

# The Report



The Journal of The International Institute of Marine Surveying

September - 2011

## Australian Branch Opens for Business



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Forward	2	Japanese project aims to cut CO2 emissions by one third	24
IIMS Administration	2	Caption Competition	25
President's Address	3	Australian Report	26
The Cost of Damage	4	The Herreshoff S-Class	27
Report confirms effectiveness of FFR coatings	10	IIMS Marine Surveying Diploma – The Next Level	28
Simultaneous move marks record for Mexican forwarder Tradelossa	11	Full Day Hansard Transcript	29
IIMS is now an IMO book re-seller	15	Shipbuilding orders monthly	30
“Road to Modernization of Survey System”	16	What is an expert witness and how to start	32
Grasping shipping's Holy Grail	17	Expert Witness Immunity Is abolished	35
The (not so) happy life of the modern seafarer	20	Microbial growth in diesels and other fuels	37
BWTS: It doesn't have to be a four-letter word	21	Member's Forum	40
Australia Branch Formed	22		

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# Foreword

In common with many of my age group of former seafarers, I am often asked: 'Would you go back to sea today?' Apart from the obvious practical problems of age and lifestyle, reading this issue of *The Report* would convince me, should I really need convincing, that the answer is assuredly 'No!' The article entitled: *The (Not So) Happy Life Of The Modern Seafarer* by David Savage tells us very clearly that seafarers are prone to arrest by governments, kidnap by pirates and goodness knows what else; and I think that the line between being treated as a criminal for doing no more than your job, and being kidnapped by pirates, is a narrow one. In my day, the biggest dangers we faced were the perils of the sea and dodgy bars in Lourenço Marques; but well done to *The Report* and David Savage for airing these serious matters.

This issue of *The Report*, like its predecessors, gives us an amazing cross-section of marine topics: starting with the President's introduction and ending with the welcome news of a growing membership of IIMS, we are served a banquet of branch news, awards, innovative ship types, innovative ship construction materials, heavy transport of high value cargoes, microbes in fuels, casualty statistics and much more; a veritable feast.

In my former days I worked for an organisation with the ability over many years to capture marine casualty statistics, and the article by Alessio Gnecco jogged my memory. It was always the case that our sample of several thousand casualties each year, mainly insured in the London Market, revealed that almost 50% of the cases involved machinery damage. I once wrote an article called 'Another Day, Another

Failed Crankshaft', and it seems that nothing much has changed.

The two articles involving expert witnesses caught my eye: Mark Solon tells us how to become an expert witness, while immediately afterwards we learn that expert witnesses no longer have immunity in certain circumstances! I think you will agree that this is vital information for those of us who intend to offer ourselves as experts, but it also shows us that we all need training and the IIMS education update tells us how to get it. The IIMS has long offered a diploma for surveyors, and now it is being updated and upgraded an application is being submitted for approval to provide BTEC HND status for those who wish to progress and a BTEC Professional Diploma for entry level. This is a truly excellent move forward offering the first academically verified marine surveying qualification and I urge you, not only to read the article, but to pass it on to anyone you know who may be interested. I will just note here that the IIMS diploma has been copied more than once, but never very convincingly, and I think readers would do well to stick with the original.

In closing, I ask you, gentle reader, to do three things: to pass *The Report* to anyone who doesn't have one; to encourage anyone eligible to join IIMS to do so; and to put pen to paper yourself and contribute an article to *The Report*.

John Lillie  
MA, CEng, CMarEng, FIMarEST, FIIMS

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## The President Writes

**Summer in the UK is here - what summer, do I here you ask? Rain, cold temperatures together with the general economic doom gloom and despondency. Not a happy time for many in the Marine Industry.**

However, not all is gloomy, the IIMS continues to forge ahead. Our education programme is undergoing a radical change as we progress the Diploma to a HND qualification, taking the IIMS to the forefront of marine surveying education. The Education Committee have been working tirelessly behind the scenes with the relevant Government recognised Awarding Body to get the new programme upgraded, approved and revamped in the requisite format. New authors have been identified and signed up to the programme. Full launch is expected in October.

