

IUMI 2003 Sevilla.

Changing Nature of Risk

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Changed world of shipping – A Hull Underwriter's view

"Faites vos jeux - or

The blind man walking in the minefield"

Version One:

"Risk is changing continuously – my speech is not going to add anything new to ocean hull underwriting – let us continue with the coffee break."

Marine insurance is called "the victory of hope versus experience", therefore ...

Version Two:

"Risk is changing continuously – hull underwriters and capital investors risk to walk like a blind man in the minefield – we have to change – otherwise not only the risk is changing but we risk our jobs".

Overview.

1. Introduction
2. Changes in the world hull market 1993-2003
 - changing nature of hull markets
3. Basics of risk
4. A risk plan - business planning
5. Total exposure - The world fleet
6. Risks insured
7. Total casualties
8. Insured casualties
9. Anti trust law - a legal framework
10. Proposals

Overview.

1. Introduction
2. Changes in the world hull market 1993-2003
 - changing nature of hull markets

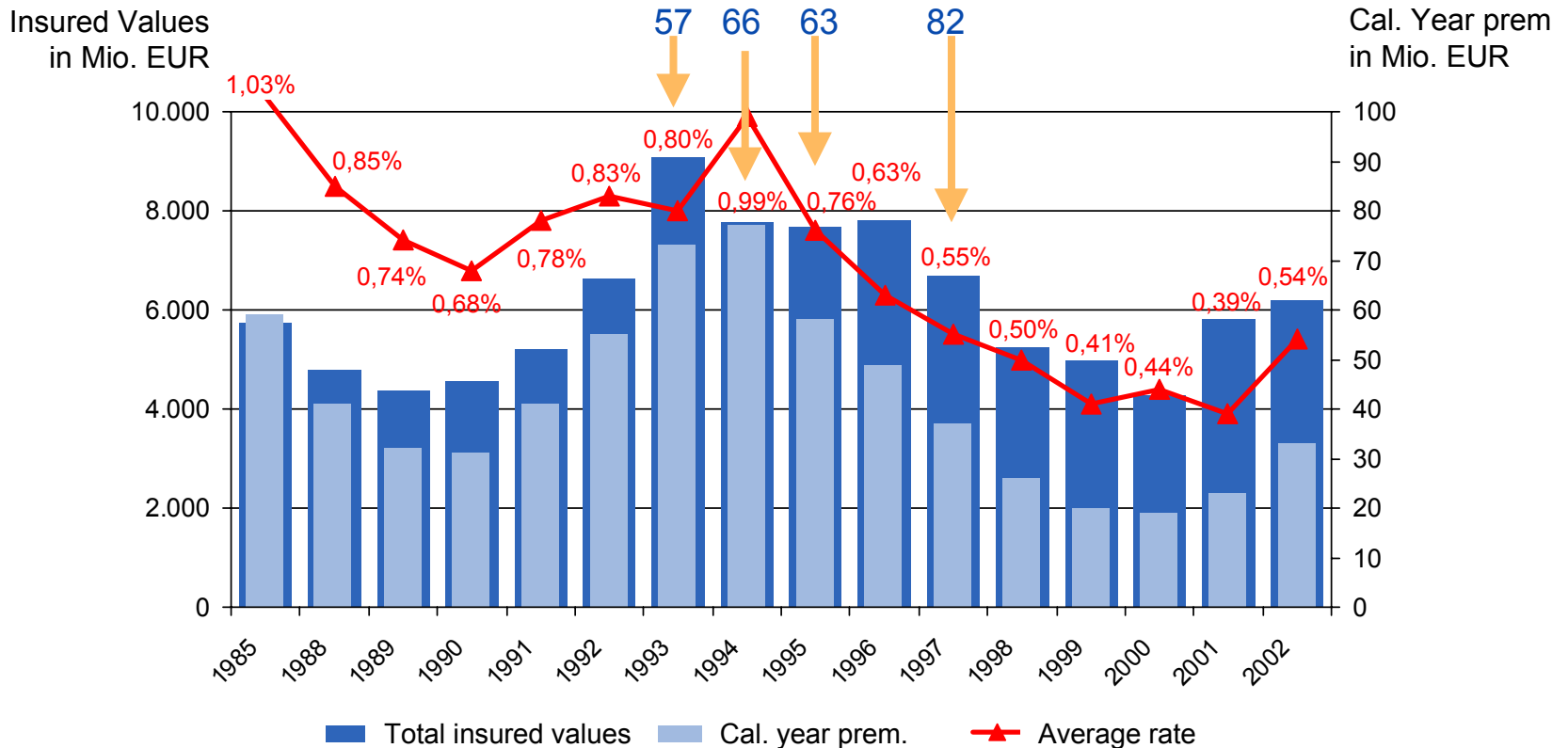
Ten Years ago.

Supply side:

- Hull markets – "a better organised and better informed community"
- reinsurers
- London market
- claims service organisations

German Calendar Year Statistic.

Average rate – prem. income based on Cal. Year Stat. 31.03.2003.

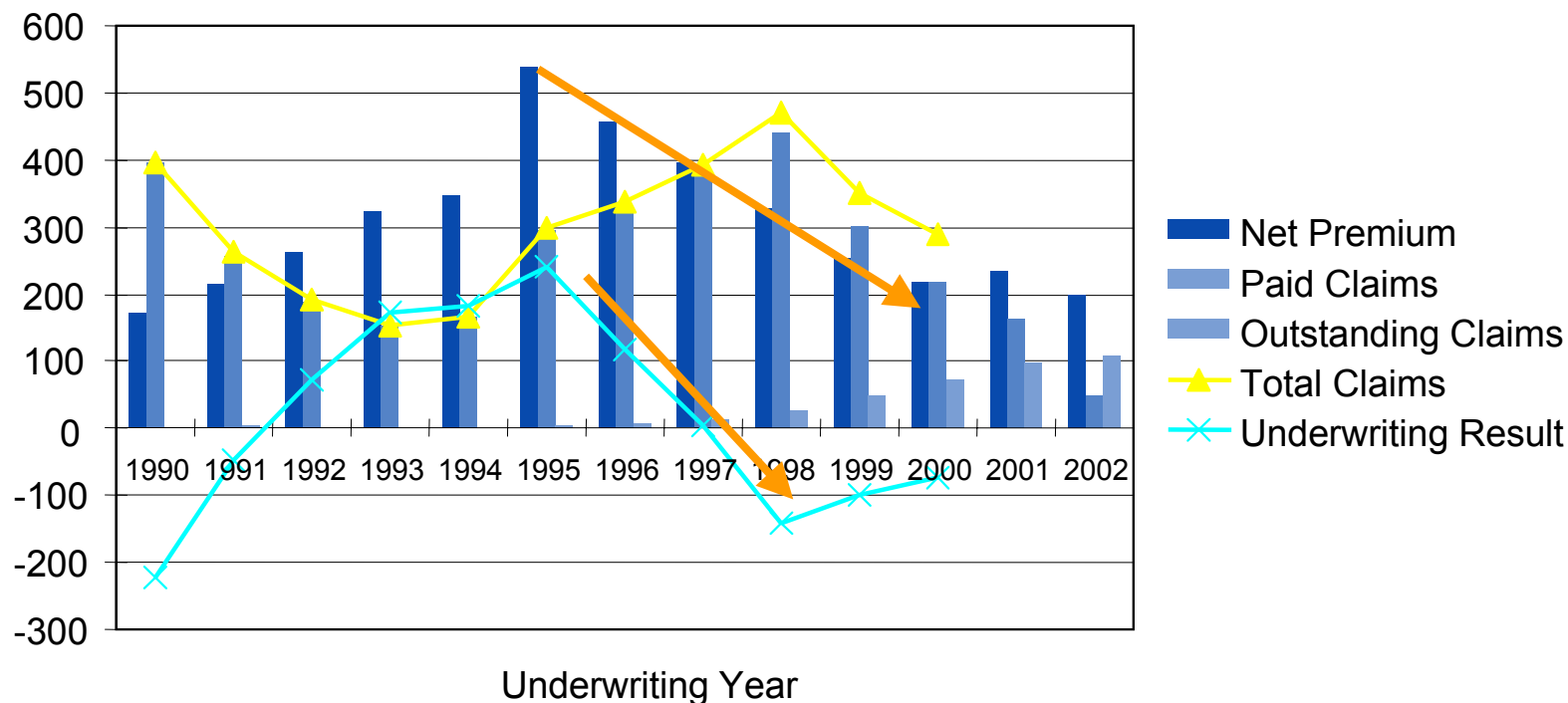


As indicator: Norwegian Marine Insurance Statistics.

Underwriting results per 31.12.2002.

in m. USD

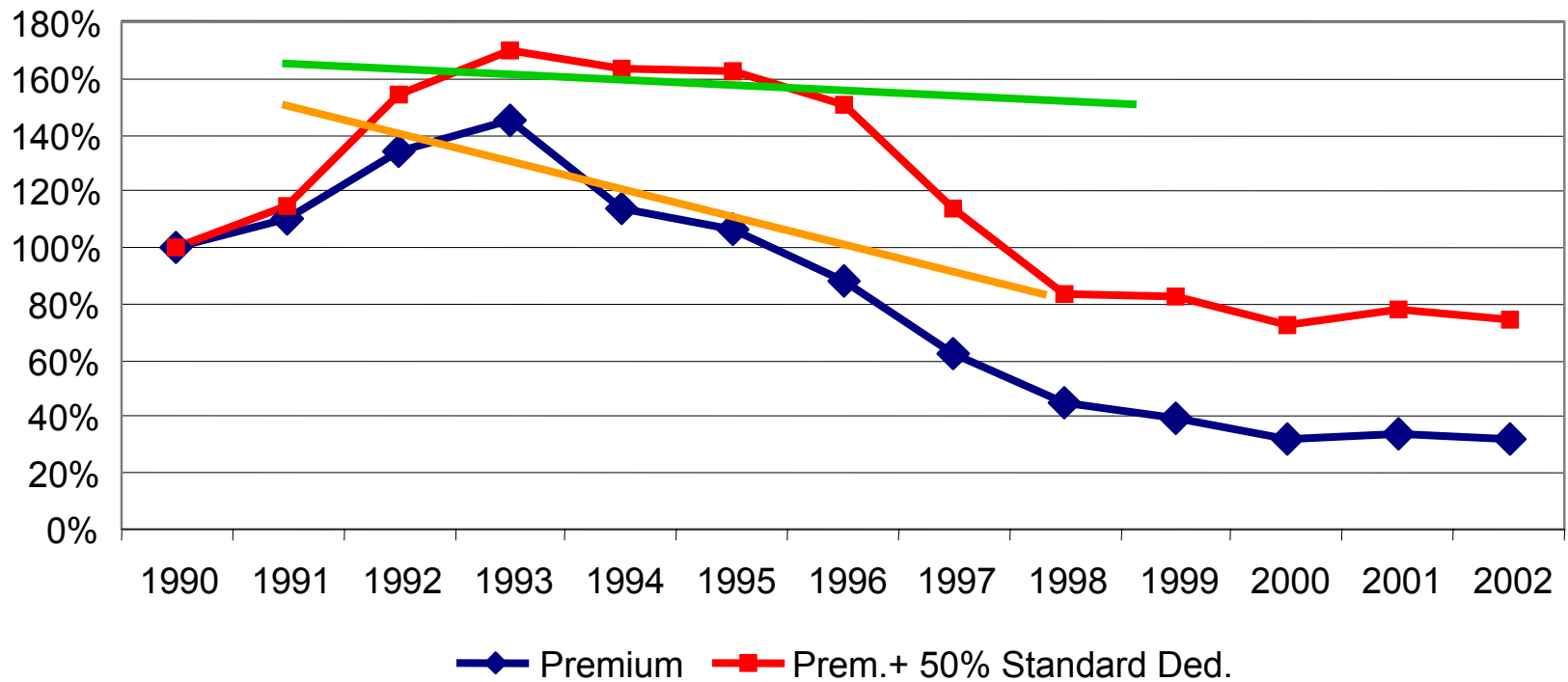
Total results for all risks registered by NoMIS



As rate indicators:

Norwegian Marine Insurance Statistics.

