MARINE INSURANCE CLAIMS IN SHIPPING

Ioannis A. Mavrakis, Technology Educational Institute (T.E.I) of Athens, Greece.

SUMMARY

This work deals with the marine insurance claims for hull and machinery. Initially, a brief outline of the present marine insurance procedures is examined. Investigation is made of the ways in which marine insurance claims are determined by examining the factors which influence the claims. The study proceeds to establish the claims for hull and machinery. The ways of making a claim in the marine insurance industry are developed with the view of highlighting the key features. A critical review is made of the existing approaches with possible simplifications and improvements. Following this, the alternative ways of treating marine insurance are suggested, by interfacing marine insurance with design, production and operation of ships. Finally, there are detailed propositions for future improvements in the marine industry and insurance.

1. INTRODUCTION

Due to the nature of the marine industry with global forms of transport, including the carrying of passengers and cargoes in a vessel, which is often exposed to hazardous weather conditions, as well as to human and mechanical errors in navigation, there is clearly a need for some form of insurance to cover disasters at sea which may result in loss of life and intense capital investment.

Marine insurance has been developed over the years, and has not really been subjected to as much scientific treatment as it deserves, and is full of jargons—special terms—this is one of the reasons why the subject is so complicated. Therefore, it is required to review, clarify and examine the system, which has grown up rather than been designed for a given situation.

On the other hand, marine insurance is not well understood by designers and in order to make better ships closer co-operation is needed with underwriters. Also more safety features should be incorporated into the design, bearing in mind the marine insurance requirements.

2. A BRIEF OUTLINE OF PRESENT PROCEDURES

The main object of marine insurance is to protect the individual person or company against catastrophic loss, and today the protection afforded against total loss is all important in the financing of shipping and trade. As it can readily be appreciated, from the moment a shipowner takes delivery of a highly valued vessel, his capital is exposed to the danger of the various perils of the sea, thus his first concern is to cover himself against such perils, which occasionally may result in the total or partial loss of his vessel.

The following flow diagram would illustrate the present procedures in the marine insurance market for rates and claims.

**TYPES OF COVER-ESTABLISHING THE RATES-NEGOTIATING BROKERS-(Lloyd’s Underwriters, Insurance Companies, International Markets)-CLAIMS.**

The different types of insurances which an owner may arrange on his vessel are: Hull & machinery, Increased Value, Premiums reducing, Collecting Commission, War Risks, Protection and Indemnity, Loss of earnings. (9)

The policy of insurance is usually subject to the Institute Time Clauses and Institute Trade Warranties. The most common perils insured against which give rise to damage are fire, contact with piers, wharfs, quays, locks, etc; heavy weather, stranding, collision, striking on rocks or on bottom, contact with floating objects, ice damage, and the basic coverage afforded against the perils mentioned above is extended by the addition of the perils mentioned in the Inchmaree Clause and where applicable on certain vessels, by arrangement, by the Liner Negligence Clause.

It should be noted that the collision clause contained in the Institute Time Clauses forms a separate contract to the insurance on the vessel, so that the underwriters could be liable for a substantial claim under the collision clause, as well as a total loss of the vessel.

The Inchmaree clause does not cover the cost of repairing or renewing a latently defective part, but only covers the cost of repairing or renewing other parts damaged in consequence of the failure of the defective part.

The Liner Negligence Clause, on the other hand, provides more extensive cover in that where an accident has occurred due to a latent defect the shipowner recovers the cost of the latently defective part as well as the cost of repairing damage to other machinery parts. Negligence of
master, officers, crew or pilots is subject to the provision that such loss or damage has not resulted from want of due diligence by the assured company owners or managers. Inevitably, the question arises ‘what is negligence?’

Negligence is lack of proper care or attention or carelessness. If negligence is to be the grounds on which a claim is to be submitted under the terms of the policies, the onus of proof remains with the shipowner to show that loss or damage resulted from a negligent act. It is insufficient merely to claim negligence. Negligence must be proved, and when it is proved it must be interpreted in relation to the policies. The act of negligence must be specific in its association with navigation or machinery and when in relation to the latter it must only encompass such parts as are normally incapable of functioning without each other. It should be noted that lack of knowledge is not negligence and incompetence is not negligence. Each act of negligence so specifically defined is subject to one deductible. Each policy of insurance is subject to a deductible per accident.