Our flagship conference in the exotic location of Bali is looming fast on the horizon. Our Regional Directors Capt. Irawan Alwi (Indonesia) and Capt. Peter Lambert (Australia) and their teams have been working overtime to put together a very varied and interesting programme. Have you booked yet? Do not to forget to take your wife, partner or friend, as there is something for everyone- oh pack the suntan lotion and sun hat. (go to events page on the IIMS website for more info). I look forward to seeing you there, we are assured it will be good.

Now onto a serious note – Confined Entry matters. Many of you may have recently seen various press reports relating to fatalities of ships personnel entering confined entry spaces. As a surveyor entering a confined space is a common activity, whether a leisure yacht or a VLCC. Indeed, I recently was refused entry to a site to undertake a tank inspection – something I am well experienced in, as I have been doing such work for over

40 years. I was asked the question by my client do I have a certificate? Have I been on a training course? Urgh – I had to admit no. Sorry was the response I was not allowed on site, despite my knowledge protestations. I was required to attend a course, which I did and am now happy to say I am duly qualified. The IIMS is currently seriously looking at this issue and as a responsible organization will be taking steps to introduce in the coming months a suitable training course. It is anticipated that this will be available around the world. Some useful information and guidance on the subject is now downloadable on our website.

As I write this note the sad news of the death of Will Henderson has been announced. “Will” was the chairman and founder of Henderson International a highly respected International Surveying organization located in the Middle East and India. He was a stalwart supporter of the IIMS and also an Full IIMS member. I had the privilege of enjoying his company on many occasions. A soft spoken Scot, a fellow bon-viveur who had a wealth of surveying knowledge. We offer his widow, family and all at Henderson International our deepest condolences. The marine industry will be a poorer place for his loss.

On a positive note our membership continues to grow even in these depressing times – since November 2010 we have grown from 1331 members to 1420 – with some 20 applications in the system. We must be doing something right, long may it continue.

Best Wishes  
Peter Morgan

# The Cost of Damage

By Alessio Gnecco CEng, FRINA, MIIMS, AIPAM



Anybody dealing with accidents, casualties and claims in the maritime world has the curiosity to know which are the most expensive cases and which consequences they have.

In practice, the question is: are we sailing in a properly plotted area or our maps are vague as a middle-age chart with fantastic beasts shown in all places where our knowledge is insufficient?



## 1. Insurer's Point of View

Of course, all the Insurers develop statistical analysis of the casualties and events which require their attention, however quite often the results are not promptly available to the public.

An exception is the Nordic Association of Marine Insurers (CEFOR), which several years ago began to analyze the available data and periodically issues reports about their studies.

One of the latest was the Engine/Machinery Claims Report issued on 30 June 2010 and presented both at IUMI 2010 and at the International Maritime Claim Conference at Malahide, Dublin. Full presentation can be downloaded from the CEFOR web site.

The statistics are based on the NOMIS (Nordic Marine Insurance Statistics) database, thus on a wide population, including the vessels insured by CEFOR from 2004 to 2009.

The study was limited to:

- Vessels with a registered IMO number
- Claims in excess of standard deductible (in the case of machinery damages in excess of USD 10,000).

