unevenly distributed between the various continents as the following table shows.

Share of the world seafarming production

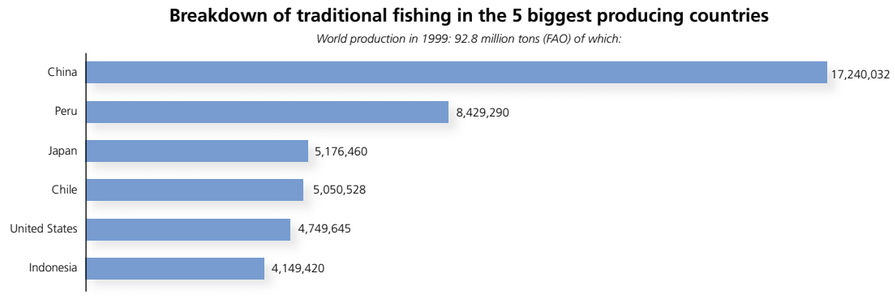


Behind these figures lie a great diversity in the types of aquaculture practised.

Fresh water fish represent the largest seafarming production in the world, with 17 million tons produced in 1998, thanks to China and India. The breeding of herbaceous species has been encouraged for subsistence and has been integrated into production systems in rural areas. There is consequently few big commercial activities, apart from the red tilapia, for which there is a ready-made market.

The carnivorous fresh water species are for the most part bred in an intensive system fed with artificial food. These species are therefore expensive to produce, despite the important progress made in the conversion rates as well as production cost of the food. Fresh water salmon can be interesting to developing countries with mountainous areas which have natural cold water (below 18°C).

Compared to fresh water fish, the marine species represent a much smaller volume of production, with 781,000 tons (1998 figure). The species bred have a high commercial value and are for the most part carnivorous. The economic importance of species produced in aquaculture has allowed the financing of studies on the techniques of breeding



done by governmental bodies and the breeders themselves. Apart from salmon, the species currently being bred are widespread, as each country has a tendency to produce the right fish for its own market. Salmon is a breed apart in that the control of the technical aspects of production has allowed such savings in costs and amazing results that it has been possible to move from a luxury item to one of a normal everyday consumption.

In aquaculture the main species are the sea bass, john dory, turbot, striped bass, the red drum and the tropical sea bass. Species whose habits are in the process of being fully controlled are the sole, cod, halibut, and youngs coming from a natural habitat are the grouper, snapper, tuna, and the sea bream.

In terms of traditional fishing, the main species caught are: peruvian anchovies (thanks to the end of the "el Nino" stream), the Alaskan pollock, the Atlantic herring, the skipjack tuna, and the chub mackerel.

The prospects of developing aquaculture, apart from the purely subsistence activity, lies essentially in the transfer of breeding techniques of species whose habits are now fully under control to countries which have very low production costs. In this way commercial breeding can be envisaged for a variety of species such as the marine shrimp, the catfish, or the barramunda. However the feasibility of such projects is highly conditional upon the supply of good quality food at low prices. In Europe one can foresee a development of aquaculture systems in closed circuits which provides a good solution to environmental concerns which are becoming more acute.

These very same ecological concerns are growing in importance and posing problems to traditional fishing. It is probable that fishing with the traditional trawl will decline given the damage done to the species being fished, and that there will be an important increase in longliners which are selective and have the merit of protecting the young and the reproduction cycles. There is a groundswell movement to have better controls on quotas, species fished, and the protection of the environment in order that the consumer will be able to maintain a choice between the quality of products from the sea delivered by the traditional fishing and a variety of cheaper products coming from aquaculture.

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To our good readers, the trends and statistics have been supplied to us by Société Cofrepêche (Paris). The developments concerning the future of the tuna industry have been made in collaboration with our friend Michel Delrue, well known in the international tuna world. ■

THE MARINE INSURANCE MARKETS IN 2001

Annus Horribilis

2001 has been, according to all market players, the worst year that they have ever known, due to extreme tension.

Technical Results of the marine insurance market

In May 2001 Münchener Rück, the worlds first re-insurer announced a combined ratio of 129 %, as its technical result for its 2000 marine underwriting, the worst ratio ever reached by the Munich giant.