Rating Development, 1990 = 100%



XL waters the whisky?

Hull business is net line today:

Example :

Hull Underwriter A writes 15% of a 50 Mio. risk – TL happens

$50 \text{ Mio.} * 15\% = 7.5 \text{ Mio. share of UWR A}$

A's XL net retention 5 Mio.

reinsurer X writes 30% on A's XL program

net retention 5 Mio. = $2.5 \text{ Mio.} * 30\%$ share for Reinsurer X

= share 0.75 Mio. for Reinsurer X

Today.

Supply side:

- Hull underwriters
 - ▶ work in different national and legal environments
 - ▶ work in different national supervisory regimes
 - ▶ work with different accounting standards (? - reserving)
 - ▶ are facing new legal regimes (i.e. IAS, Solvency II with respect to underwriting, market and credit risk of an insurer, Sarbanes Oxley)
 - ▶ have different strategic targets (“shareholder value”, mutuals, captives etc.)
- reinsurers
- London market
- claims service organisations

...further developments.

Supply side:

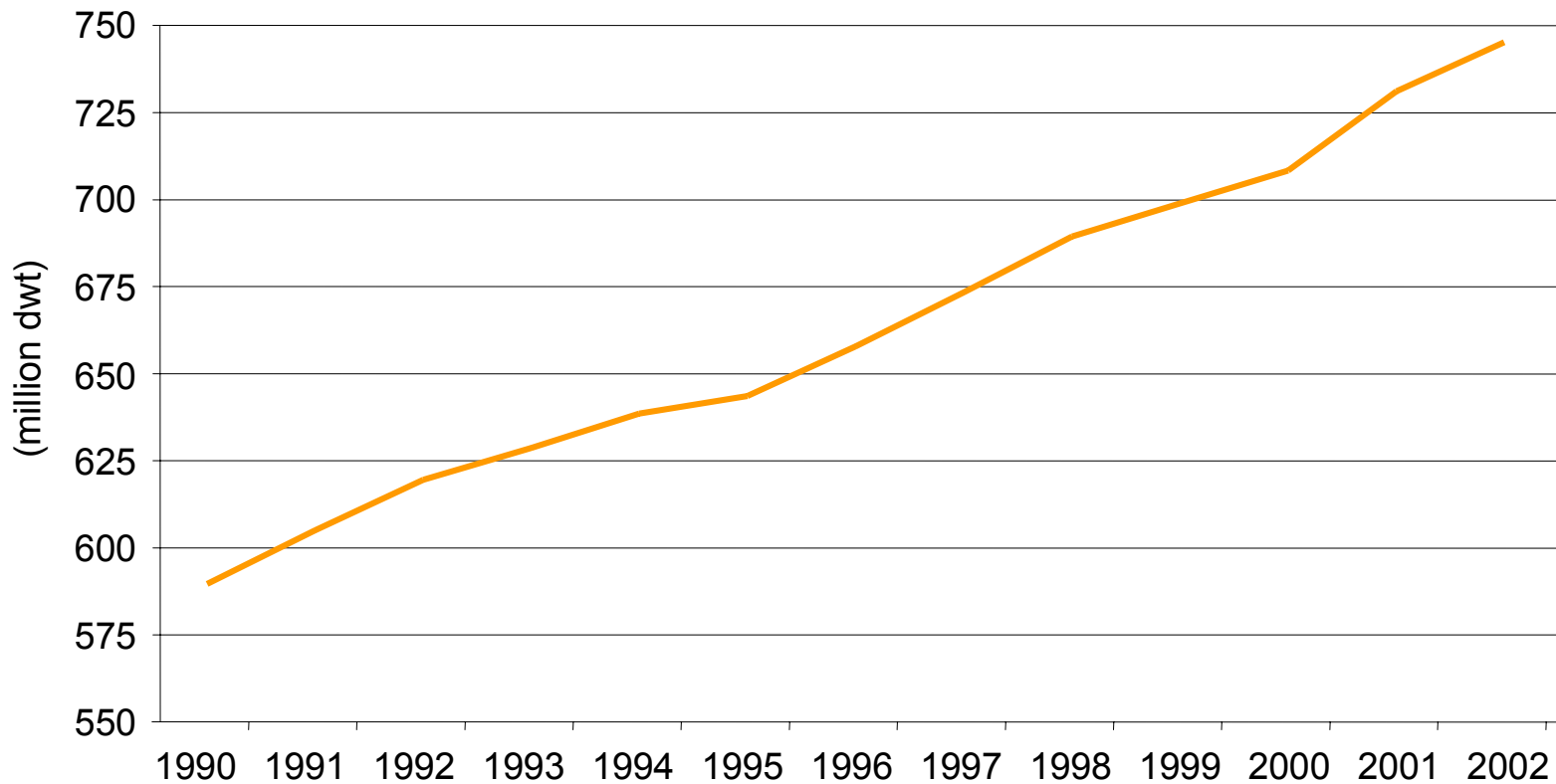
- Hull markets – "a better organised and better informed community"
- reinsurers
- London market
- claims service organisations

Demand side:

- shipowners
- brokers
- capital investors
- other influences

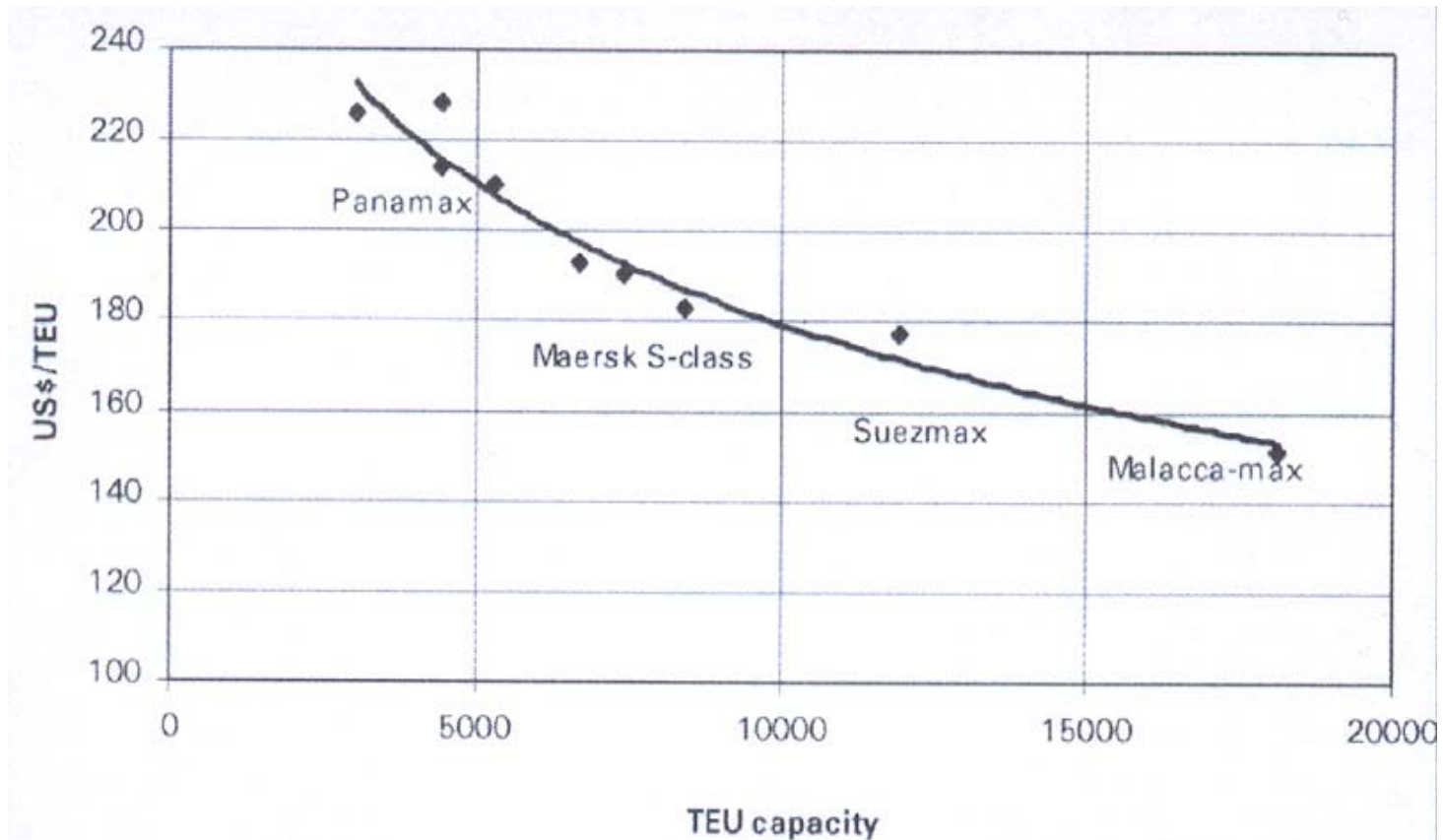
World fleet evolution.

(IUMI 2002 – J.-B. Raoust)



Optimising the cost situation:

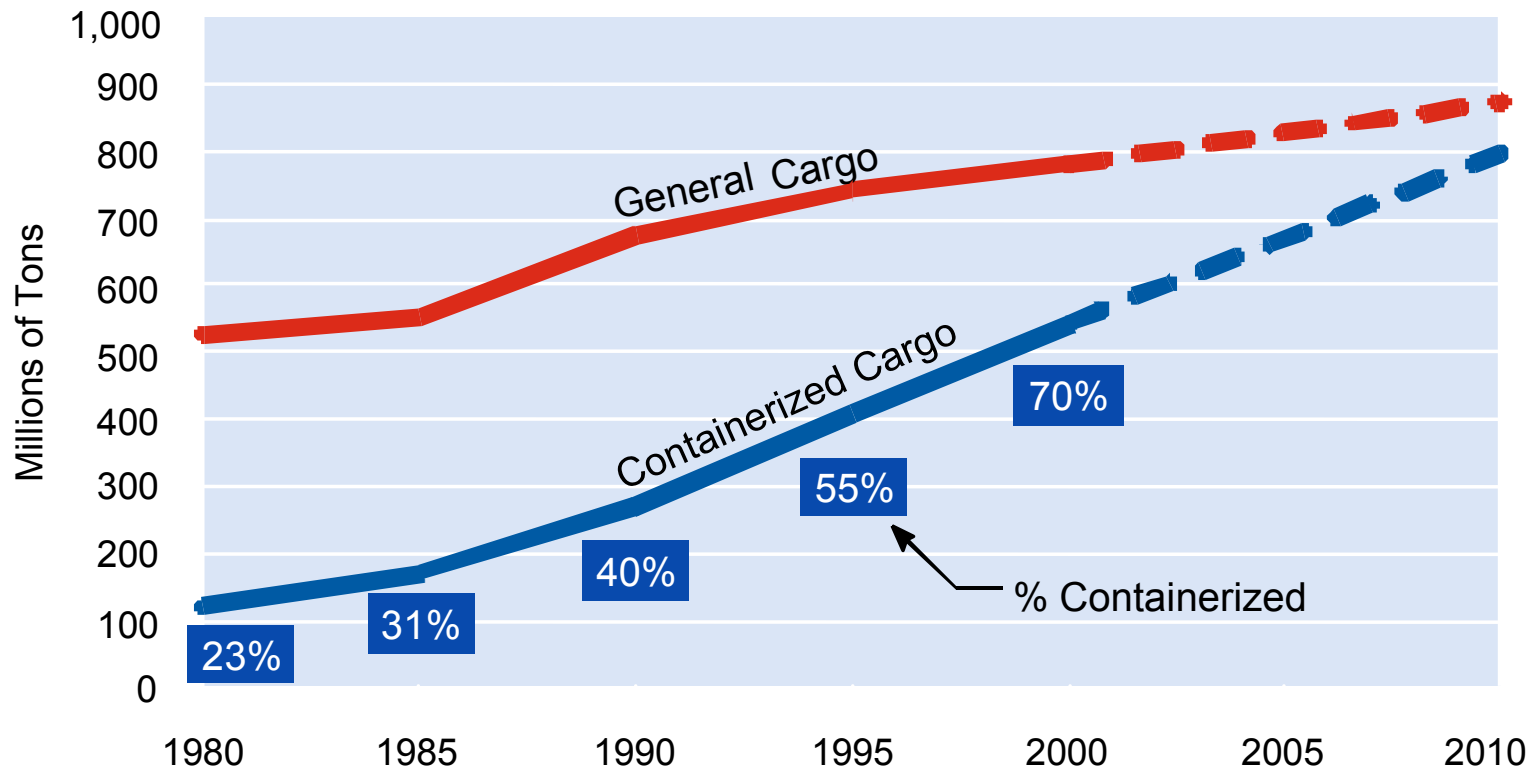
Freight per TEU between Singapore and Rotterdam



Source: Wirtschaftsbeirat Germanischer Lloyd 5.2003

CONFERENCE 2003

World Containerisation of the General Cargo Trades.



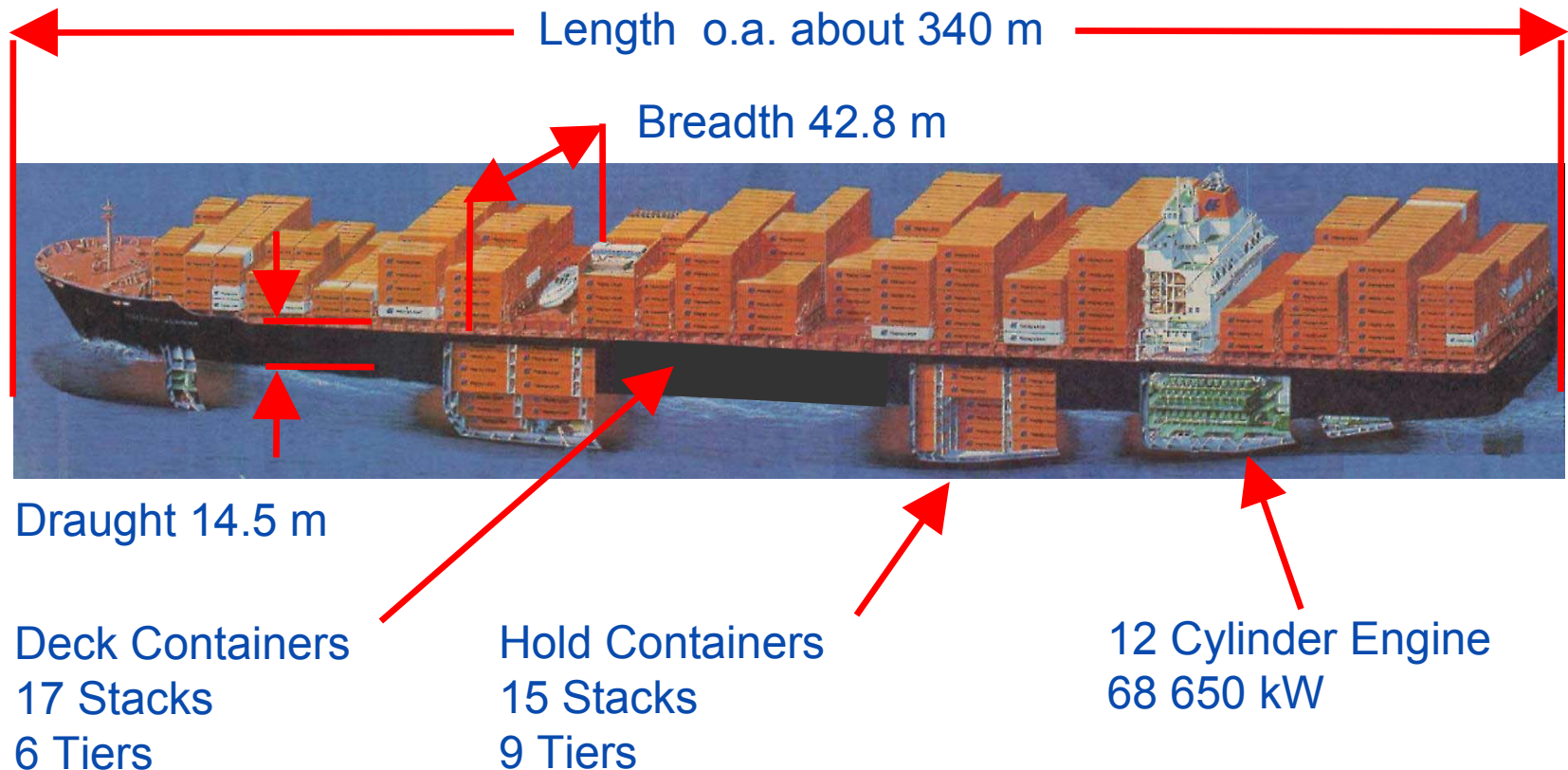
Source: Transystem Corporation

Source: Wirtschaftsbeirat Germanischer Lloyd 5.2003

WIRTSCHAFTSBEIRAT GERMANISCHER LLOYD CONFERENCE 2003

Bigger, faster, cheaper ships:

8200 TEU Post-Panamax Container Ship.



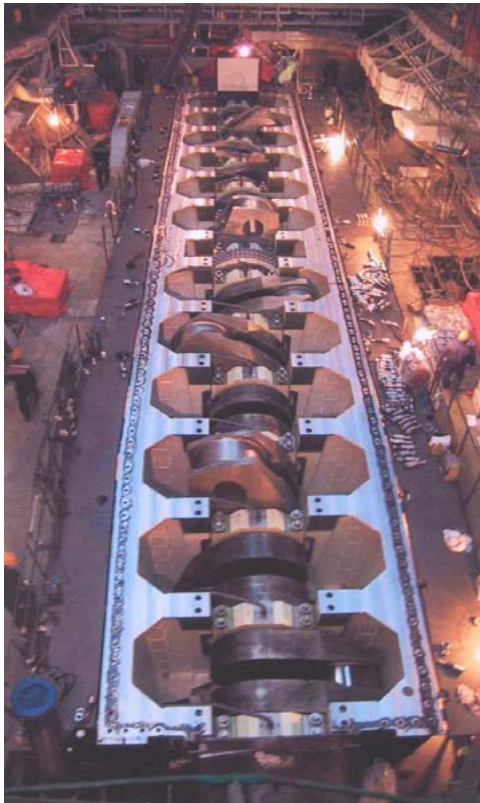
Main Engine for 8200 TEU Container Ships.