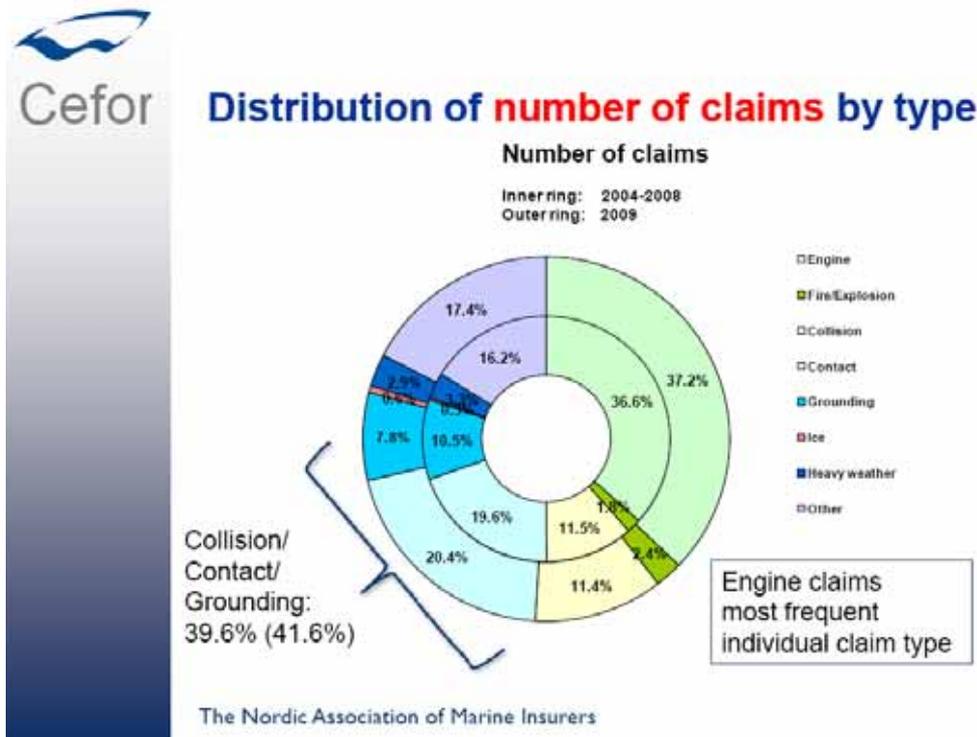
The above limits have the consequence to exclude all the damages concerning a huge fleet, including fishing vessels and yachts, which in the great majority have no IMO number.

Also, it is not clear what is considered as a "standard deductible", so the results have to be considered with a certain attention.

The interesting document deserve a careful study, not in the purpose of this notes, which will limit the comments to a few aspects.

## Distribution of claims

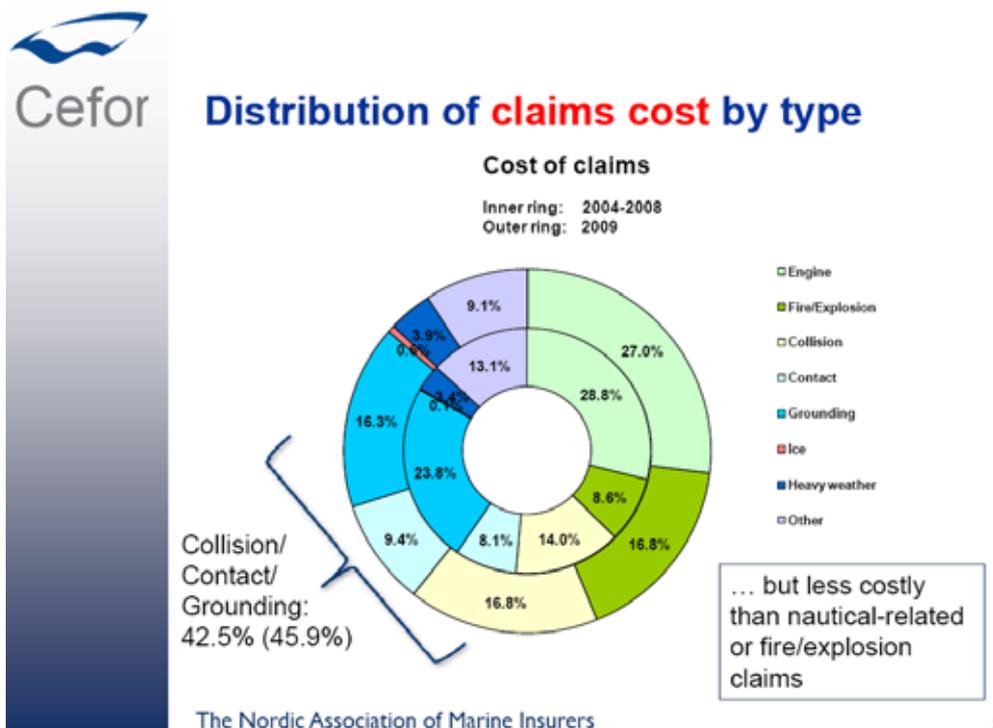
Although it is not specified which is the total number of claims taken into account and with the important limitations pointed out previously, a diagram is published, reproduced in the following.