The deterioration of the direct insurers results for 2000 is even more severe, it is widespread and results from the ending of a turndown cycle which started in 1995 and ending in 2000. During this cycle the worldwide marine insurance market turnover was reduced from 16,8 billion $ to 11,6 billion $, decreasing by nearly 31 % due to premium rate cut down only.

The hardening of the market which started smoothly early 2001 did not allow for a come back to profitable technical results, and the counter performance of the stock markets amplified the losses actually incurred by marine insurers.

Impact of the 11th of September 2001 events

In those circumstances the events of the 11th of September have not only been acting as the release mechanism of the hardening of the market, but due to their magnitude, the market structure itself is challenged.

The financial impact for the insurers and re-insurers of 11th of September events is estimated around 58 billions $.

The reinsurance market, touched on the highest level of the exposures, is the most affected, and some are expecting a financial deficiency of the players with the smallest capitalisation.

This claim affects all classes of insurance, life insurance, property damage, liability insurance, and marine insurance, the latter due to the aircraft insurance being technically covered through marine insurers.

It is mainly the North American and multinational insurers with U.S. subsidiaries, who are directly involved in this claim.

However indirectly and by chain-reaction, middle size insurers not registered in the U.S., fear the consequences of this event; in practice the possible bankruptcies which could affect the reinsurance market could have a significant impact on their accounts. Furthermore the cost of the reinsurance is substantially increased.

Accordingly the reverse of the market trend can only be spectacular.

War Risks Market

As a first reaction and eight days following the events the main war risks markets, Lloyd's, French market, Norwegian pool, reacted drastically by increasing at least twice the basic rate. For specific shipping activities considered as risky, such as the cruise sector, rates were multiplied by 10 to 20 times.

In the meantime, the « trading warranties », a list of countries in the territorial waters of which sailing is covered subject to prior notification and potential additional premium, were reviewed by all the markets and the countries of the Persian Gulf, Suez Canal and of course Pakistan.

Additional premiums for those areas were increased substantially.

Ordinary Risks

For the policies coming up for renewal following the events of the 11th of September, general increases have been requested.

On the French market, which has undoubtedly been the toughest on increases, for the risks with good loss records, the minimum increases were between 10 % to 20 % depending on the insurers.

For the Hull and mainly non-domestic Hull risks, in many cases the increase reached 20 % to 40 % for « good » cases.

For risks with bad loss records there has been no limit to the increases, and frequently have been "re-rated" and subject to an increase of the deductibles, and restrictions in coverage conditions.

For long-term contracts, or extension of long-term contracts in force, it is quite impossible to find a solution.

P&I

The P&I Clubs are also affected, losses experienced have remained relatively stable since 1996, on the other hand financial profits – which allowed to cover the gap between claims and premiums (in decline during five years) – have dropped since 20th of February 2001 thus revealing the lack of necessary premium to cover an ordinary loss experience.

As a matter of fact, the underwriting year 2000-2001 for all P&I Clubs, has reached a technical loss of nearly 336 million $ against 116 million $ for 1999-2000. In addition to the technical loss incurred since 1997, today's significant increase in cost of reinsurance programs (around 35 %) has to be taken into consideration.

The general increase of premium forcasted for 20th of February 2002 is estimated between 25 % to 30 % (depending on each Club), on top of which must be added the « supplementary call » for the 2000 and probably 1999 years, « supplementary calls » will be, for most of the Club, actually invoiced.

Therefore for a 2000 premium of 100, integrating the « supplementary call » of 25 %, the total premium for 2002 should be in the range of 156,25 %, representing an average increase of 56,25 % over two years.

The marine hull insurance market

1998 Gross premium	$m	Market share	1999 Gross premium	$m	Market share	99/98
1. Japan	499	16.33%	1. Japan	426	16.35%	-14.6%
2. UK (Lloyd's)	342	11.20%	2. France	392	15.05%	14.6%
3. France	340	11.13%	3. UK (Lloyd's)	384	14.74%	12.9%
4. USA	315	10.31%	4. USA	260	9.98%	-17.5%
5. Norway	296	9.68%	5. Norway	237	9.10%	-19.9%
6. Italy	266	8.72%	6. Italy	160	6.14%	-39.8%
7. UK (IUA)	186	6.07%	7. UK (IUA)	122	4.68%	-34.4%
8. Spain	116	3.80%	8. Spain	105	4.03%	-9.5%
9. Germany	98	3.21%	9. Germany	62	2.38%	-36.7%
10. Denmark	65	2.12%	10. Canada	51	1.96%	-21.5%
Total 10	**2,524**	**82.58%**	**Total 10**	**2,199**	**84.41%**	**-12.8%**
World Total	**3,056**	**100.00%**	**World Total**	**3,056**	**117.31%**	**0.0%**