Max. power: 68,650 kW / 93,360 PS

Fuel consumption: 230 t/day at 25 kn

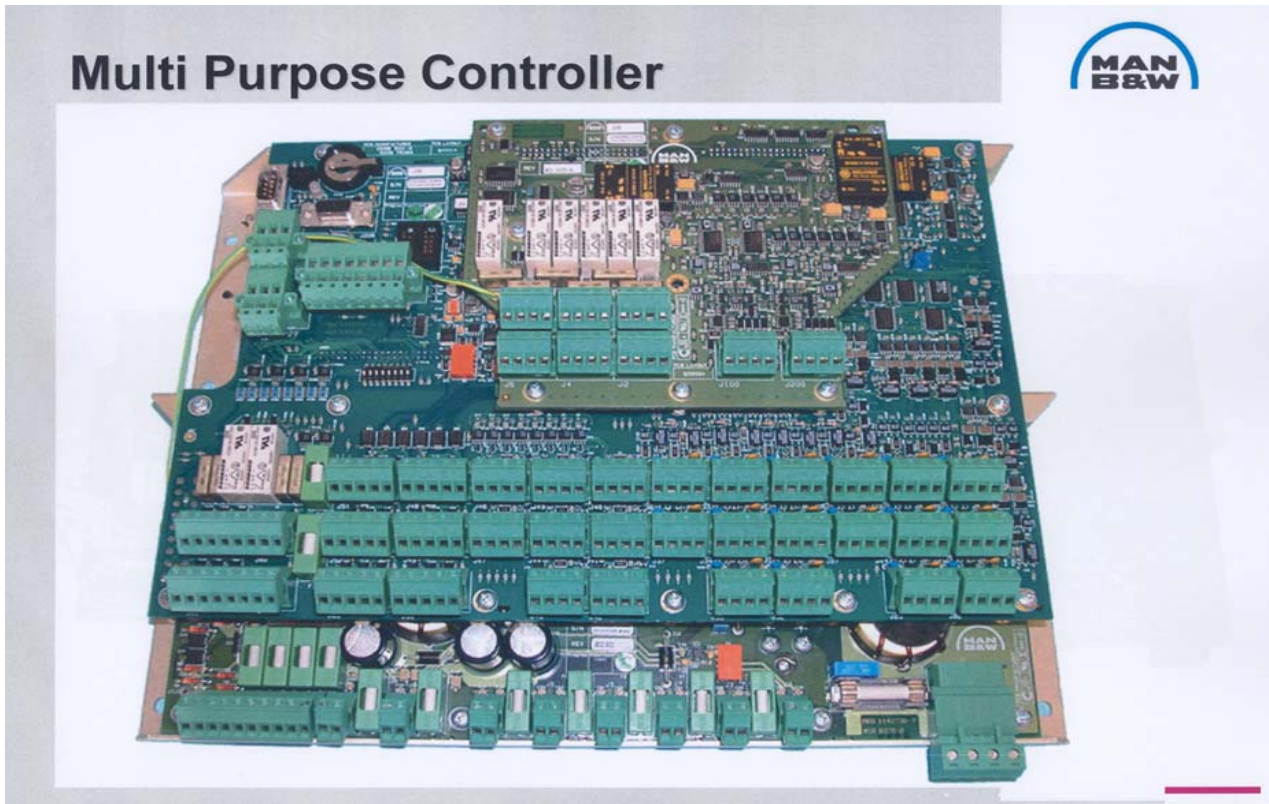


12 Cylinder engine: bed with crank-shaft.



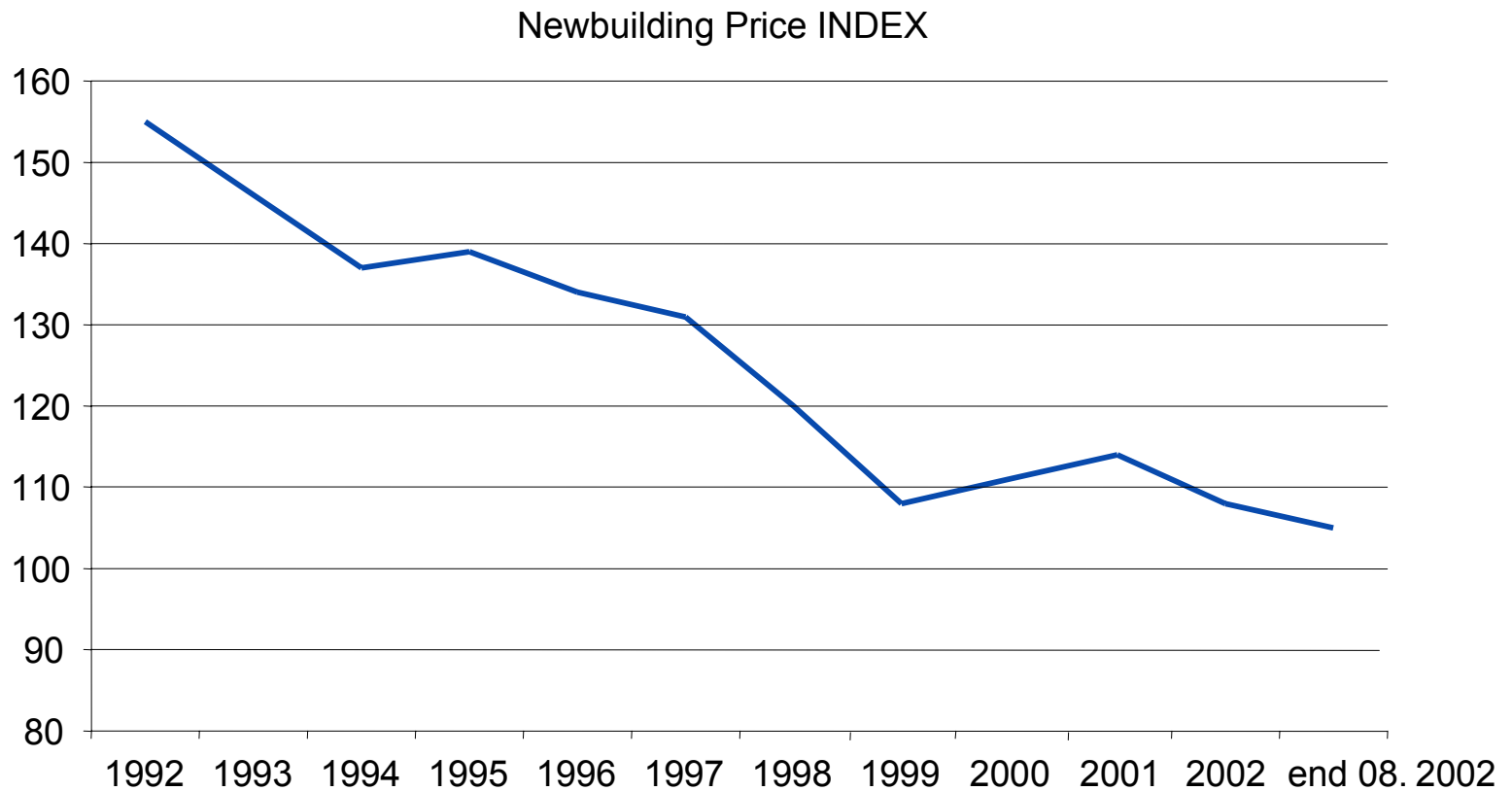
- 12 Cylinder MAN / B&W:
24,6 m bed-plate with 160 t crank-shaft
- 68 650 kW (93 360 PS)
- newbuilding price for 1 kW propulsion power
 - ▶ 1993 : 250-260 US\$
 - ▶ 2003 : 130 US\$
- share of the engine of total newbuilding price 1993/2003 = stable with 10%

This has to be checked by the class.



But: NEWBUILDING PRICES

(IUMI 2002 – J.-B. Raoust)



Summary No. 1.

- Hull markets are much more dominated by capital market influences than ever before (capacity)
- Since 1997 the hull market has lost technical UWR profitability due to oversupply of capital
- At present rate indices do not indicate market profitability
- On the demand side "globalisation" has lead our clients to become more and more effective, especially cost effective
- A "global" demand side meets with a traditional "local/national" market or an individual supply side of hull underwriters
- A fair question of a Chairman:
„Would you put private money into this line of business?“

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3. Basics of risk

3.1. Basics of risk.

In science the term "risk" R is defined as a mathematical function of probability P and the size S of an undesired occasion or a cost factor.

$$R = P * S.$$

Example $R = 2/360 * 10.000 = 56$

For hull business we can diversify risks between

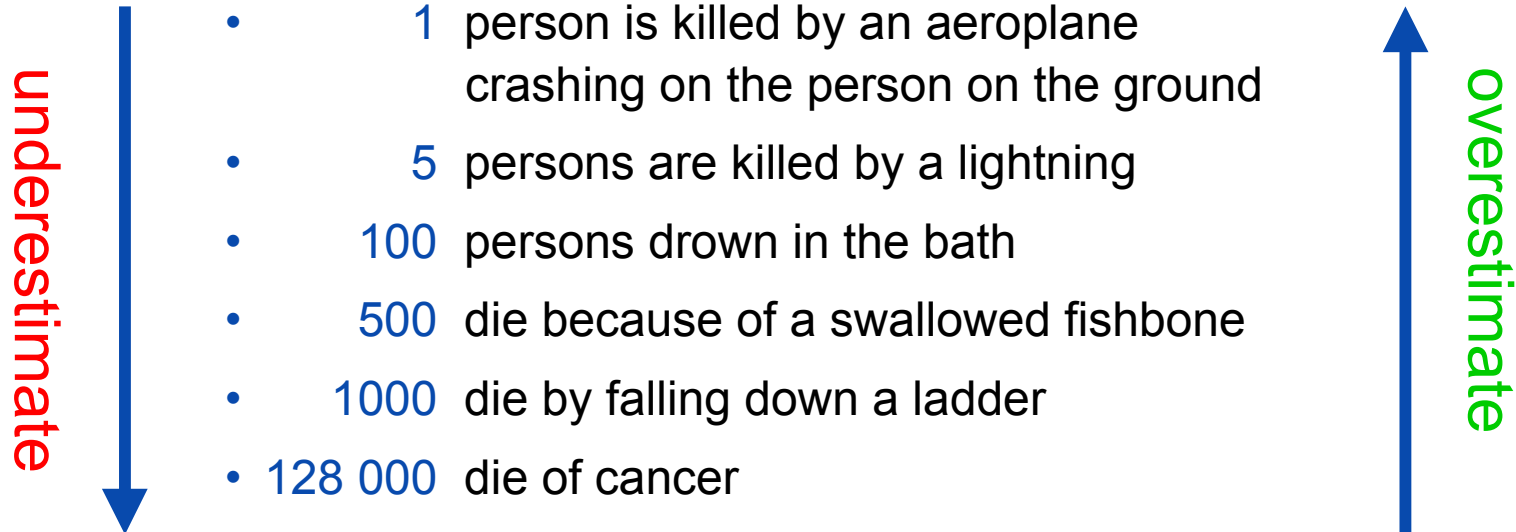
- Risks originating from natural influences like weather, storms, natural disasters
- Risks from human beings like trade patterns, technical progress or economic and/or legal developments, terror etc.

3.2. Basics of hull calculation.

- A classical calculation of a hull risk consists of (example!)
- A total loss rate = (value based premium factor)
Example: value 10 Mio., total loss factor 1%, total loss premium 100.000 currency units
- A rate or premium factor for partial damage = (measurement based)
Example: 1.000 fdwt , premium 1 currency unit per fdwt, premium 1.000 currency units
- Summa: 100.000 c.u. plus 1.000 c.u. = 101.000 c.u. or a premium rate of 1,01 %
= (101.000 c.u. divided by value of 10 Mio. c.u.)
- ocean hull premiums are based on a value factor “at risk” and a mathematical risk factor (rate) - where do they originate from ?

3.3. Risk - the “subjective risk feeling”.

Among 50 Million Germans per year

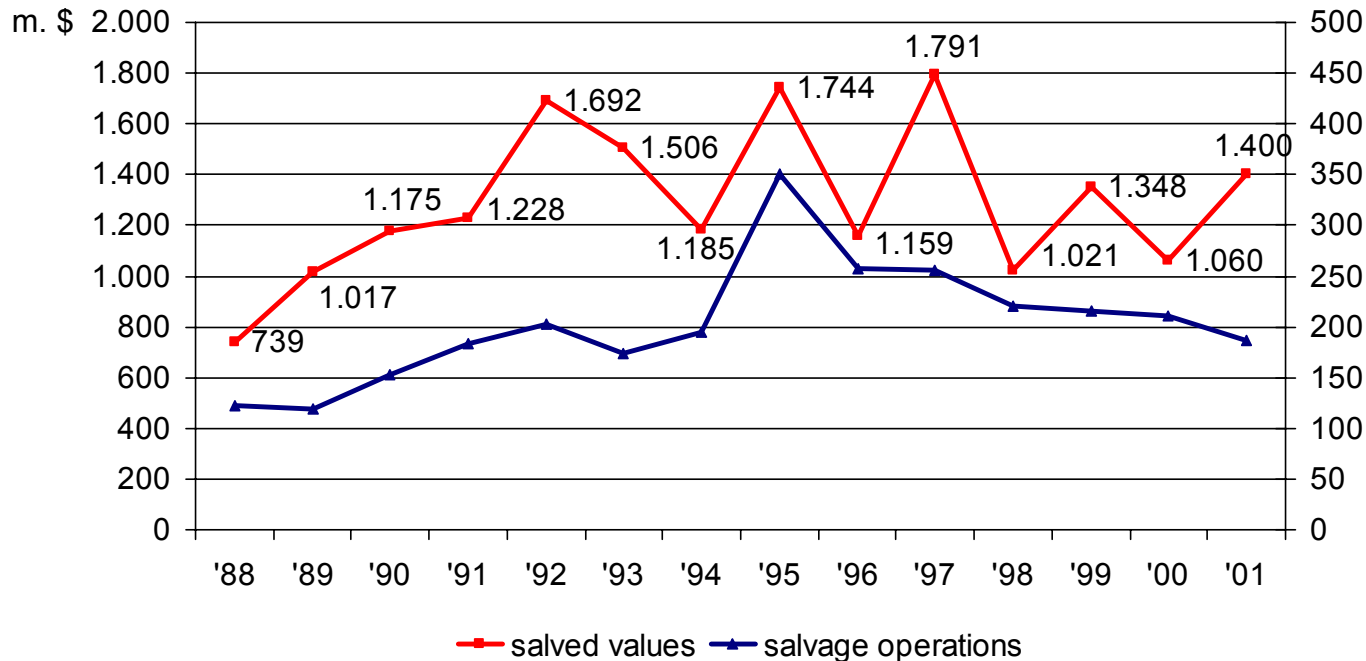


3.4. Risk feeling and statistical truth:

Survey of Salvage Remuneration 1988-2001.