3. MARINE INSURANCE BROKER

The broker is the link between the assured or shipowner and the insurer or underwriter. The parties to the insurance contract, which is evidenced by the policy, are the assured and the underwriter. The latter may be a Lloyd’s underwriter or an insurance company.

Although merchants sometimes prefer to deal directly with companies, as a general rule a broker is employed, and shipowners invariably use a broker to effect their insurances.

The broker is an expert, well versed in marine insurance law and practice. He is the agent of the assured not the agent of the underwriter or company. By virtue of his practice and his knowledge of the market, a broker can obtain much better terms for his client than the assured could obtain himself.

The broker is subject to the ordinary law of agency and failure on his part to exercise reasonable care and skill in effecting the insurance and in securing a policy in accordance with his client’s instructions may render him liable to an action for damages if his client is prejudiced thereby.

4. DAMAGE AND CLAIMS TO HULL & MACHINERY

4.1 INTRODUCTION

The insurance contract, whether marine or otherwise, is rooted in various principles. There are five principles in marine insurance contracts, as follows:

1. Insurable interest – there must be an insurable interest; therefore the shipowner loses by a loss or sinking and stands to gain by the safe arrival or completion of the voyage.

2. Indemnity – is according to the terms of the contracts. The assured has to prove its loss under his policy.

3. Subrogation – this means that the underwriters become subrogated upon payment of the claim only: that is, do not get paid twice for one repair. Subrogation is on the underwriter after he has paid the damage, in cases of a collision of vessels, b. cargo damage.

4. Good faith – is essential in marine insurance, and although underwriters do not survey vessels, evidence must be available be means of annual and special surveys to prove seaworthiness.

The ship must not misrepresent the facts or the contract may be null and void if a claim arises.

Facts would be:

a. the state of the ship or machinery;

b. deviation from the agreed trading area without prior advice or notification;

c. the type of cargo – that is hazardous cargo – carried was different from that originally indicated.

5. Causa proxima – means trying to determine the dominating reason for the loss or damage. For example, in the case of negligent or unskillful navigation, the loss is regarded as caused proximately by perils of the sea, and only remotely by the negligence or unskillfulness of the master or crew, except in the case of a willful act or default of the assured.

4.2 MARINE INSURANCE IN PRACTICE

In marine insurance practice, there are convincing reasons for the use of valued policies, those which agree as between assured and insurer a certain specified sum as representing the worth of the particular interest concerned. In hull insurance this arises from the fact that the value of a ship is represented not by the cost of building a new vessel, or the cost of purchase of a secondhand vessel, but by its earning capacity to the owner.

4.3 INSURABLE INTEREST

The importance of the principles relating to insurable interest cannot be overestimated and are of the greatest importance in dealing with claims, not only in respect of marine transits, but also in respect of the ancillary transits before and after, and sometimes during the marine transit. They offer less difficulty in matters of hull insurance,
except in respect of mortgages, hire purchase, etc, but
the principles must be borne in mind in dealing with
complex situations.

4.4 MEASURE OF INDEMNITY

The current common hull clauses usually provide that
the excess shall apply to all claims other than total or
constructive total loss and, in addition, that claims
under the Running Down or Sue and Labour Clauses
shall also be subject to the excess provision.

Only one deduction, however, is made in respect of all
the claims, whether Particular Average, General
Average, Running Down or Sue and Labour Clauses,
arising from a single casualty.

As an example, the following figures are considered:

- Insured value=150000E
- Sound value=120000E
- Damaged value=60000E

The depreciation should be assessed by deducting the
damaged value of the vessel from the insured value.
That is: Depreciation = 150000E-60000E=90000E

4.5 VARIOUS EXPENSES

There are a number of expenses which may occur
during the damage repairs:

- a. Temporary repairs
- b. Overtime
- c. Dry-docking
- d. Gas-freeing
- e. Increase in repairs
- f. Rates of exchange

4.6 DOCUMENTS OF HULL & MACHINERY
CLAIMS

The documents required in the event of claim should
always include the policy. In the case of a total loss –
actual or constructive – this will normally be retained
by the underwriter, but where under a hull policy for
instance, there may be another claim under the running
down clause; the assured is entitled to demand its
return. In any case the policy will be endorsed to show
the payment made.