in million US$ - Source : IUMI - AFSAT, November 2001

The marine cargo insurance market

1998 Gross premium	$m	Market share	1999 Gross premium	$m	Market share	99/98
1. Japan	1,744	23.76%	1. Japan	1,620	24.97%	7.1%
2. Germany	1,178	16.04%	2. Germany	902	13.90%	23.4%
3. USA	807	11.00%	3. USA	690	10.64%	14.5%
4. France	698	9.50%	4. France	563	8.68%	19.3%
5. Italy	499	6.80%	5. Italy	480	7.40%	3.8%
6. UK (Lloyd's)	404	5.50%	6. UK (Lloyd's)	326	5.03%	19.3%
7. Spain	193	2.63%	7. Switzerland	187	2.88%	3.2%
8. Switzerland	177	2.42%	8. Netherlands	170	2.62%	4.2%
9. Netherlands	165	2.24%	9. Spain	152	2.34%	7.7%
10. UK (IUA)	137	1.87%	10. UK (IUA)	118	1.82%	13.9%
Total 10	**6,002**	**81.76%**	**Total 10**	**5,208**	**80.28%**	**13.2%**
World Total	**7,340**	**100.00%**	**World Total**	**6,487**	**100.00%**	**11.6%**

in million US$ - Source : IUMI - AFSAT, November 2001

Impact on the market structure

The magnitude of the correction harms the long-term relationship between market players.

On several occasions European shipowners warned the European Commission about the level of war risks premiums, invoiced in a beautiful unanimity by the various markets.

More generally speaking for corporate insurance, risk management associations such as AMRAE in France, have threatened to create their own insurance structure to avoid the amplitude of cycles known on the traditional market.

On their side direct insurers recall the absolute need for an improvement of their results, otherwise the top management of some insurance companies may decide to stop underwriting corporate insurance policies to focus on more profitable branches of their activity, such as life insurance and private insurance.

The hardening of the market is a long going process, which will be undoubtedly reinforced in the coming months by the withdrawal of some reinsurers and insurers. Market overcapacity will end soon, and if the direct insurance market is still adapted for the coverage of corporate insurance, which has to be proven, three structure modification can be anticipated:

◆ The return to co-insurance practices: the trust of insurers towards their re-insurers has been affected by the 11th of September 2001 events, the former will be inclined to determine their underwriting liabilities in regards to their net capacities and no longer in regards to the re-insurance capacity available. Furthermore, the facultative re-insurance capacity (re-insurance underwritten on a case by case basis by an insurer for a single policy) is very lean. Thus one can expect a general decrease of the shares underwritten on each policy. To cover 100 % of the same risk more insurers will be needed.

◆ The achievement of market internationalisation: the partnership between market players has been damaged by the upheaval of the market, and one can anticipate that the domestic solidarity will disappear and be replaced by a search for financial optimisation on the worldwide market. Some transfers from domestic markets to international markets of significant contracts already occurred during the 1st of January 2002 renewals.

◆ The search for alternative risk financing tools: the strategies of alternative risk financing becomes pertinent with a tough market situation. One can expect that those corporations not yet having re-insurance or insurance, will pay attention to these alternative tools. More generally speaking the willingness of the big corporations to mutualise their risks to escape from an erratic market, should not be minimised. ■

FRENCH SHIPYARDS DELIVERIES AND ORDERBOOK IN 2001

Chantiers de l'Atlantique

Ships delivered in 2001

K 31	***Seven Seas Mariner***	**2001**	**Radisson Seven Seas**	
	Cruise vessel	46,000 gt – 360 cabins 750 pass.	216 m x 28.80 m Diesel electric - POD 2 x 4,800 kW	on 6.90 m 21.8 K.
S 31	***Infinity***	**2001**	**Royal Caribbean Cruises**	
T 31	***Summit***	**2001**	**-**	
	Cruise vessels	91,000 gt – 1,019 cabins 2,450 pass.	294 m x 32.20 m Gas / Steam turbines - POD 39,000 kW	on 8.50 m 24 K.
V31	***European Vision***	**2001**	**Festival Cruises**	
	Cruise vessel	58,600 gt – 750 cabins 2,035 pass.	251 m x 28.80 m POD 2 x 10,000 kW	on 6.60 m 21.7 K.
Z 31	***R Eight***	**2001**	**Renaissance Cruises**	
	Cruise vessel	30,200 gt – 351 cabins 702 pass.	181 m x 25.46 m Diesel electric - 2 x 6,750 kW	on 5.83 m 20 K.