Total salved values
all „no cure - no pay“ contracts

Number of salvage operations
all „no cure - no pay“ contracts

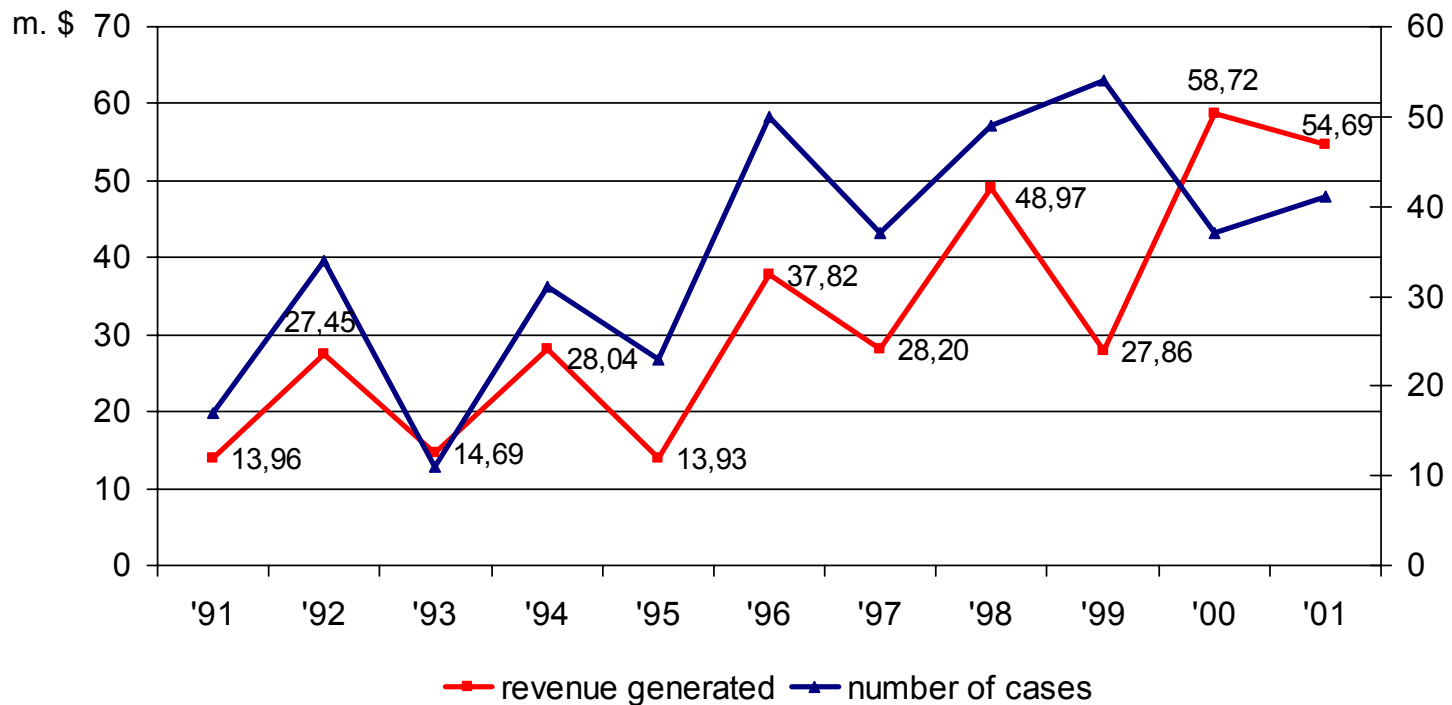


3.4. Risk feeling and statistical truth:

Statistical Survey of Wreck Removals 1991-2001.

Revenue generated
\$ millions

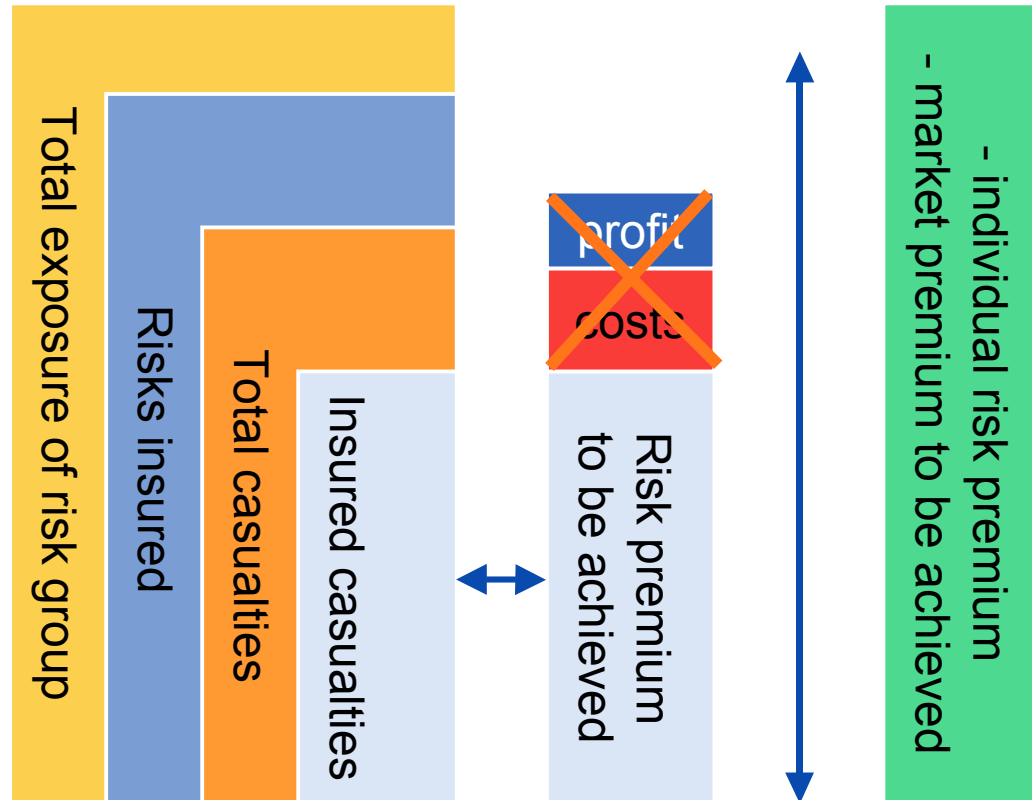
Number of cases



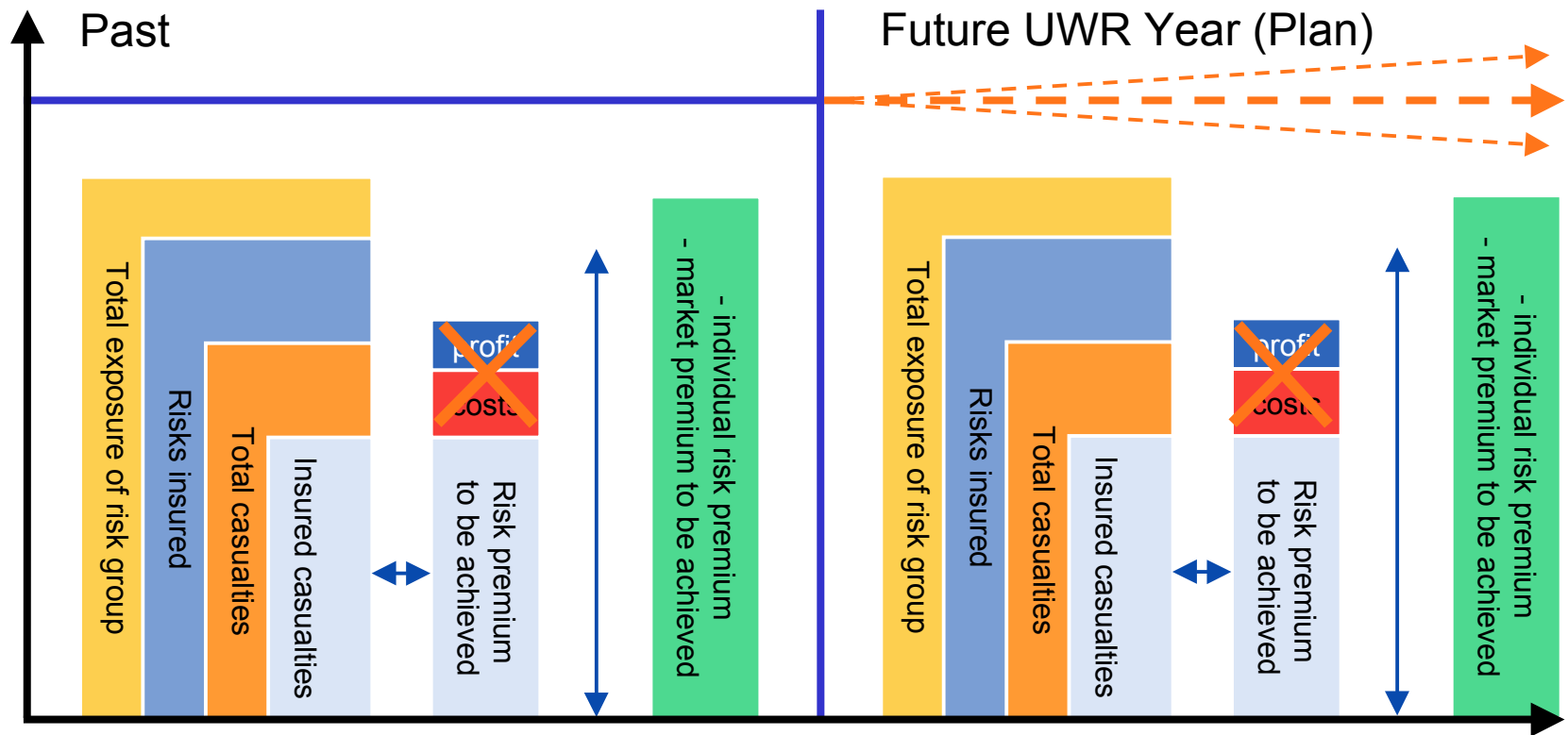
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4.1. A risk plan – business planning – basics.



4.2. A risk plan – business planning – basics.



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5.1. Total exposure ...

The world fleet 1993 - 2003.

+ 13% in number , + 23% in total and + 8 % average dwt.