Where the owner is resident abroad a ‘payment order’
will be required authorizing the insurer to pay the
broker. If there is a note of any assignment or mortgage
endorsed on the policy, the insurer should satisfy
himself that payment is being made to the right party.

In general, the following are the required claim
documents:

Notice of abandonment, Protest and extended protest,
Log books, Survey reports, Tenders, Repairs accounts,
Towage bills, Pilotage accounts, Fuel and engine stores
account.

The above documents are of course incorporated in the
adjustment prepared by the Average Adjuster.

5. MAKING A CLAIM

5.1 INTRODUCTION

The ways of claiming depend on the type of damage or
loss which takes place and the number of parties involved.
Also the processing of claims involves the following
people as shown in the diagram:

Shipowner or Owner’s Representative

Surveyor Broker Adjuster

(Salvage Association or Independent)

Underwriter

When a damage occurs the shipowner has to inform the
broker and he in turn the underwriters, for the type, date
and place of the casualty. Then, the underwriters will
appoint a surveyor, who will survey and estimate the
extent of the damage.

5.2 PERSONNEL REQUIRED

As well as the superintendent and the surveyor it will
greatly help matters to have present at the initial survey:

1. A surveyor of the appropriate Classification
Society if damage affects class.
2. A manager of the repair contractor if repairs are
to be done immediately.
3. Such deck or engine room officers as are required
to assist with their knowledge of the ship and/or
the casualty.

If the damage is to the hull of the vessel, drawings should
be on hand so that plates, frames, etc, can be correctly
designated. Only too often dispute arises as to the
location of damages carried over from one survey to
another because of differing methods of designating plates
and frames.

5.3 NOTIFICATION OF DAMAGE

There are various ways in which a damage is notified.

1. Whenever an accident occurs involving his vessel
or his vessel and another vessel and/or other
property, the Master must notify the shipowner
and/or ship manager giving all the essential details.

2. On receipt of the details of the damage sustained or damage done or both, the ship manager will arrange for the attendance of the underwriters’ surveyor as necessary. In an emergency, or to avoid costly delay to a vessel, underwriters’ surveyor may have to be called in by the Master before notification is sent to the ship manager, in which case the Master should contact the surveyor through the vessel’s agent.

3. At regular dry-docking or special survey the attending superintendent will have details of all known outstanding damage repairs and underwriters’ surveyor will be in attendance as necessary. In the event of further damage being discovered in the course of the survey, the superintendent will notify the ship manager immediately and thereafter the Master’s report, together with extract of log, should be submitted to the ship manager in accordance with the afore-mentioned reporting procedure.

5.4 CONDUCTING A DAMAGE SURVEY

The owners’ superintendent is virtually, for the purpose of the survey, the shipowner. He is stating the claim (this may be altered in ‘form’ later by the owners’ claim manager or the Average Adjuster but not in technical fact or detail), and he is the only one who can authorize repair work to be carried out.

The surveyor may agree to the proposed repair or even recommend a certain course of action, but they have no authority whatsoever to instruct a repairer to carry out repairs.-see Appendix A.

5.5 PROGRESS OF REPAIRS

As the work progresses further surveys may be necessary and, while the surveyor will from time to time revisit the vessel or the place of the repairs to satisfy himself on various points, it is the superintendent’s duty to advise the surveyor specifically if the scope of work on the claim is expanded from that of the original agreement.

This is a great cause of dispute which can easily be avoided if the superintendent will notify the surveyor in sufficient time to arrange the required additional survey if considered necessary, without undue delay to the repairs. The superintendent should not wait until the surveyor makes an occasional visit but should make sure that he is aware that further survey is required.

5.6 PAYMENTS ON ACCOUNT

If, during the course of repairs, payments in advance of the final account being submitted are required, it is well that the Superintendent gives ample notice to the surveyor that such a request is imminent so that he can assess the cost of repairs already satisfactorily completed, thus being in a position to advise underwriters when asked to do so.

5.7 APPROVAL OF ACCOUNTS

An essential part of the survey report is a detailed explanation of the costs involved in the repairs with clear subdivision of the sums involved against the various casualties being dealt with in the report, as also an itemized General Expenses account.