The conclusion is that the "engine claims" (where engine is to be read as machinery) are the most frequent individual claim. As a matter of fact, summing up the casualties due to collision, contact and grounding, an even greater percentage can be obtained.

## Cost of claim

A second interesting diagram shows the distribution of cost of the claims.



No better detail was provided, therefore it is assumed that the given figures are based on the overall claim cost of the whole portfolio.

By this graph it is concluded that the machinery damages, albeit more frequent, are in general less expensive, summing up about 27% of the total cost, where the "nautical" related cases reach figures well above 40% of the total.

## 2. International Bodies and Organizations

The 2009 Maritime Accident Review edited by EMSA, the European Maritime Safety Agency, provides some data which can be taken into account, however due to the target of the Agency, machinery casualties are not considered, being more a damage than an accident.

The data divided in three major geographical area are shown in the following.  
The Atlantic Coast, North Sea and English Channel

TYPES OF ACCIDENT	2007	2008	2009
Sinkings	41	47	22
Groundings	128	128	124
Collisions/Contacts	218	197	197
Fires/Explosions	55	59	46
Other Types	86	54	48
<b>TOTAL</b>	<b>528</b>	<b>485</b>	<b>437</b>

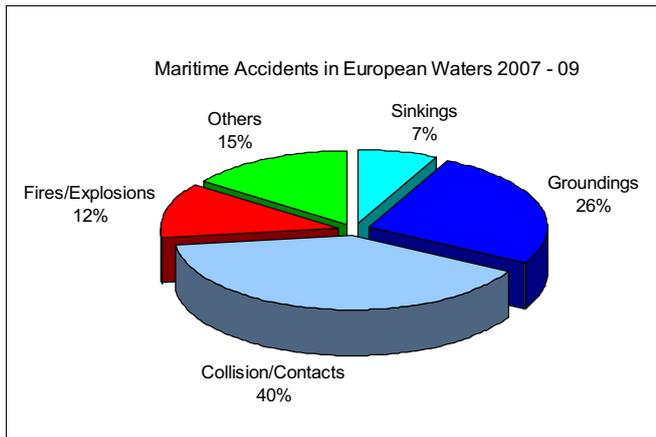
The Baltic Seas and approaches

TYPES OF ACCIDENT	2007	2008	2009
Sinkings	3	5	3
Groundings	49	52	33
Collisions/Contacts	23	35	24
Fires/Explosions	16	17	10
Other Types	15	11	5
<b>TOTAL</b>	<b>106</b>	<b>120</b>	<b>75</b>

The Mediterranean and the Black Sea

TYPES OF ACCIDENT	2007	2008	2009
Sinkings	11	9	3
Groundings	20	37	20
Collisions/Contacts	63	76	71
Fires/Explosions	20	13	11
Other Types	14	14	9
<b>TOTAL</b>	<b>128</b>	<b>149</b>	<b>114</b>

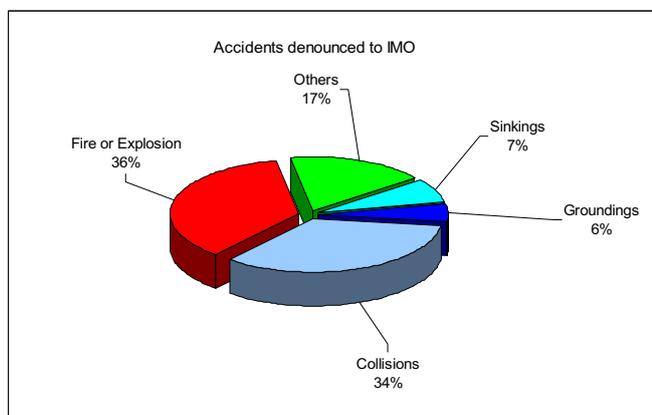
It can be concluded that in the three years 2007 ÷ 2009 occurred 2,142 accidents and the relative percentage of each type of casualty is shown by the following graph.