Ships on order as at 1/1/2002

U 31	***Constellation***	**2002**	**Royal Caribbean Cruises**	
	Cruise vessel	91,000 gt – 1,019 cabins 2,450 pass.	294 m x 32.20 m Gas / Steam turbines - POD 39,000 kW	on 8.50 m 24 K.
X 31	***European Stars***	**2002**	**Festival Cruises**	
	Cruise vessel	58,600 gt – 783 cabins 2,035 pass.	251 m x 28.80 m POD 2 x 10,000 kW	on 6.60 m 21.7 K.
A 32	***Mohammed V***	**2002**	**Moroccan Royal Navy**	
B 32	***Hassan II***	**2002**	**-**	
	Frigates	2,730 gt	93.67 m x 14 m 4 x 2,400 kW	on 4.01 m 20.5 K.
C 32	***Coral Princess***	**2002**	**P&O**	
D 32	***Island Princess***	**2003**	**-**	
	Cruise vessels	88,000 gt – 987 cabins 1,950 pass.	294 m x 32.20 m Diesel electric - 2 x 20 mW	on 8.00 m 24 K.
G 32	***Queen Mary 2***	**2003**	**Cunard**	
	Cruise vessel	150,000 gt – 1,430 cabins 2,620 pass.	345 m x 41 m 86,000 kW	on 10 m 29.35 K.
H 32	***Crystal Serenity***	**2003**	**NYK**	
	Cruise vessel	64,000 gt – 550 cabins 1,080 pass.	250 m x 32.20 m 2 x 13,000 kW	on 7.60 m 22.75 K.
I 32	***Mistral***	**2004**	**DCN**	
J 32	***Tonnerre***	**2005**	**-**	
	LPD		199 m x 32 m Diesel electric - 15,000 kW	on 6.20 m 19 K.
K 32	**-**	**2003**	**MSC**	
L 32	**-**	**2004**	**-**	
	Cruise vessels	59,000 gt – 795 cabins 2,099 pass.	251 m x 28.80 m 2 x 10,000 kW	on 6.60 m 21.7 K

Alstom Leroux Naval

Ships delivered in 2001

825	***Aelos Kenteris***	**2001**	**Nel Lines**	
	Fast ferry	1,300 dwt - 1,800 pass. Gas turbines M.E. MTU	140 m x 21.80 m 2 x 25 mW 2 x 8,1 mW	on 3.60 m 40 K.
826	***Aelos Express II***	**2001**	**Nel Lines**	
	Fast ferry	450 dwt - 800 pass. M.E. MTU	104 m x 15.70 m 3 x 8,100 kW	on 2.60 m 36 K.

Constructions Mécaniques de Normandie

Ships delivered in 2001

	Alter Ego	**2001**	**LuxYachting**	
	Motor yacht		33.80 m x 8.40 m M.E. - SKL 1,000 BHP	on 2.70 m 11.4 K.
	Bermie	**2001**	**Bermie Nautic**	
	Motor yacht		49 m x 9.60 m M.E. - 2 x 1,650 BHP	on 2.85 m 17 K.

Ships on order as at 1/1/2002

	Lady B	**2002**	**Sugiton**	
	Catamaran	Yanmar 6LY2-STE	32 m x 14 m M.E. - 2 x 309 kW	on 1.80 m to 4.50 m 12.5 K.
	Heloval	**2002**	**Société Maritime Héloval**	
	Motor yacht	Caterpillar 3508B	42.10 m x 8.60 m M.E. - 2 x 895 kW	on 2.75 m 13.8 K.
	-	**2002**	**CFT**	
	-	**2002**	**-**	
	Tank barges	637 t - 3,000 t	79.00 m x 11.40 m	
	-	**2002**	**CFT**	
	Tank barge	660 t - 3,130 t	82.50 m x 11.40 m	
	-	**2003**	**-**	
	105 foot sailing ship	Cummins CTA 8	31.50 m x 7.20 m 300 BHP	11 K.
	Mari-Cha IV	**2003**	**-**	
	Racing sailing ship		43.00 m x 9.00 m	