The time taken on each individual case as also the dock time, if dry-docking was necessary, for each repair must also feature in the survey report. To enable the surveyor to supply this information close liaison is required between him and the Superintendent on this important matter and so free discussion should take place between these parties.

5.8 ADDITIONAL COSTS

As well as the repairers’ account there may be other accounts which should be brought to the surveyor’s attention for approval and inclusion in his report; these costs are for:

1. sub-contractors’ accounts not included in the repairer’s account, eg, tank cleaning, boiler cleaning, painting, etc.

2. supply of replacement parts from owners’ stock or suppliers.

3. work done by crew in respect of the repairs. This can be a very contentious point and so should be well documented and explained.

The additional cost incurred by working overtime over the cost, had the repairs been carried out in normal working time, should be agreed as also the time saved on each case due to such working.

6. CRITICAL REVIEW OF EXISTING APPROACHES

6.1 THE ROLE OF THE BROKERS

Coming now to the services provided by the marine insurance brokers; it is known that when in business in a very competitive market the engagement of a broker is to the benefit of both parties concerned, and almost in all such cases when business is negotiated there is one broker on either side. In the marine insurance market where
competition is of a limited nature the present practice of involving one broker to protect the interests of the assured should be changed, so that the broker be incorporated in the shipowners’ office, in big shipping organizations, rather than act independently, thus increasing the operating costs for the owner who could benefit as he has done in the case of a resident marine superintendent or port captain, etc.

By doing so, the owner would some closer to the underwriter lifting the present barrier separating the two for their mutual benefit; that is, better rates, speedier settlement of claims, and most important personal contact, thus preventing certain owners from taking advantages of their underwriters hiding behind their broker.

6.2 CLAIMS PROCEDURES

Claims in general can be broken down under separate headings as follows: Total loss, Partial loss, General average charges, Sue and labour charges and War risks, Partial loss, General average charges, Sue and labour charges, and War risks.

War risks at the present time are insured separately in any case, and this might well point the way to a slightly different approach to the general question of ‘marine insurance’ in that the remaining categories mentioned above might well be rated and administered separately as follows:

1. Hull & machinery – (total loss)
2. Partial loss
4. General average expenses, salvage, and sue and labour charges.

On the claims processing side present practice is employing rather anachronistic methods and to take exception to one, that of the Average Adjuster. His intervention as an independent person or body in actual fact, although his work is necessary in order to find the total amount of money an owner is entitled to receive due to a claim of an insured risk, his occasional heavy programme may delay one adjustment for a period of time which might jeopardize the interests of the owner.

Further in many occasions the parties involved by employing delaying tactics in corresponding with the adjuster protract payment for obvious reasons to their benefit. It should also be mentioned here that many times in the past an adjustment has not gone through when presented to the underwriter irrespective of efforts by the broker involved, who once again in most similar cases is ‘delaying the post’ between the underwriter and the owner.

7. POSSIBLE ALTERNATIVE WAYS OF TREATING MARINE INSURANCE

7.1 BETTER SAFETY FEATURES

An alternative way of improving marine insurance claims is to build in better safety features; for instance, life-boats, fire-fighting equipment, electronic equipment, computers, etc., depending on, of course, the new type of vessels, the new cargoes transported by them, their trading areas and the possible hazards, in order to avoid the event of collision and/or fire damage, which may result in a actual or constructive total loss of the insured unit.

7.2 INTERFACING DESIGN, PRODUCTION AND OPERATION

After examining the marine insurance procedures, it is essential to present to the designer predominant designs, production and operation factors, which he should take into consideration in the preliminary stages when designing a new vessel. This should be done in conjunction with the feed-back of information from the marine underwriters’ experience from the claims side of the business.

a. Feed-back of Experience in a Systematic Way

In order to interface designs, production and operation of ships with marine insurance, a more systematic way of feed-back of experience gained from the underwriters, the Salvage Association surveyors and from independent surveyors, who act as agents of the underwriters around the world is of paramount importance.