Another source of data is from IMO, the International Maritime Organization, which collects data about casualties and incidents denounced as per MSC-MEPC.3/Circ.3, where the types of events (the so-called "initial event") are divided into:

- collision
- stranding/ grounding
- contact
- fire or explosion
- hull failure/ failure of watertight doors/ports, etc.
- machinery damage
- damages to ship or equipment
- capsizing/ listing
- missing: assumed lost
- accidents with life-saving appliances
- other

By summing together some of the categories, to obtain results as much as possible coherent with the previous graph (i.e. "Others" to include hull failure, machinery damage and damage to ship and equipment, "Sinkings" to include capsizing, listing and missing), the following graph was obtained by the available IMO information.

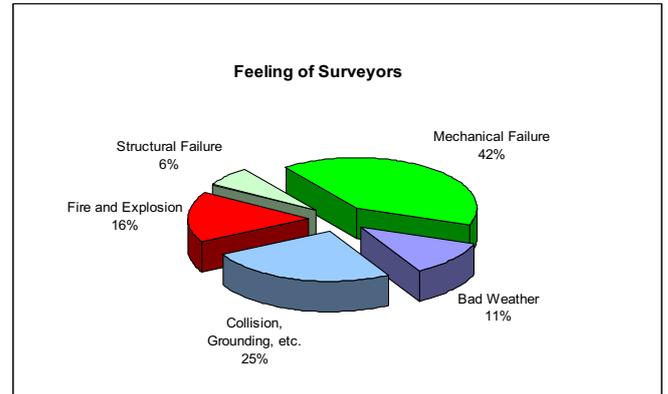


### 3. Surveyor's Feeling

A message was sent to some asking which was the feeling of each of them, without any calculation or rational consideration. The surveyors were requested to give a percentage to each of the following type of casualty:

- Adverse Weather
- Fire and Explosion
- Structural Collapse
- Mechanical Failure
- Collision and Grounding
- Others

The results are shown by the following graph.



The surveyors were also asked to give an indication about the range of value of gross claim in which they are involved, to be divided in the following categories:

- Below EUR 100,000.00
- Between EUR 100,000.00 and 500,000.00
- Between EUR 500,000.00 and 1,000,000.00
- Between EUR 1,000,000.00 and 5,000,000.00
- Above EUR 5,000,000.00

Roughly two-thirds put the core of their cases in the range between EUR 500,000 and 1,000,000 and one-third between EUR 100,000 and 500,000.

### 4. Comparison of Results

Taking into account the results of the available data, it can be concluded that our world is fully aware and convinced that the three main categories of damage are:

- Fire and explosions
- Navigation related damages (collisions, groundings, adverse weather)
- Machinery damages.

The above is quite obvious, however the differences in the weight of each category within the total of casualties are so huge that it is very difficult to carry out any comparison without further assumptions and considerations.

