



Analysis of Major Marine Claims

Report By: **UK P&I Club**

The Largest P&I Club of World Fleet

How is maritime risk changing?

The UK P&I Club has published a comprehensive analysis of all major claims (those amounting to more than US\$100,000) filed by its Members between 1987 and 1997. Club membership accounts for around 20% of the world's deepwater fleet. Consequently, this project provides a uniquely representative, global picture of maritime risk.

The overriding messages

Risk is, of course, inherent in our industry and can never be wholly eliminated. However, a clear message of the report is that the application of sound risk management principles could do much to reduce the incidence of claims. But before shipowners can put a realistic risk management plan together, they need to be able to identify, assess and prioritize the main risks. This Analysis, like its predecessors, should help.

The change in risk management focus is already evident. A decade ago, the maritime world concentrated its loss prevention efforts on technical matters, such as the watertightness of hatchcovers. Now it has become generally accepted that such issues are only part of the story and that the root cause of the great majority of claims is human error. Further confirmation of this fact is provided by the latest figures which amount to a convincing argument for placing the emphasis on education and training in loss prevention.

Some key findings

- **Major claims as a percentage** of all claims have grown from 64% to 72% by value in the ten years under study (although, by number, major claims represent only 2% of the total)
- **Major claims are increasing** in their **individual value** but reducing in number
- **Cargo and personal injury** respectively are the two most frequent types of major claims
- There has been an increase in **pollution** claims since 1993, against the general trend and in contrast to the previous two years when they were in decline
- **Human error** accounts for 58% of major claims
- **Shore person error** is noticeably increasing
- **Pilot error** accounted for US\$100m third party and collision claims during the 10 years
- 45% of **personal injury** claims are due to crew error but there has been a significant reduction in both their value and number.
- **The US** accounts for 20% of major claims but their number and value are falling significantly
- A third of major claims occur in **USA, Netherlands, Japan and Italy**
- **Bulk carriers** between 10,000 and 30,000gt account for 68% of bulk carrier claims and 72% of their value. However, structural failure on these ships is decreasing
- There has been a two-thirds reduction in **ship failure** claims during the 90s
- On **passenger and containerships**, structural failure rates are increasing
- Most structural failure claims relate to cargo; the most common incident is **hatchcover failure** and 10-20 year old ships are most prone
- There has been a dramatic decrease in **dry bulk and crude oil** cargo claims
- The value of **container cargo claims** has nearly doubled since 1989
- **Wet damage** accounts for 25% of cargo claims
- The trend in **containers lost overboard** is worsening

What causes major claims?

The report summarizes the main causal trends in cargo, property, pollution, collision and personal injury claims and concludes that human error, though declining marginally, continues to be the major challenge, accounting for 58% of major claims. Crew error is reducing but pilot and shore person error are on the increase. Ship failure presents a much more optimistic picture with a two-thirds reduction.



Shore person error is identified as a continuing major problem, particularly in respect of cargo claims where the trend is worsening. Ship failure, in spite of the improvements recorded, is also a significant factor in cargo claims, with hatch cover failures alone being implicated in US\$34m worth of claims in the tenyear period.

Pilot error is another reason for concern. For example, nearly a third of all major property claims (around US\$10m pa) were attributable to this. Deck officer errors have shown no significant trend downwards. However, crew error, an above average cause prior to 1992, has since fallen and now follows the trend for all major claims. While this may well partly reflect the even greater emphasis given to crew training in STCW 95, there is no cause for complacency; crew error continues to cause 45% of all personal injury claims, highlighting the false economies of cost saving strategies that target crewing.

Principal Causes

Deck Officer Error	25%
Crew Error	17%
Shore Error	9%
Structural Failure	9%
Equipment Failure	9%
Under Investigation	6%
Mechanical Failure	5%
Pilot Error	5%
Eng. Officer Error	2%
Other	12%

Where do major claims occur?

Countries

In the ten years under study, major claims have occurred in 75 countries but just 10 of these have accounted for half the total claims value. (USA, Japan, Netherlands, Italy, UK, South Korea, Belgium, Brazil, Germany, China) It is interesting to note the bias that some of these ports have to certain categories of claim: the Netherlands (cargo), Belgium (property), South Korea (pollution), China (collision), and USA (personal injury). Nearly 40

twice as many as cargo claims. Having said that, it is worth noting that the total number of USbased claims is dropping and this includes personal injury claims.

Nevertheless, the average value of such claims is increasing; eight individual injury claims exceeded US\$1.6m whereas no cargo claims were this high. Certain classes of ship seem to be associated with claims in particular countries, no doubt large

China, dry cargo ships in Italy and Germany, tankers in Italy, South Korea and Brazil, containerships in Germany, Reefers in Belgium, Japan and South Korea and rig & supply ships in the USA and UK.

Ports

Major claims have arisen in more than 400 different ports. This would tend to indicate that no one port should become complacent when it comes to risk analysis as clearly, major claims can occur anywhere. However, the five ports, which witnessed the most claims, are Rotterdam, Antwerp ,new Orleans, Houston and Singapore . Each of these, except New Orleans, showed an above average occurrence of cargo claims. These represented the biggest single risk in Rotterdam, Antwerp and Houston. Property damage claims, though generally quite low in number, were perceptibly highest in Antwerp where, interestingly, pilot error accounted for the largest value of claims. Both facts possibly reflect the difficult approach to that port.

Pollution claims in ports are gratifyingly low, even in traditional bunkering centers , a tribute to the sophisticated controls in place at these developed ports.