As in the case of Classification Societies, which accumulate experience during the various surveys carried out and is fed back to the shipbuilders. This will be for the benefit of all concerned such as the designers, operators and underwriters.

b. Design

From the design point of view, the following must come into consideration:

The risk of collision can be reduced by the provision of adequate and effective navigational aids and by good bridge layout. A computerized ‘black box’ system, similar to the one used on board aircraft today, should be fitted on all vessels, which will record all the manoeuvres carried out on board; thus in the event of a major accident – collision, grounding, total loss, etc. – useful information will be made available.

A new ducted propulsion system with a new steering system should be considered to cope with the problems of manoeuvring and control of vessels working in restricted waterways, where depth and breadth are critical factors, as
well as in cases where ice and floating hazards involve vulnerability of exposed propellers outside of the hulls.

Also the arguments for and against two engines should be considered. The running cost is obviously going to be nearly double the cost of one engine, and the owner may be prepared to pay for towing in the event of damage. The argument for two engines is that if one breaks down, the other can be used to make to port.

The structure of the ship – for example, longitudinal or transverse framing – will affect the claim on any damage or collision prevention of pollution should be considered, especially in the tanker class, by strengthening ship hulls and diminishing the risk of spillage as a result of stranding or contact damage.

The design does not directly affect the insurance rates, for the underwriter does not look at the design features, but it obviously affects the claims to an extent when there is damage or collision and these in turn the rates.

Designers, underwriters, surveyors and class surveyors must get together to exchange reliable information to improve design, production, operation and insurance of a vessel, as all these go towards the operating cost and the shipowners must know about these aspects too.

c. Production

From the production point of view consider the following points:

The speed of repair and the close proximity of a repair yard is essential as this helps the insurance rates ad far as the ‘turn-round’ time is concerned on a particular voyage from the insurance point of view; the longer the ship is in the repair yard, the more expensive the repair is going to be, so it must always come back to ease and low cost of maintenance and repairs.

Ease of repairability is essential as far as standard plate is concerned. It is impossible to allow for this as no-one knows here or when a ship will need to be repaired.

d. Operation

From the operating point of view, the following must be considered:

The type of machinery has to be looked at more fully, so that the crew know how to handle the machinery.

Automation should be considered in its place in new designs’ for instance, there are two ships, one of which is automated.

The human nature aspect comes into this too, as with ‘dials’ to look after things, the crew may not look after the ship properly.

Computerisation is helpful in loading, but computers are expensive, and the main damage done during loading is due to crew negligence in overloading the ship’s gear and causes some damage which cannot be prevented by the computer.

It is evident from the above that there is a need for feedback of information and a close co-operation between the various parties involved, that is, shipowners, designers, shipbuilders, ship managers, marine brokers, surveyors and underwriters, in order to design, produce and operate ships in the most effective way and to improve the existing practice for the benefit of all concerned.

8. RECOMMENDATIONS FOR THE FUTURE

8.1 USE OF MATHEMATICAL TOOLS

a. Type of information required

In order to use mathematical tools it is necessary for the information to be gathered on a world-wide basis, as follows:

1. The total losses by tonnage over a period of years
2. The loss ratios over a period of years.
3. The loss ratios by type of vessel over a period of years.
4. The loss ratios by type against actual and constructive total loss over a period of years.
5. The loss ratios by age and type over a period of five years up to twenty-five years.
6. The loss ratios by age and type for actual and constructive total loss over a period of years.
7. The loss ratios by size, age and type in five years steps.
8. The loss ratios by size and flag for a period of years.
10. The loss ratios by type and the type of machinery damages. References (1), (2), (3), (4), (5), (6), (7) may provide useful guidance in this area.

When this information is compiled, the following could be seen:
The total loss tonnage can give us the amount of money paid back to the owners – so a cost analysis would be essential. Also to investigate the increase or decrease in the total loss over the years.

The loss ratio is the ratio of tonnage lost over the tonnage afloat. It is worthwhile to investigate the reasons for any deterioration in total loss with references either to type, size or age.

In finding out the trend of actual or constructive total loss for the ship types it can be seen if the existing practice of marine insurance is correct or not as, for example, the introduction of the fifteen-year age limitation by cargo underwriters in the Classification Clause.