Chantiers Piriou

Ships delivered in 2001

C228	***Ile Bourbon***	**2001**	**Armement Réunionnais**	
	Long liner		55.49 m x 11.00 m M.E. - 1,800 kW at 720 tr/mn	12 K.
C229	***Jean-Marie Nocca***	**2001**	**Armement Nocca**	
	Stern trawler		24.90 m x 7.20 m M.E. - ABC 316 kW	
C230	***Hermine***	**2001**	**Armement Hamon**	
	Trawler	Caterpillar 3512B	24.80 m x 7.60 m Diesel - 750 BHP	
C236	***Azmina***	**2001**	**Armement des Mascareignes**	
	Long liner		55.49 m x 11 m M.E. - 1,800 kW at 720 tr/mn	12 K.
C239	***Aito Nui***	**2001**	**Port Autonome de Papeete**	
	Tug		30.30 m x 10.40 m M.E. - 2 x 1,250 kW	

Ships on order as at 1/1/2002

C237	***Albius***	**2002**	**Armement Sapmer**	
	Long liner		55.49 m x 11 m M.E. - 1,800 kW at 720 tr/mn	12 K.
C238 **C240**	***Cap Horn I*** ***Ile de la Réunion***	**2002** **2002**	**Armement le Garrec** **Comata - La Reunion**	
	Long liners		55.49 m x 11 m M.E. - 1,800 kW at 720 tr/mn	13 K.
C241	***Jean Louis Vincent***	**2002**	**Scotto - Sete**	
	Fishing boat		24.90 m x 7.20 m ABC 316 kW	
C242	***Surfer 198***	**2002**	**Surf SAS**	
	Crew boat		19.50 m x 6.00 m 2,280 BHP	28 K.
C243	***Surfer 254***	**2002**	**Surf SAS**	
	Crew boat		25.20 m x 6.20 m	28 K.
C244 **C245**	***Nuevo Panchilleta*** ***Nuevo Elorz***	**2002**	**Fuentes**	
	Tuna purse seiners		43.15 m x 9.50 m 2 x 2,219 BHP	

FRENCH ORDERS TO FOREIGN SHIPYARDS IN 2001

Ships delivered in 2001

Treci Maj (Croatia)

678	***Bro Elizabeth***	**2001**	**Broström Tankers SA**	
	Product and chemical tanker	37,300 dwt - 16 tanks	184 m x 30 m	on 10.5 m
	IMO II	Sulzer	7,900 kW	15 K.

Aker Finyards (Finland)

437	***Sea France Rodin***	**2001**	**Sea France**	
	Ro-ro passenger ferry	34,000 gt - 1,900 pass.	185 m x 27.70 m	on 6.50 m
		700 cars - 2,000 lm	39,000 kW	25 K.

Damen (Netherlands)

511201	***Kianda***	**2001**	**Sonasurf**
511202	***Luegi***	**2001**	**-**
	ASD-Tugs	2 x 2,758 BHP	32.50 m x 12 m	on 5 m
		Bergen KRM B9	Bollard Pull ahead : 65 t	12 K.

Niestern Sander (Netherlands)

813	***Belisaire***	**2001**	**Petromarine**	
	Product chemical tanker	7,100 dwt	129.95 m x 20 m	on 7.50 m
	IMO II	MAK	3,840 kW	

Kleven Florø (Norway)

145	***Pointe du Croisic***	**2001**	**Navale Française**	
	Chemical stainless steel tanker	6,500 dwt	112 m x 17 m	on 6.90 m
	IMO II	MAK	4,320 kW	14 K.

Celik Tekne (Turkey)

28	***Pyla***	**2001**	**Petromarine**	
	Product chemical tanker	6,712 dwt	114.00 m x 16.90 m	on 8.40 m
	IMO II	MAK	17,506 kW	20.5 K.

Yardimci (Turkey)

19	***FS Maud***	**2001**	**Fouquet Sacop**	
	Oil and chemical tanker	10,048 dwt	118.37 m x 19 m	on 8.22 m
		MAN B&W	4,440 kW	14 K.