Among individual port related aberrations



worthy of investigation are:

- The high proportion of collision claims in Singapore (26% of all major claims there)
- The exceptionally high incidence of personal injury claims in New Orleans (51%) and the surprising fact that the percentage of these that are noncrew related is more than three times higher than the Club average
- The unexpectedly high number of claims involving bulk carriers in New Orleans and Houston, compared with Rotterdam and Antwerp
- The high proportion (80%) of major claims in Rotterdam that are cargorelated

How do different ship types fare?

Bulk carriers

Bulk carriers produced a slightly higher percentage of claims (21%) than their representation in the Club entry (19%) would lead one to expect. The trend, like that of all major claims, is downward and the average value of bulk carrier claims is consistently below the trend. The part played by ship failure is slightly greater than with other ship types, human error is the main problem, accounting for 55% of claims. Medium sized ships of between 10,000 and 30,000gt account for 68% of claims by number and 72% by value even though these constitute only 60% of the Club bulker entry.

Dry cargo ships

The trend here follows the overall declining frequency trend although the average value of claims is rising. As in previous analyses, ships of between 10 and 20 years old are at greatest risk, accounting for 58% of claims, most of which are for cargo. Shore personnel error accounts for a particularly large proportion of these claims.

Tankers

Contrary to popular belief, pollution is not the most frequent type of major claim, although it is highest by value. Cargo claims are the most frequent, closely followed by personal injury. The most important causes are, in order of value, deck officer, crew and pilot error and structural failure. The highest risk ships are between 10 and 20 years old and between 10,000 and 100,000gt. The overall trend of tanker claims has been one of steady improvement since 1991.

Reefers

The incidence of major reefer claims (193 in the 10 years) is above trend. However, in spite of the sophistication of the equipment and the high value of the cargoes, the average values are not exceptionally high. Ships in the 59 year age band have a relatively poor record yet ships older than 20 years account for remarkably few claims. This suggests that younger ships may be victims of their comparatively complex technology in combination with undertrained personnel.

Passenger ships

Like bulk carriers, these ships produce more and higher value claims than would be predicted by their Club entry. The frequency of claims has been climbing since the late 1980s. Most are personal injury related. Passenger claims can be costly, reflecting consequential loss to typically high earning individuals. Higher risk ships are those older than 25 years and below four years which together accounted for 64% by number and 61% by value.

Containerships

The trend since 1993 has been a deteriorating one. The increase in the number of serious cargo explosions and fires is worrying. Shore error is a greater problem than with any other ship type, causing 21% of all major claims compared with an allship Club average of 9%. Claims are concentrated within ships above 10,000gt and with a bias towards ships less than 10 years old.

Parcel carriers

The incidence of major claims has increased of late with cargo claims predominating at 56% by number, followed by personal injury claims at 15%. Ships between 10 and 20 years old account for half of all claims. Those below 6,000gt account for 43%.



Rig and supply boats

Claims have reduced since the late 80s. 83% of claims are crew injury related and 57% are caused by crew error.

What is the impact of ship failure?

Structural failure has seen the most dramatic improvement, peaking in 1990 then halving the following year.

Mechanical failure saw a similar effect, falling by almost a third in 1990. Although it rose somewhat in the following year, it is still significantly lower than in the late 80s. Equipment failure, too, has declined though it has yet to see such spectacular improvements as have structural and mechanical failure.

USA, Cyprus, Bahamas and Panama flags are particularly prone to structural failure claims, although the first two are showing signs of improvement. The Bahamas and Russian flags present reason for concern with a deteriorating record.

Ship failure most commonly triggers cargo claims. Of these claims a large proportion is attributable to hatchcover failures, largely in 10-20 year old ships of between 6,000 and 30,000gt, with those above 10,000gt the worst affected.

How significant is human error?

Three out of every five major claims are directly related to human error.

Why people go on making mistakes is a question which our data cannot adequately answer. However, the evidence is that even properly trained personnel can become careless and even reckless when responding to excessive commercial pressures or suffering from fatigue, discomfort, boredom or stress. Specific risk areas appear to be:

- Language problems in mixed nationality ships, and between ship and shoreside personnel, particularly when engaged in critical activities such as berthing and bunkering
- Confusion due to poor communication between master and pilot
- Fatigue resulting from smaller crews and shorter Turn round times in port
- Minor miscalculations leading to ship instability and consequent cargo loss
- Pride inducing crew to carry out tasks singlehandedly which should be executed with assistance
- Calculated risks by masters and officers responding to commercial pressures

Human error shows a pattern of incidence similar to that of ship failure, peaking in ships between 10 and 14 years old. The reasons are unclear.

The trends in the main categories of cargo claims are:

Cargo claims are by far the biggest drain on the Clubs resources, accounting for nearly 40% of all claims (27% by value).

Risk Category by Risk	
Cargo	27%
Personal Injury	20%
Pollution	19%
Property	16%
Collision	11%
Other	7%

- **Wet damage**
giving
- rise to some US\$26m Club claims over the 10 There has been no discernible worsening in this situation but no improvement either
- **Contamination**
- **Shortage**



- **Lost overboard**
- **Sinkings** worsening
- **Theft**
- **Physical damage**

Because of the contribution of structural failure in cargo claims, the question of flag becomes important. Panama, Cyprus and the Bahamas show a disproportionately high number of cargo claims, although Panama is clearly improving. Malta and Russia are deteriorating.

In general, as might be expected, it is the older ships that experience slightly more expensive claims, with the 1020 year band being a particular risk group. In newer ships the claims level is improving. Approximately 59% of cargo claims are incurred on tramp ships but there are signs of improvement in this group.

Although containers accounted for 14% of the claims, *containerships* do not emerge as a particular problem. The main risk area appears to be the carriage of containers on noncontainerships //