If there is a rise in the overall ratio, this is a direct reflection of the fact that, due to inflation and the changes in currency, damage repair costs could reach the insured value of that particular type of vessel. So, if the insured value of a ship is not increased at the same pace as the cost of repair at the shipyards and in the countries where that ship is likely to be repaired after an accident, there is a greater likelihood of constructive total loss; since, constructive total loss increases hand in hand with the increasing cost of repair.

A casualty analysis could show the percentage of loss ratio in respect of vessels and the causes, for instance, fire and/or explosion in cargo tanks as in the case of tankers. By doing that the problems associated with these damages could be investigated, as in tankers these damages were due to tank size and this could give to the underwriters a better guide when rating a new type of vessel and to the designers the problems involved.

The trend, when the size of vessel reaches a critical age and when it is uneconomical for the shipowners and under-writers, could be seen. It becomes, therefore, of some importance to analyse the reasons if there is a marked deterioration in total loss once the vessels exceed fifteen years of age.

b. Use of Statistics

By classifying the casualties into groups, it is necessary first of all to have statistics on the casualties, such as:

1. **Human failure:** a. Stranding, b. Collision, c. Contact.
2. **Ship failure:** a. Heavy weather, b. Sinking, c. Leakage.
3. **Fire/explosion**

Fire and explosion should be shown separately because exact information as to the cause of the outbreak is often difficult to obtain.

With this type of information it will be possible to establish the factors which affect the loss ratios, if it is:
- a. The type of vessel
- b. The size of vessel
- c. The flag of vessel
- d. The age of vessel
- e. The trade of vessel

Also it will be possible to investigate the cause of loss and which losses are more frequent than others for a specific type of vessel; for instance –
- Collision/contact
- Heavy weather and sinking
- Fire/explosion
- Stranding
- Others

From these losses it is better to separate the ones which resulted in an actual total loss, from those of constructive total loss of the vessel.

It is obvious from the type of information required that the use of statistics is of a primary importance in order to be able to analyse the problem, that is, to investigate the cause of loss and then assessing the risks in a better manner. This would aid the designers to improve new designs and the underwriters to set aside the money required for reserves for the coming year(s).

Statistically, the total loss ratio from the insurance point of view must be investigated, as there are many instances where the ship sinking following a collision could perhaps have been avoided, eg, double-skin hulls, etc.

Since all risks are composed of two factors:
- a. the probability of an accident or incident of loss
- b. the extent of the claim when an accident does occur it is evident that a comprehensive use of probability techniques will be a new mathematical tool to the underwriters for their use in new rating of risks.

**c. Possible Analysis Techniques**

Insurance cost is an annual cost, so a possible analysis technique is a ‘cost analysis’ of all the operation costs along with the cost of insurance. So, in the preliminary stages of the optimum design, a cost optimization analysis technique is needed.

From Fisher’s paper (8), the total annual cost is equal to:

\[
\text{Total annual cost} = \text{Hull & Machinery insurance} + \text{Protection and Indemnity insurance} + \text{Hull & Machinery Maintenance} + \text{Crew + Stores & Supplies Costs.}
\]
But the Hull & Machinery cost =function (% dwt or G.R.T. % Insured Value or Building Cost).

It could be seen from this formula that hull & machinery insurance cost could be expressed as a function of the design parameters. So, insurance cost is a cost parameter in the ship design.

The cost analysis should be carried out on different types of ships and see what the similarity is between them, if any, and to be able to ascertain what percentage of the overall total annual costs to applicable to marine insurance.

Also, to be able to find how the rest of the design parameters such as L, B, D etc. vary with the cost of insurance. So that a more reliable formula for estimating the annual premium could be found and therefore to be able to use formula derived from analysis rather than from empirical ones.

This cost analysis technique should be able to allow evaluation of the break-even costs to alter boundary conditions applicable to the design and operation of the vessel. In some instances it may require technological advances, but for others it may necessitate breaking psychological barriers on the part of the owners, operators, shipbuilders and underwriters.

It appears clear that the application of the cost analysis technique, in conjunction with the design parameters at the preliminary design stage, can benefit the marine industry, but precise use of these techniques awaits the supply of data from owners, operators, shipbuilders and underwriters. Their frequent reluctance to make them public is sometimes understandable, but is not always justifiable.

8.2 LIKELY DIFFICULTIES

a. Lack of Reliable Information.