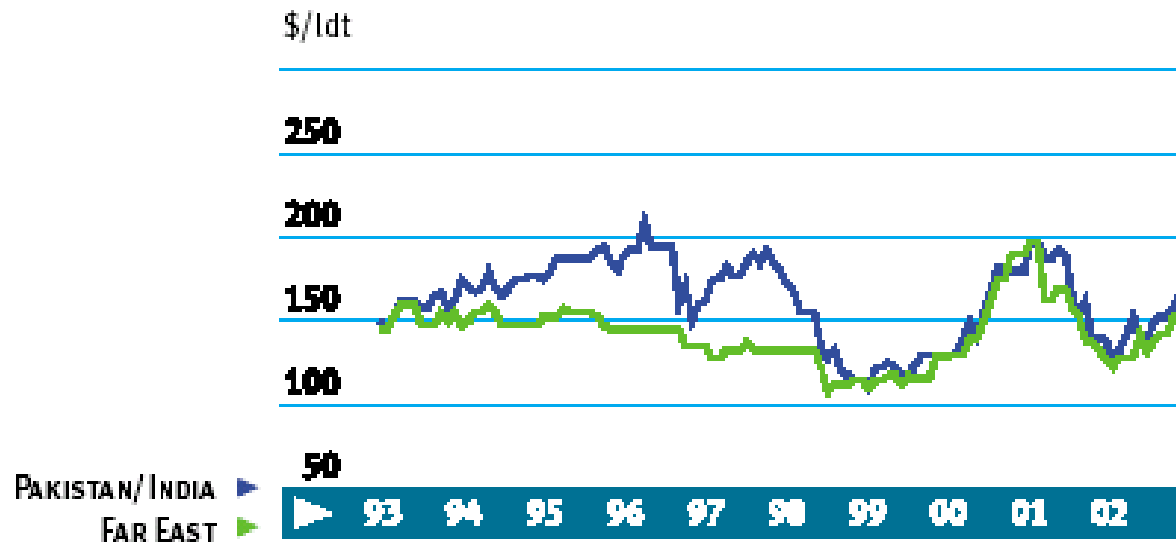
Total exposure of risk group

| | | 1993 | | | 2003 | |
|---------------------------------|-------------|--------|---------|-------------|--------|---------|
| | | number | average | | number | average |
| total dwt | 662.553.000 | 34.743 | 19.070 | 816.384.000 | 39.415 | 20.713 |
| oil tankers | 267.491.000 | 6.137 | 43.587 | 305.248.000 | 7.397 | 41.266 |
| chemical tankers | 7.292.000 | 1.117 | 6.528 | 8.334.000 | 1.290 | 6.460 |
| liquid gas tankers | 12.359.000 | 887 | 13.933 | 19.594.000 | 1.120 | 17.495 |
| bulk carriers | 201.493.000 | 4.608 | 43.727 | 284.066.000 | 5.970 | 47.582 |
| obo carriers | 35.930.000 | 344 | 104.448 | 12.789.000 | 183 | 69.885 |
| container ships | 31.578.000 | 1.339 | 23.583 | 83.744.000 | 2.905 | 28.828 |
| general cargo ships - all types | 102.430.000 | 19.367 | 5.289 | 101.002.000 | 19.149 | 5.275 |
| passenger ships (gt) | 3.980.000 | 944 | 4.216 | 5.856.000 | 1.401 | 4.180 |

5.2. Total exposure ...

The world fleet 1993 - 2003 and price indicators.

DEMOLITION PRICES



38 THE PLATOU REPORT 2003

6.1. Risk insured – „soft-facts“.

Risks insured

IUMI 2002:

Jean-Bernard Raoust, BRS
Shipping and Shipbuilding markets

- world trade has grown continuously
- world fleet has grown continuously
- shipping trade and therefore shipping risks influences are multiple

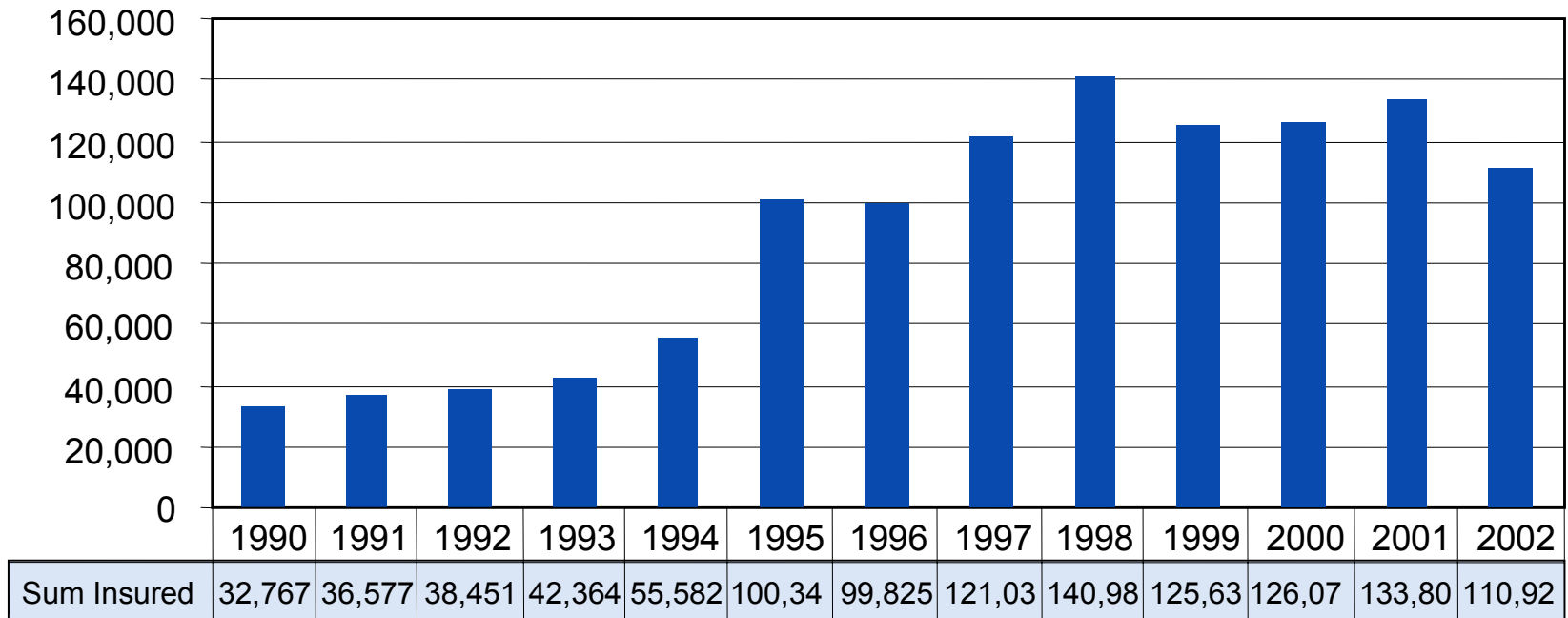


6.2. Risks insured - "hard-facts" see as example:

Norwegian Marine Insurance Statistics. As of 31.12.2002.

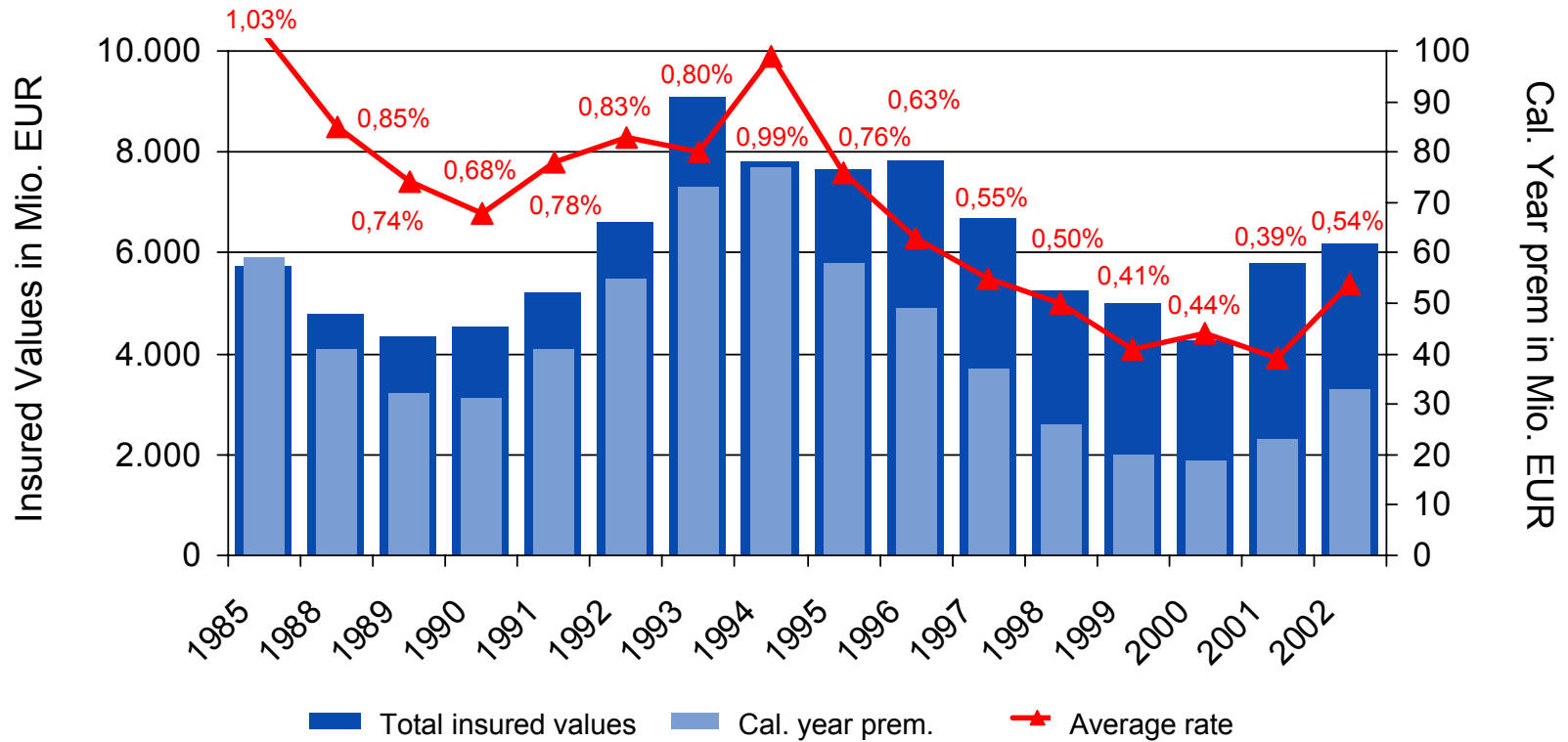
in m. USD

Total Sum Insured per Underwriting Year



6.3. Risks insured - "hard-facts" see: *German Calendar Year Statistic.*

Average rate – prem. income based on Cal. Year Stat. 31.03.2003



6.4. Total risks insured ...

- *Value of the world fleet?*

Invested money 180 or 380 billion US\$?

- The fleet insured with CEFOR members
 - 235 millions FDW
- Insured values CEFOR - 110 Billion US\$
- In relation to World fleet of 835.000.000 tdw
- Might lead to a factor of maybe 3,5

Value of the insured world fleet 380 Billion US\$?

Plus additional exposure factors : What about additional collision liabilities, sue and labour etc.?