Nacks (China)

004	***Nantor***	**2001**	**Setaf**
005	***Shanghor***	**2001**	**-**
	Bulk carriers	47,452 dwt	187.50 m x 31 m	on 11.75 m
		MAN-B&W	6,880 kW	16 K.

Daewoo (South Korea)

4072	***CMA - CGM Ravel***	**2001**	**CMA - CGM**	
	Container carrier	77,900 dwt - 6,734 teu	300 m x 40 m	on 14.50 m
		MAN - B&W	68,490 kW	27 K.

Hanjin (South Korea)

87	***CMA - CGM Berlioz***	**2001**	**CMA - CGM**	
88	***CMA - CGM Bizet***	**2001**	**-**	
89	***CMA - CGM Debussy***	**2001**	**-**	
	Container carriers	77,900 dwt - 6,627 teu	300 m x 40 m	on 14.50 m
		MAN - B&W	68,490 kW	26 K.

Hyundai Mipo (South Korea)

9915	***CSO Deep Blue***	**2001**	**Coflexip Stena Offshore**	
	Field development vessel		206 m x 32 m	on 18 m
		DP II Diesel electr.		

001	***Ile de Sein***	**2001**	**J/V Alda Marine**	
	Cable layer	8,200 dwt	139.70 m x 23.40 m	on 7.20 m
		DP II Diesel electr.	16,000 kW / 10,800 BHP	15.5 K.

012	***Kersaint***	**2001**	**Socatra**	
	Oil and chemical tanker	37,000 dwt	185.50 m x 27.34 m	on 11.20 m
	IMO III		9,400 kW	15 K.

Samho (South Korea) (ex Haedong)

1032	***Kerfons***	**2001**	**Socatra**	
	Oil and product carrier	7,500 dwt	115 m x 19.40 m	on 6.50 m
		Wärtsila - twin screw	4,440 kW	13.5 K.

Shin-Young (South Korea)

188	***Fouesnant***	**2001**	**Socatra**	
	Oil and product tanker	6,902 dwt	109.90 m x 18.20 m	on 6.70 m
			4,560 BHP	13.8 K.

China SB (Taiwan)

762	***CMA - CGM La Tour***	**2001**	**CMA - CGM**	
763	***CMA - CGM Manet***	**2001**	**-**	
	Container carriers	30,568 dwt - 2,226 teu	195.60 m x 30.20 m	on 11 m
		B&W	17,506 kW	20.5 K.

Ships on order as at 1/1/2002

Treci Maj (Croatia)

679	***Bro Ellen***	**2002**	**Broström Tankers SA**	
	Product and chemical tanker	37,300 dwt - 16 tanks	184 m x 30 m	on 10.5 m
	IMO II	Sulzer	7,900 kW	15 K.

Orskov (Denmark)

221	**-**	**2002**	**Surf SAS**	
236	**-**	**2002**	**-**	
	Platform supply vessels		72 m x 16 m	on 5.90 m
	UT 755L		2 x 2,005 kW	14.5 K.

Fincantieri (Italy)

6081	***Danielle Casanova***	**2002**	**SNCM**	
	Ro-ro passenger ferry	44,500 gt - 2,204 pass.	175 m x 30.40 m	on 6.60 m
		Wärtsila 9L46C type	37,800 kW	23 K.

Niestern Sander (Netherlands)

814	***Adour***	**2002**	**Petromarine**	
	Product chemical tanker	14,800 dwt	140 m x 21 m	on 8.06 m
	IMO II	MAK 6M43	5,400 kW	13.5 K.

Van der Giessen de Noord (Netherlands)

985	***Mont-Saint-Michel***	**2002**	**Brittany Ferries**	
	Ro-ro passenger ferry	34,800 gt	173,40 m x 28,50 m	on 6.20 m
		2,260 pass.	22,000 kW	21.5 K.

988	**-**	**2002**	**SNCM**	
	Freight passenger ferry	35,000 gt - 594 pass.	176 m x 30.50 m	on 6.60 m
			37,800 kW	23 K.

Viana do Castelo (Portugal)

211	***FS Vanessa***	**2002**	**Fouquet Sacop**	
212	***FS Thais***	**2002**	**-**	
	Chemical and oil tankers	15,500 dwt	140 m x 23 m	on 8.30 m
	IMO II	MAK	6,300 kW	14 K.