Due to these difficulties in securing reliable information it is not possible to compare the loss ratios due to ‘human failure’ caused by crew negligence, as with ‘ship failure’ and so to find the percentage of loss ratios.

Reliable information would aid to find the relationship between cause and the incidence of constructive total losses. If within an overall ratio a similar increase is being reflected in constructive total losses, this must mean that each incident is also becoming more expensive ‘in terms of the insured value’.

It must also mean that unless values are increased in proportion to the size in the cost of repairs in the currency of the policy, the cash cost of claims is proving more expensive ‘in terms of rate of premium’ not only for total loss but also for damage risks.

b. Lack of Communication.

For instance, for better propulsion machinery and steering gear, the owner should get better rates than one who has not.

It is obvious from the above that this close co-operation could be effective by having more joint conferences on common subjects; for example, at least twice a year, with the following participants: shipowners, designers, ship managers, surveyors, shipbuilders, ship repairers, marine brokers, underwriters, adjusters, lawyers and scientists from universities, such as: mathematicians, naval architects, marine engineers, etc.

Only in that way something more constructive can be achieved, and so marine research can be carried out more effectively with better feed-back of information for new fields. By this method the marine insurance system would be treated in a scientific manner in order to be in line with the advanced marine technology in an ever changing industry like the marine industry.


Also the education and training of masters, officers and crew should be kept up to standard in qualifications and experience, and to be used by the operators in the proper way – each one to do a job which he is qualified for – and not to have a vessel which is to be served by thirty crew members and only fifteen on board, as is often the case, out of which ten of them have the appropriate qualifications to sail on that vessel.

This education and training will enable them to communicate with the rest of the people involved in the shipping industry, like shipowners, marine surveyors, etc, and at the same time to minimize human errors in operation.

Finally, marine insurance should be taught at universities in the marine courses, so that a qualified naval architect or marine technologist knows something about the insurance side of the business. This will enable them to communicate better with the different people involved in the marine industry.

8.3 INTRODUCTION OF INNOVATIONS

The owner could place the risk with the underwriters by the use of desk computers. Also computers must be used as an aid to the marine insurance industry, in conjunction with the techno-economical information, so that before a new vessel or unit is built, the owner could ascertain his insurance cost and help him to make the right decision before purchasing and insuring a new vessel or unit.
Attention also should be drawn to all concerned that the
designer is employed by the operator with a view to
building an economical ship which will turn out a
bigger profit, since the nature of the ‘business man’ is
always how to spend as little as possible on items which
do not return a profit.

The burden of research and the responsibility of safety
devices and other structural features on-board all vessels
should be undertaken by the underwriters and all
recommendations be made without relaxation on
existing vessels, without resistance from operators with
large volume of tonnage, and to be applied with a firm
hand against all ships likely to pollute the seas for gain
and without thought for environmental considerations.

On the other hand, the Classification Societies should
not act as independent bodies, but be incorporated
directly with the marine underwriters; thus the present
trend of competition between the Classification
Societies would be averted to the benefit of all and not
the benefit of the few.

Thus a multi-national organization of competent
surveyors directly dependent on the underwriters to
classify, supervise and maintain a high standard of
classification of all vessels, independent of nation and
management, would work according to rules which
would be drawn up by the owners and the underwriters.
This body would be based upon the present Salvage
Association arrangement or some similar form to be
founded.

9. CONCLUSIONS

Based on the work carried out in this paper the
following conclusions are considered appropriate:

1. A planned maintenance programme of all machinery
is essential together with close supervision of surveys
as they become due.

2. The supervisory element cannot be over-emphasised
and the quality of superintendent engineers and marine
superintendents must be of the highest possible order.
It is also helpful to have efficient and trustworthy crew
members with long term service.

3. The marine insurance industry should be integrated
more fully with design, production and operation of
ships in order to improve effectiveness for the benefit
of all concerned.

4. The shipowner could carry his own insurance if he
has the funds to do so or he could join a mutual club of
‘established’ shipowners or a company, such as a
captive insurance company. He also could carry part of
any of the risks himself up to a limited amount, so that it
does not affect his cash flow problem.