6.5. Change of risks ...

...indicated as per CEFOR Report 2002?

| CEFOR Report 2002 | 1995 | 2001 | |
|----------------------|---------|---------|------|
| Number of vessels | 4.996 | 5.463 | |
| (F) dwt millions | 256 | 295 | |
| number of claims | 1.401 | 1.205 | -14% |
| average size (F) dwt | 52.585 | 56.521 | 7% |
| age | 13,2 | 13,8 | |
| value US\$m | 212.320 | 173.294 | -18% |
| net premium USD | 123.752 | 44.485 | |
| claim US\$ | 68.692 | 52.784 | -23% |
| claim frequency | 0,32 | 0,25 | -22% |
| loss ratio (%) | 56 | 111 | |

6.6. Change of risks ...

checked simply according to „payback periods“?

| | Sample fleet |
|--|--------------|
| total fleet value | 10.000.000 |
| total fleet premium gross | 500.000 |
| number of vessels | 5 |
| average premium per vessel | 100.000 |
| average fleet rate | 5,0% |
| average value per vessel* | 2.000.000 |
| payback period in years for 1 TL average vessel* | 4,00 |
| the premium of how many vessels - average type - claims free - do we need to pay for one TL of an average vessel?* | 20 |

*to be calculated
automatically

6.7. „Payback periods“ - containers (simplified).

| | 1993 | 2003 | |
|---|-------|-------|-----------------------|
| fleets | 4 | 4 | Average tdw increased |
| total fleet value in Mio. US\$ | 1.852 | 5.234 | from 30.000 |
| number of vessels | 61 | 168 | (24.000 world fleet) |
| average insured value per vessel in Mio. US\$ | 30 | 31 | to 45.000 |
| the premium of how many vessels average type - claims free - do we need to pay for one TL average vessel? | 183 | 239 | (29.000 world fleet) |
| | | | +31% |

45.000 tdw / 3.500TEU = only 769 world fleet / 269 OECD

6.8. Payback periods - passenger vessels.

| Passenger ships | 1 fleet 1982 | 1 fleet 1992 | 3 fleets 2003 |
|--|--------------|--------------|---------------|
| total fleet value Mio. US\$ | 101 | 1.900 | 21.000 |
| number of vessels | 3 | 16 | 94 |
| average insured value per vessel Mio. US\$ | 34 | 119 | 223 |
| the premium of how many vessels - claims free - do we need to pay for one TL average vessel? | 140 | 232 | 653 |

There are only 1.321 passenger vessels with an average of 1.148 dwt

6.9. Change of risks ...

according to individual stats? (1) (fictitious risk).

| UWR years | premium | Claims paid | reserves | Loss ratio |
|---------------|---------|-------------|----------|------------|
| 1 | 514 | 200 | | |
| 2 | 412 | 400 | | |
| 3 | 570 | 350 | | |
| 4 | 808 | 50 | 50 | |
| total 4 years | 2.304 | 1.000 | 50 | 46% |

6.9. Change of risks ...

according to individual stats? (2)

| UWR years | No of risks | Insured value | premium | Claims paid | reserves | Loss ratio |
|--|-------------|---------------|---------|-------------|----------|------------|
| 1 | 10 | 130.000 | 514 | 200 | | |
| 2 | 8 | 112.000 | 412 | 400 | | |
| 3 | 10 | 179.500 | 570 | 350 | | |
| 4 | 14 | 244.500 | 808 | 50 | 50 | 46% |
| total 4 years | 42 | 666.000 | 2.304 | + 1.000 | + 50 | |
| | | | | | ↓ | |
| “underwriting surplus” | | | | | 1.254 | |
| risk rate UWR year 4 for renewal | | | 808 | 244.500 | 0,33% | |
| risk rate in relation to historical exposure | | | 1.254 | 666.000 | 0,19% | |

6.10. Risks insured - summary.

Risks insured

Do we take good care of our basic risk information?

Summary No. 2:

Although the ocean hull business has become a global business, market-wide we do not know (or it is not public or transparent)

- the insured values, numbers, sizes of vessels etc.
- the specifics of the world fleet insured
- or at least ... of the fleets insured in the relevant markets.

7. Changing nature of risk:

Total casualties - insured casualties.



- 7.1. Major casualties 2002 - the lessons
- 7.2. Insured casualties - long term view -
extracted container vessel casualties only
- 7.3. Insured casualties - long term view -
builders.
- 7.4. Partial claims
- 7.5. Summary

7.1. Major casualties 2002 – the lessons.

Major casualties hull above 5 Mio. US\$ for 100%.

| Major casualties hull above 5 Mio.US\$ for 100% | vessels | Possible amount of claim in Mio. | Nature of claim | Date of loss |
|---|---------------------|----------------------------------|----------------------------|--------------|
| 2002 | Jolly Rubino | | | 10.09.02 |
| 2002 | Hidir Bey | | capsize | 23.09.02 |
| 2002 | Hual Europe | | hurricane, fire | 01.10.02 |
| 2002 | Diamond Princess | | fire | 01.10.02 |
| 2002 | Eiwa Maru | | collision with Ever Reward | 05.10.02 |
| 2002 | Limburg | | terrorism | 06.10.02 |
| 2002 | Tai Ping | | grounded | 08.10.02 |
| 2002 | Seaspan Rigger | | capsized | 22.10.02 |
| 2002 | Hanjin Pennsylvania | | fire - CTL | 11.11.02 |
| 2002 | Windsong | | fire | 01.12.02 |
| 2002 | Matten | | missing | 09.12.02 |
| 2002 | Tricolor | | collision with Cariba | 14.12.02 |
| 2002 | CGG Mistral | Total approx. 600 Mio.US\$ | fire | 20.12.02 |
| | | | | |

7.2. Insured casualties – Containers.

long term view - selected major container vessel casualties.

| 1991 | Bremen Senator | | struck |
|------|---------------------|----------------------------|----------------------|
| 1993 | Christian M. | | |
| 1994 | Alexandria | | TL |
| 1995 | DSR America | | collision |
| 1996 | Nedlloyd Recife | | TL |
| 1997 | Contship France | | calcium hyperchlorid |
| 1997 | Tiger Force | | TL |
| 1998 | Aconcagua | | calcium hyperchlorid |
| 1998 | Zim Piraeus | | collision |
| 1999 | CMA Djakarta | | calcium hyperchlorid |
| 2000 | DG Harmony | | calcium hyperchlorid |
| 2002 | Hanjin Pennsylvania | | fire - CTL |
| 2002 | Matten | | missing |
| | Vicartindur | | CTL |
| | | Total approx. 600 Mio.US\$ | |

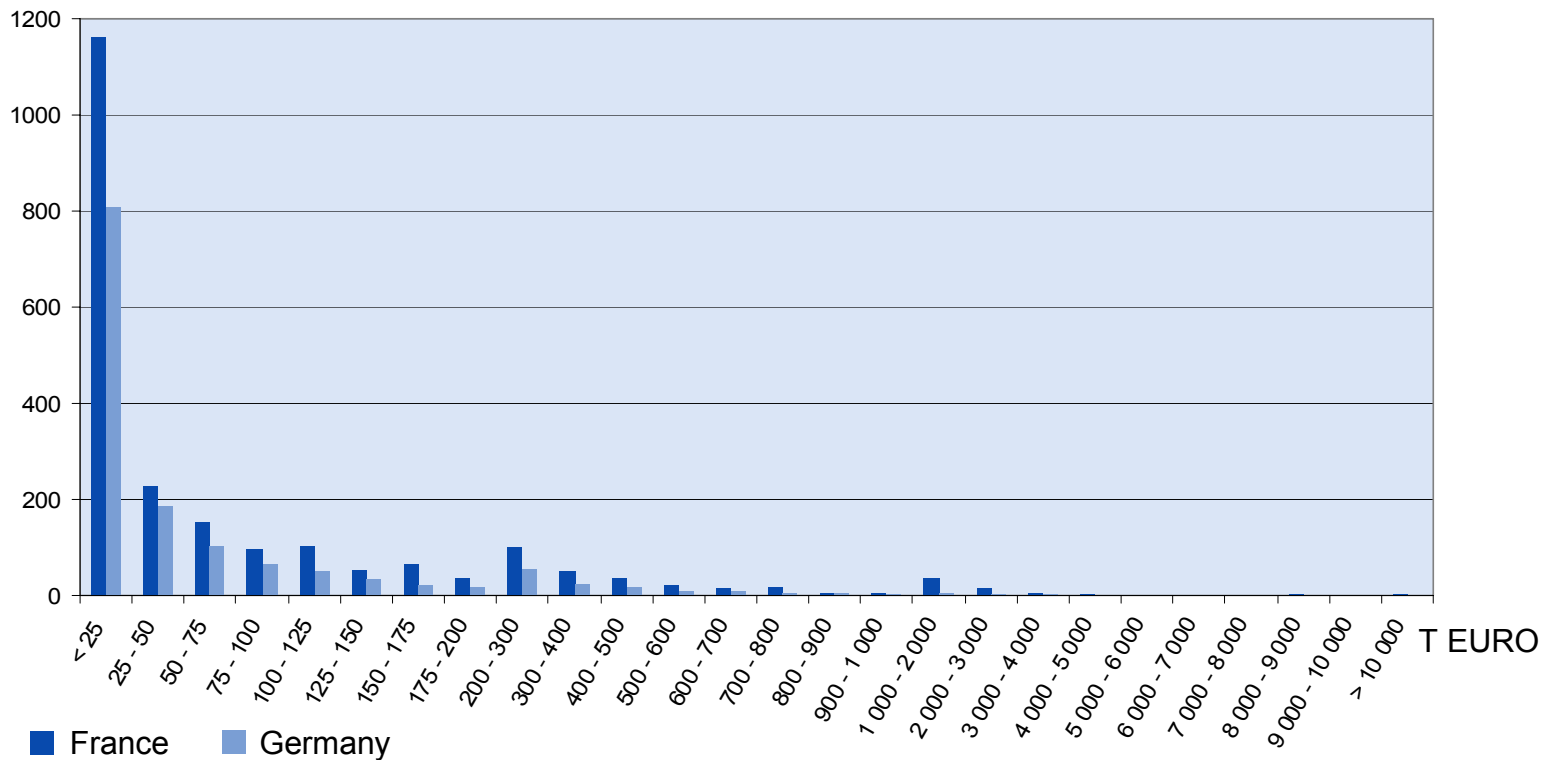
7.3. Insured casualties - long term view - builders.

IUMI Bern 1992 - extract of report on shipyards casualties

- 1976 France, fire, US\$ 12.000.000
- 1981 "Walrus" - Netherlands, DFIs 105.000.000 - fire
- 1981 Taiwan, fire, US\$ 17.500.000
- 1986 "Walrus" - Netherlands, two losses total DFIs 16.000.000
- 1987 Norway - NKr 119.000.000 - CTL following fire
- 1988 Taiwan - US\$ 14.400.000 - fuel injection pumps
- 1990 "Monarch of the Seas" - France - FF 570.000.000 - fire
- 1991 Keelung - GBP 6 Mio
- 1991 Keelung - GBP 11.331.000 - capsized
- 1991 Avondale - GBP 10.500.000
- 2002 Diamond Princess - around 250 Mio. US\$ (?)