Astilleros Zamakona SA (Spain)

C-505	***La Gironde***	**2002**	**Conseil Général de la Gironde**	
	Double end ferry	3,324 gt - 600 pass.	71 m x 18.30 m	on 2.60 m
		135 cars	4 x 950 kW	14 K.

Izar (Spain)

365	***Daniel Laval***	**2002**	**GIE Dragage-Ports**	
	Trailing suction hopper	7,000 dwt - 5,000 cum	104 m x 22 m	on 6 m
	Dredger	2 x Wärtsila-9L26A	2,925 kW / 2,700 kW	13 K.

366	***Samuel de Champlain***	**2002**	**GIE Dragage-Ports**	
	Trailing suction hopper	12,150 dwt - 8,500 cum	117 m x 24 m	on 8 m
	Dredger	2 x Wärtsila-CW16V200	2 x 3,200 kW	13 K.

Yardimci (Turkey)

25	***FS Diana***	**2002**	**Fouquet Sacop**	
	Oil and chemical tanker	10,048 dwt	118.37 m x 19 m	on 8.22 m
		MAN B&W	4,440 kW	14 K.

Nacks (China)

008	***Orientor***	**2002**	**Setaf**	
	Bulk carrier	47,452 dwt	187.50 m x 31 m	on 11.75 m
		MAN-B&W	6,880 kW	16 K.

Zhejiang (China)

093	***Artha***	**2002**	**Petromarine**	
	Bitumen tanker IMO II	4,300 dwt	106 m x 15.80 m	on 6 m
		MAK	2,880 kW	

Keppel (Singapore)

3637	***Athena***	**2002**	**Surf**	
	MPSV	2,600 dwt	86.30 m x 73.50 m	on 6 m
	VS 4501	MAK	2 x 4,320 kW	14 K.

Hanjin (South Korea)

098	***René Descartes***	**2002**	**FT Marine**	
	Cable layer	8,150 dwt	142.50 m x 22 m	on 7.40 m
		13,500 gt	16,400 kW / 10,800 BHP	16 K.
099	**-**	**2002**	**CMA CGM**	
100	**-**	**2002**	**-**	
	Container carriers	58,000 dwt - 4,367 teu	280 m x 32.26 m	on 13.00 m
				25 K.
652	**-**	**2002**	**Delmas**	
653	**-**	**2002**	**-**	
654	**-**	**2003**	**-**	
	Container carriers	21,200 dwt - 1,634 teu	168.00 m x 27.20 m	on 9.21 m
		MAN-BW	15,805 kW	20.5 K.

Hyundai Mipo (South Korea)

002	***Ile de Batz***	**2002**	**J/V Alda Marine**	
030	***Ile de Bréhat***	**2002**	**-**	
	Cable layers	8,200 dwt	139.70 m x 23.40 m	on 7.20 m
		DP II Diesel electr.	16,000 kW / 10,800 BHP	15.5 K.
013	***Kerel***	**2002**	**Socatra**	
	Oil and chemical tanker	37,000 dwt	185.50 m x 27.34 m	on 11.20 m
	IMO III		9,400 kW	15 K.

Samho (South Korea) /ex Haedong

1033	***Kergoat***	**2002**	**Socatra**	
	Oil and product carrier	7,500 dwt	115 m x 19.40 m	on 6.50 m
		Wärtsila - twin screw	4,440 kW	13.5 K.

China SB (Taiwan)

773	***Marie Delmas***	**2002**	**Delmas**	
774	***Catherine Delmas***	**2002**	**-**	
775	***Nicolas Delmas***	**2002**	**-**	
776	***Julie Delmas***	**2002**	**-**	
777	***Louis Delmas***	**2002**	**-**	
778	***Irma Delmas***	**2002**	**-**	
	Container carriers	31,000 dwt - 2,226 teu	195.60 m x 30.20 m	on 10.50 m
		B&W	17,506 kW	22 K.
796	**-**	**2003**	**CMA CGM**	
797	**-**	**2003**	**-**	
798	**-**	**2003**	**-**	
799	**-**	**2003**	**-**	
	Container carriers	30,450 dwt - 2,200 teu	197.70 m x 30.20 m	on 10.50 m
			17,506 kW	21.5 K.

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