For instance, even focusing on the two categories which should be less prone to misinterpretations, the results are quite

different. Making 1 the percentage of casualties due to fire/explosion for each source of data, we obtain:

Source of data	Fire	Collisions
CEFOR	1	4.75
EMSA	1	3.33
IMO	1	0.94

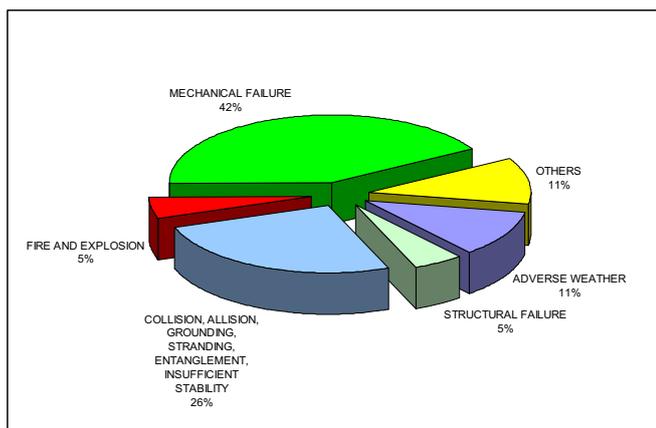
It is quite clear that the databases are not comparable and are too much depending by the source from which the data are collected and, probably, also by the purpose of their collection. Further difficulties arise from the differences in classification of each casualties i.e. what is considered "machinery"; whether the proximate cause or the root one are taken into account and so on.

## 5. Case Studies

### Tools

The above summarized results brought to consider which could be the contribute of a surveyor, or better of a group of surveyors, to a deeper knowledge of the matter.

It was prepared a very simple check list by which some 80 cases to which the writer had direct knowledge were codified and statistics elaborated. A blank sample of the check list is attached and the results are simplified by the following graph.



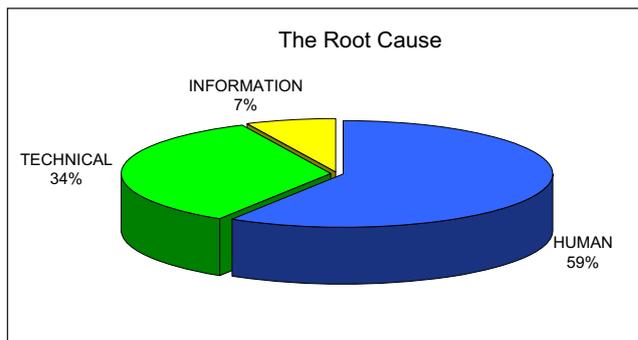
It was found that there is a good relationship between "the feeling" of the surveyors and the actual cases a single surveyor witnessed, therefore in the opinion of the writer the surveyor can be considered a reliable source of information, possibly the most reliable.

### Results

To show which are the results that can be obtained by the back-ground of a typical surveyor, the same 80 cases were analyzed looking for:

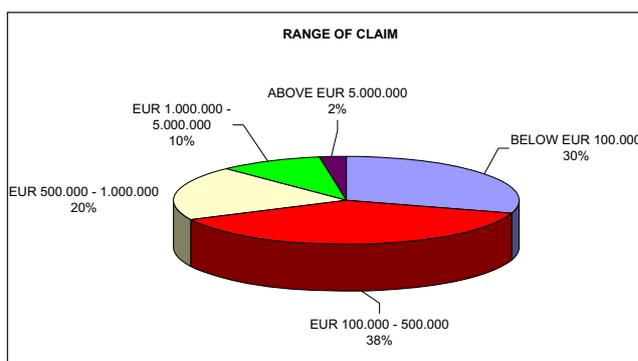
- Root causes
- Amount of damage/claim
- What was affected

The results are shown in the following.



Note: the surveyors of AIPAM were requested to give their opinion and their "feeling" was that the human factor was the root cause of casualties in 65% of cases, while technical reasons were at the base of 28% of cases. Again, an indication of the reliability of the surveyors "feeling".