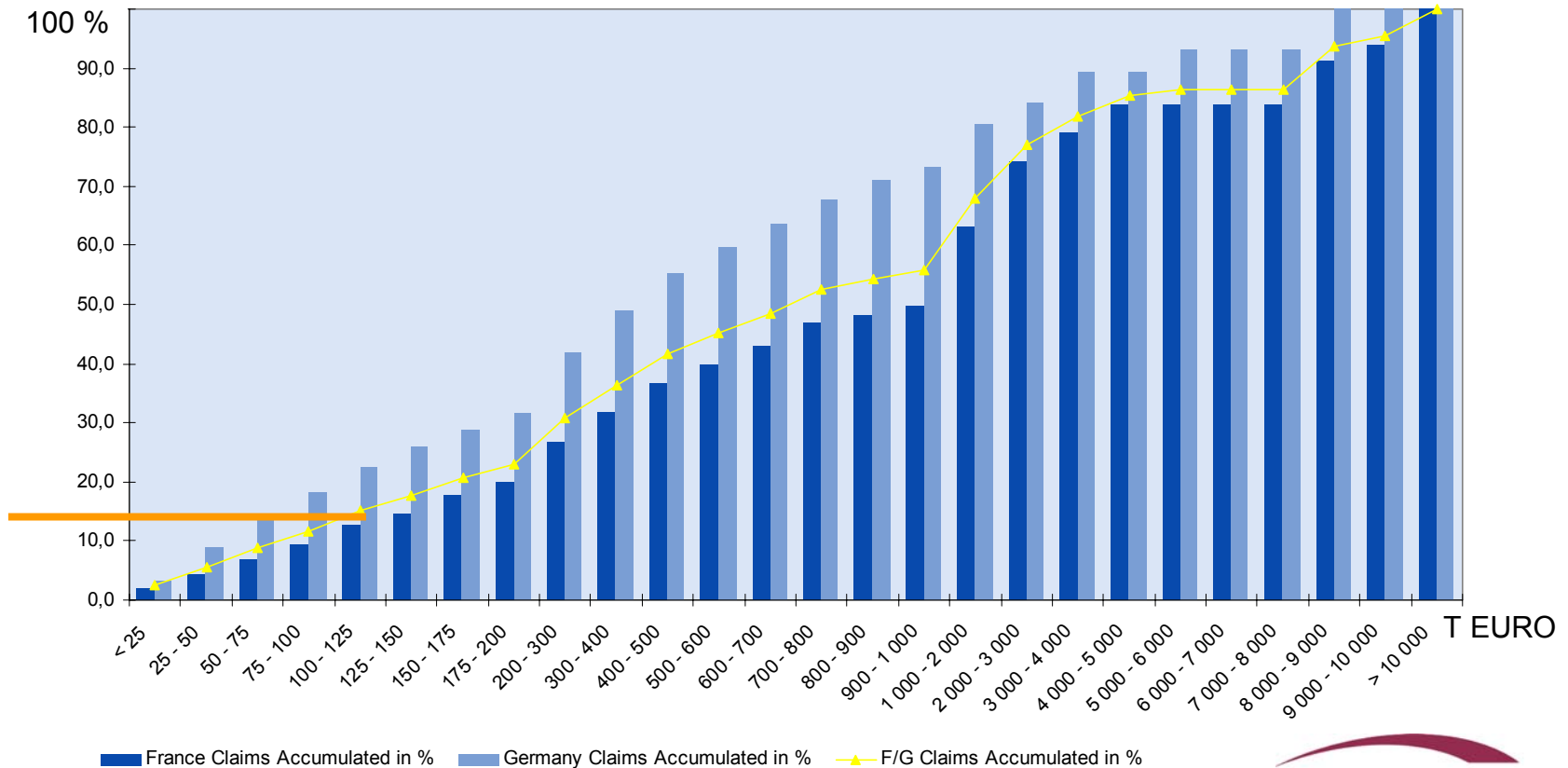
7.4. Partial claims (1)

Number of Files 1998-2001 France/Germany



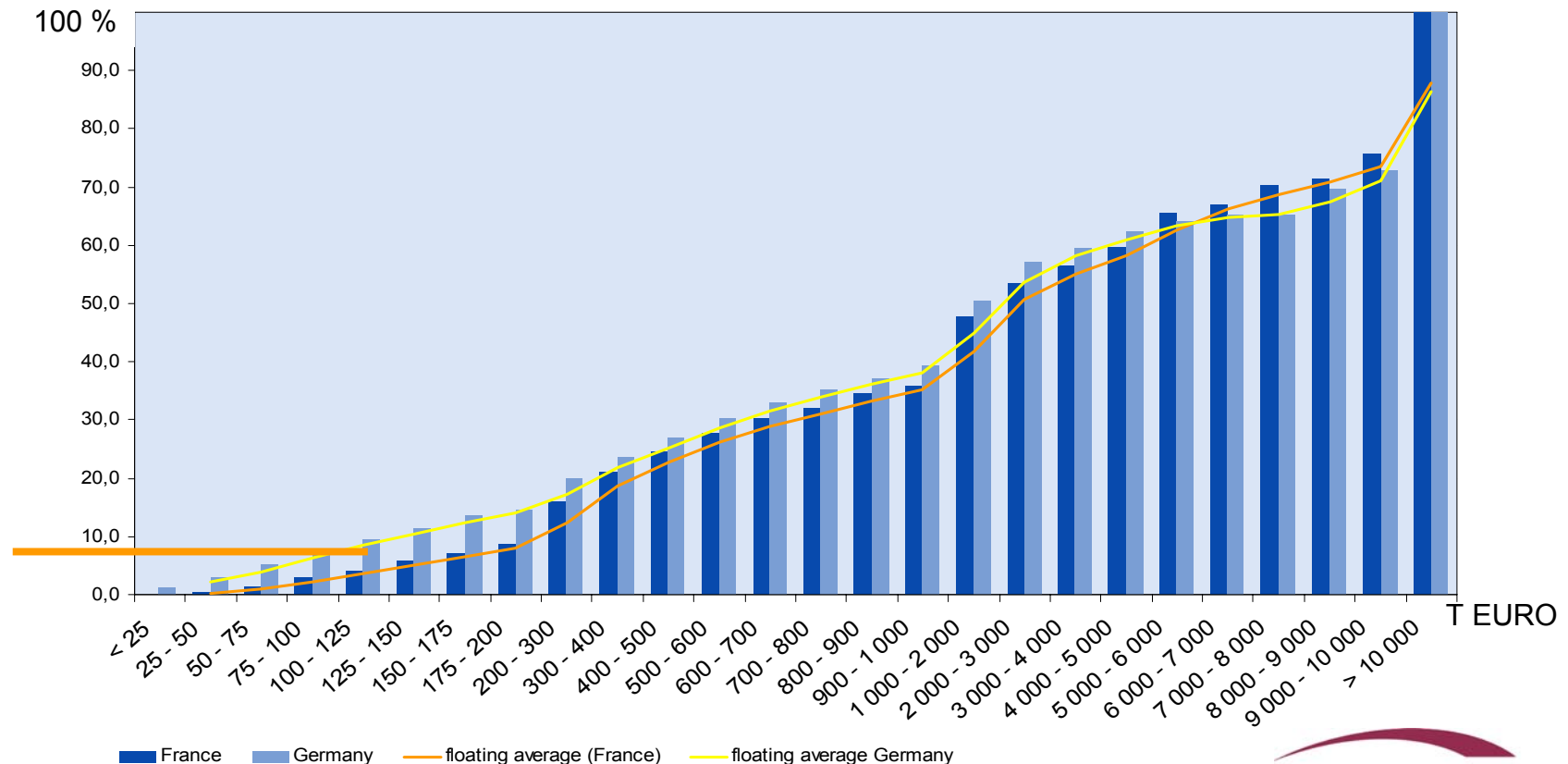
7.4. Partial claims (2)

Accumulated amount of claims per band 1998-2001 France/Germany



7.4. Partial claims (3)

Accumulated amount of claims per band 1998-2002 France/Germany



7.5. Insured casualties - summary (1).

Insured casualties

Summary No. 3:

The year 2002 reminded us that there is a tremendous change of risk on the casualty scenario baring a risk for us as underwriters:

- Even “quality assureds” can be struck by major casualties,
- a series of very expensive casualties
- can happen within a short period of time
- and carry a financial risk for the risk carriers – with an unbalanced book, an insufficient reinsurance protection or an insufficient capital base.

7.5. Insured casualties - summary (2).

Insured casualties

Summary No. 4:

- deductibles do not pay for major casualties - premium does

Summary No. 5:

- ... as reliable long term statistical data of the world-wide marine hull market are not accessible
- Any reliable statement about the changing nature of risk should not be given presently
- Presumably there are fewer insured claims in number but they are more expensive in monetary terms

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9.1. Anti trust law - a legal framework.

Article 81 (1) All agreements between undertakings, decisions by associations of undertakings and **concerted practices** which may affect trade between Member States and which have as their object or **effect** the **prevention, restriction or distortion of competition** within the common market, and in particular those which:

- a) directly or indirectly fix purchase or selling prices or any other trading conditions;
- b) limit or control production, markets, technical development, or investment;
- c) share markets or sources of supply;
- d) apply dissimilar conditions to equivalent transactions with other trading parties, thereby placing them at a competitive disadvantage;
- e)

9.2. EU - Commission Regulation No 358/2003.

On 27 February 2003, the European Commission adopted a new Regulation exempting certain categories of agreements, decisions and concerted practices in the insurance sector from the application of Article 81 (3) of the Treaty.

The following areas (among others) are covered by the exemption:

- The common establishment and distribution of calculations of average costs covering a specified risk in the past and of tables (mortality tables, tables showing the frequency of illness, invalidity and accident)
- Common studies on the impact of future claims in connection with a given risk or risk category
- The joint establishment and distribution of nonbonding standard policy conditions for direct insurance
- The joint establishment and distribution of nonbonding models illustrating the profits to be realized from an insurance policy

9.3. EU - Commission Regulation No. 358/2003.

Art.1 Exemption

Pursuant to Art. 81 (3) of the Treaty and subject to the provisions of this Regulation, it is hereby declared that Art. 81 (1) of the Treaty shall not apply to agreements entered into between two or more undertakings in the insurance sector with respect to:

(a) the joint establishment and distribution of:

- calculations of the average cost of covering a specified risk in the past;
- in connection with insurance involving an element of capitalisation...;

(b) the joint carrying-out of studies on the probable impact of general circumstances external to the interested undertakings, either on the frequency or scale of future claims for a given risk or risk category or on the profitability of different types of investment, and the distribution of the results of such studies;

9.4. EU - Commission Regulation No. 358/2003.

Chapter II, Article 3 deals with **Calculations, Tables and Studies**.

Calculations and tables have to be

(a) based on the assembly of data, spread over a number of risk-years chosen as an observation period, which relate to identical and comparable risks in sufficient number ...

- the number of claims during the said period,
- the number of individual risks insured in each risk year of the chosen observation period
- the total amounts paid or payable in respect of claims arisen during the said period
- the total amount of capital insured for each risk year ...

(b)...breakdown is ...actuarially adequate

(c) do not include ... elements for contingencies, income deriving from reserves, administration or commercial costs...

... may not identify the insurance undertakings concerned or the insured party, ... have to be non-binding and be made available on reasonable and non-discriminatory terms...

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10. Proposals - Expectations.

IUMI has the chance to promote and develop for the hull market

- Clarify the legal situation with respect to cartel law (which statistical formats can be used, i.e. UWR years, types of vessels, major claims listings?)
- Introduce statistical formats in accordance with to EC 358/2003
- (Any similar situation in US and Asia?)
- Nominate a neutral (not an individual market body) to take custody over this project
- Invite associations or market players to participate
- Make stats available

Overview - The end.

A press release?

New drive for global marine statistics

A NEW initiative to collect global statistics on the marine insurance market is being mounted by IUMI.

The move comes after attempts by the association to compile such information were abandoned, due to problems in assembling comparable information from the different countries which are members of IUMI.

In addition, there was concern that in some countries the marine underwriting associations do not represent the whole of the local market, resulting in the global statistics being incomplete.

A decision has been reached, however, to press ahead with the move on the basis that the quality and quantity of the information collected can be refined over time.

Initially, IUMI is looking to collect figures which will indicate annual gross

premiums coming from direct blue water hull, inland hull, cargo and offshore business.

The figures will be compiled on an accounting year basis, but it is hoped they can be moved on to an underwriting year basis as the initiative is developed.

As such the aim is that over a number of years a comprehensive set of annual statistics can be developed on the global marine insurance market which will reflect at least 95% of the business being written worldwide.

The initiative is expected to benefit from various moves currently under way in the major underwriting centres around the world to develop more comprehensive databases as part of the general drive which is being seen to improve underwriting standards and controls and identify and contain market costs.

Lloyd's List 22nd September 1993.

The initiative is expected to benefit from various moves currently under way in the major underwriting centres around the world to develop more comprehensive databases as part of the general drive which is being seen to improve underwriting standards and controls and identify and contain market costs.

“Famous last words” :

Economic progress will continue to challenge hull underwriters to cover more risk for less money.

Only precise statistical data will show to us the changing nature of risk .

We have lost ten years - it is never too late to start.

Thank you for your patience.