10. ACKNOWLEDGMENTS

I wish to thank the Department of Shipbuilding in the
School of Applied Technology and the board for directors
of Technology Educational Institute (T.E.I.) of Athens,
Greece, for their encouragement and support to present
this paper.

11. REFERENCES

1. BEER, W.J.,
   Analysis of World Mechanical Ship Losses, Transactions
   R.I.N.A.

2. MONLEY, C.V.,
   A Further Study of ship Losses, Transactions R.I.N.A.
   1959, Vol. 101, pp 337

3. Conference of International Union of Marine Insurance,
   1971, September, Brussels.

4. Conference of International Union of Marine Insurance,
   1972, September, Stockholm.

5. Total Loss Element, Post Magazine and Insurance

6. Conference on International Union of Marine Insurance,
   1973, September, Venice.

7. Conference on International Union of Marine Insurance,
   1974, September, Berlin.

8. FISHER, K.W.
   The Relative Costs in Ship Design Parameters, Naval

9. MAVRAKIS, I.A.
   Marine Insurance Rates From The Point Of View Of The
   Naval Architect, I.M.A.M
   1977, November, pp 10.3 Vol II
APPENDIX A-EXAMPLES OF APPORTIONMENT HULL CLAIMS

1. The cost of entering and leaving drydock is 900E. Dock dues are 300E per day. The damage is by heavy weather in each case. The insured value is 150000E. Cost of owner’s repairs 15000E. requiring four days in drydock.

Cost of Damage Repairs

<table>
<thead>
<tr>
<th>Casualty</th>
<th>Cost of Repairs</th>
<th>Days in Drydock</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st</td>
<td>3000E</td>
<td>3</td>
</tr>
<tr>
<td>2nd</td>
<td>18000E</td>
<td>4</td>
</tr>
<tr>
<td>3rd</td>
<td>9000E</td>
<td>3</td>
</tr>
</tbody>
</table>

The excess under the Institute Time Clauses is 750E, that is all claims are recoverable, subject to that excess.

Repairs for owner’s account immediately necessary for seaworthiness are effected concurrently with damage repairs. All repairs require dry-docking.

Apportionment:

<table>
<thead>
<tr>
<th>Casualty</th>
<th>1st</th>
<th>2nd</th>
<th>Owner</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost of entering and leaving drydock</td>
<td>150</td>
<td>150</td>
<td></td>
</tr>
<tr>
<td>Cost of 3 lay days (common to all=900E)</td>
<td>150</td>
<td>150</td>
<td></td>
</tr>
<tr>
<td>Net</td>
<td>2,550</td>
<td>17,700</td>
<td></td>
</tr>
</tbody>
</table>

It should be noted that 50% of the common dues only shall be borne by the shipowner. Therefore the underwriter will pay 2,550E + 17,700E + 8,850E which equals 29,100E and the shipowner 18000E.

2. The introduction of an excess provisions into hull policies results in a further complication, since although repair results from a loss insured against, the claim including the due proportion of drydock dues, may not amount to the excess. Thus, as a simple example:

A vessel enters drydock for routine maintenance and for repairs to two casualties for underwriters account. The former requires an expenditure of 15000E, the latter respectively 6000E and 18000E. The cost of dry-docking is as shown on the previous example and requires respectively, 3 days, 4 days and 4 days (owner). Owner’s repair cost 15000E. The excess in the policy is 750E.

Apportionment:

<table>
<thead>
<tr>
<th>Casualty</th>
<th>1st</th>
<th>2nd</th>
</tr>
</thead>
<tbody>
<tr>
<td>Owner’s repair</td>
<td>15,000</td>
<td></td>
</tr>
<tr>
<td>1st cas. repair</td>
<td>6,000</td>
<td></td>
</tr>
<tr>
<td>2nd cas. repair</td>
<td>18,000</td>
<td></td>
</tr>
<tr>
<td>3rd cas. repair</td>
<td>450</td>
<td></td>
</tr>
<tr>
<td>Cost of entering and leaving drydock</td>
<td>150</td>
<td>150</td>
</tr>
<tr>
<td>Net</td>
<td>2,550</td>
<td>17,700</td>
</tr>
</tbody>
</table>

It should be noted that 50% of the common dues only shall be borne by the shipowner. Therefore the