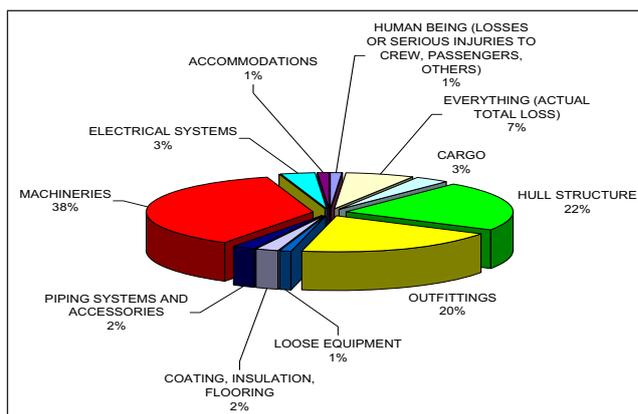
Also, the cases included in the personal portfolio of the writer were examined to determine which was the distribution of cost/claim, finding the following results.



The above graph indicates that the majority of cases about which a direct knowledge was available (58%) were in the range of EUR 100,000 ÷ 1,000,000, therefore comparable with those followed by the majority of colleagues from AIPAM.

The population of the directly examined cases it therefore considered quite significant and it was therefore analyzed to determine which part of the vessel, equipment, machinery was affected by the casualties.

A summarizing graph is shown in the following.



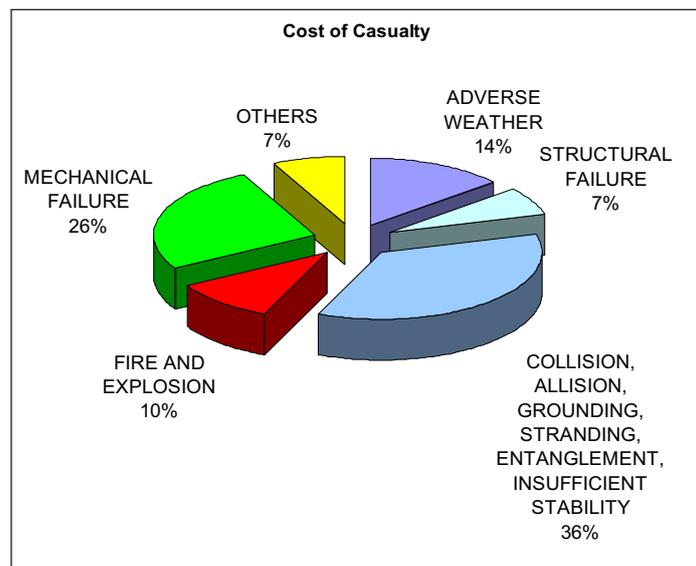
## The cost of each type of casualty

All the above exercises were carried out trying to validate the database which was available to the writer, in order to use it as a tool to determine which category of damage could be considered statistically more expensive. As the results appeared to be comforting, a further analysis was carried out.

The following conventional weights were given to each range of cost of the 80 cases directly followed by the writer, which were taken into consideration:

Below EUR 100,000	Assigned weight 1
Between EUR 100,000 and 500,000	Assigned weight 3
Between EUR 500,000 and 1,000,000	Assigned weight 8
Between EUR 1,000,000 and 5,000,000	Assigned weight 30
Above EUR 5,000,000	Assigned weight 50

The following graph shows how much each type of casualty weighted on the overall cost of claim of the considered population.



## 6. Conclusions

Although the mechanical failures, by number, constituted 42% of the cases about which the writer has direct knowledge and which have been considered in the present notes, their overall cost was about 26% of the total (Note: in the CEFOR database the same item reaches 37% in number and 27% in cost).

On the contrary, collisions, groundings, allisions and similar casualties, albeit less frequent (being by number 26% of cases) were in general more expensive, reaching 36% of the total cost. The CEFOR database for the same item reached about 40% in number and more than 40% in cost.

Apparently the check lists which has been used as a tool to categorize the cases to allow a statistical analysis gave some interesting results, however they would have to be validated by a wider population.

Back to the question in the foreword, are we sailing in a properly plotted area or our maps are vague as a middle-age chart with fantastic beasts shown in all places where our knowledge is insufficient?

In my personal opinion the statistics which are available deserve further study and I have the feeling that explorations are still to be done, as our charts are still full of un-explored continents populated by fantastic beasts. In this scenario, I believe that the surveyors could help to reduce the foggy areas.