CONDITION SURVEYS

AND RISK ASSESSMENT

Duties, Rewards and Liabilities

Who should bear the burden and to which extent?

Alessio Gnecco

FRINA, CEng, MIIMS, AIPAM

1. Foreword

One of the duties of technicians is to use tools which are apt to the scope.

The preventative surveys (condition surveys and risk assessments) currently carried out are, in the opinion of the writer, unreliable, dangerous and professionally de-motivating, whilst the criminal, civil and financial risks are huge.

The above situation in no longer bearable. We have to ask to ourselves and to the industry whether the preventative surveys are a tool which deserves to be improved or if they have to be renounced altogether.

The Board of Directors of AIPAM (Associazione Ingegneri Periti Avarie Marittime), the Italian association of marine average surveyors, deemed it necessary to give their opinion on the matter, by preparing this booklet and by distributing it as a contribute to an hoped clarification.

The first issue was prepared by Alessio Gnecco and further revised in a common think tank way by all the members of the Board, with the qualified contributions of various members of AIPAM and of the maritime community, who are listed in the following.

During the meetings within AIPAM which brought to the decision to prepare this document, it was also discussed if the various types of preventative surveys were so different to deserve separate and dedicated consideration.

On the contrary the writer is of the opinion that, on the basis of the general definition suggested in the next chapter, the scenario is common to all of them and therefore it was preferred to elaborate a single document. The decision was not shared by all the members of the AIPAM board, who therefore preferred to omit their contribution.

The above circumstance is mentioned just to highlight the importance of the matter both for the writer and all the others, even for those that decided to remain aside and namely for that.

It is therefore obvious that, although this document is issued under the AIPAM logo, it does not mean that either all the AIPAM Members or the mentioned contributors concur in full with its conclusions, and it is to be considered just the start of an open discussion.

_____ ♈ _____

Contributors

Ian Biles
Marco Calabria
Massimo Canepa
Attilio Gay
Andrea Gennaro
Giulio Gennaro
Giorgio Mattarelli
Alessandro Sommella

2. The Preventative Marine Survey

In the maritime industry various types of preventative surveys have been established, they might appear to be very different, however they have the same approach and purpose:

> "an Expert is requested to Survey an asset and to issue a Report to be used by the Principal, who is not supposed to have the same technical skill. The Surveyor will obtain a remuneration for his service by the Client."

The wording of the previous sentence was carefully chosen and it is the most general one it was possible to elaborate. Adding details or definitions would lead to some preliminary conclusions or classifications which are the not to be anticipated, being one of the purposes of this document.

By definition, this type of surveys is not carried out as a consequence of a casualty, failure, damage.

2.1 The Principal

Let we assume (and it is not necessarily true, as it will be discussed in the following), that Principal and Client are the same subject. They could be

- banks requested to finance an operation,
- insurers covering a risk,
- perspective owners,
- perspective charterers,
- any body, organization, single person which has or might have an interest in the asset itself, in the goods and persons transported, in the people working on it, in the area where the asset will operate, in the way the asset is operated by a manager or by a managing company.

2.2 The Expert

The Expert is someone that the Principal considers sufficiently reliable to survey the asset, to assess its state and to describe its conditions, thereby allowing the Principal to have sufficient information to take decisions.

2.3 The Asset

Limiting our attention to the usual fields of a maritime surveys, the Assets could be ocean going vessels, river boats, yachts, shipyards and boatyards, in

practice anything which is expected to float on the water (or even simply touching it) or to be loaded and transported above it, or to give a service to the same subject-matter (e.g. yards and repairers).

2.4 The Survey

The Survey consists in an assessment of the condition of the Asset, in some cases following guidelines or check lists imposed or suggested by the Principals, in other cases relying on the judgement and on the personal experience of the Surveyor. The survey could be documental, just visual or requesting specific tests and checks.

2.5 The Report

The Report (and not the Survey itself) is the product that is sold by the Surveyor. The Report will process the findings of the Surveyor, digested by his personal skill and experience, in terms which can be understood by the Principal, who does not necessarily have the same technical skill. The Report must contain not only all the information necessary to the Principal, but also those that are considered important by the Expert.

2.6 The Client

By adopting the common sense, the Client is the subject who pays the product, i.e. the Report. Again, by using the common sense, by default the Principal (i.e the Party instructing the surveyor and interested in the assessment of the Asset) should coincide with the Client. This is not always true, as there are various cases of preventative surveys requested by Principals having interests completely different from and sometimes conflicting with the ones of the Client.

_____ ♈ _____

The above definitions and classifications already anticipate some of the difficulties of any preventative survey, however they will allow to have a common description and understanding. How are they transferred to the real life? Few hints are suggested in the next section.

3. The Preventative Marine Survey in Practice

Despite any theoretical assumption and good will, there are various limitations in carrying out a survey. These limitations are to be known and taken into account by all the parts involved, in order to reach an honest understanding of the subject-matter.

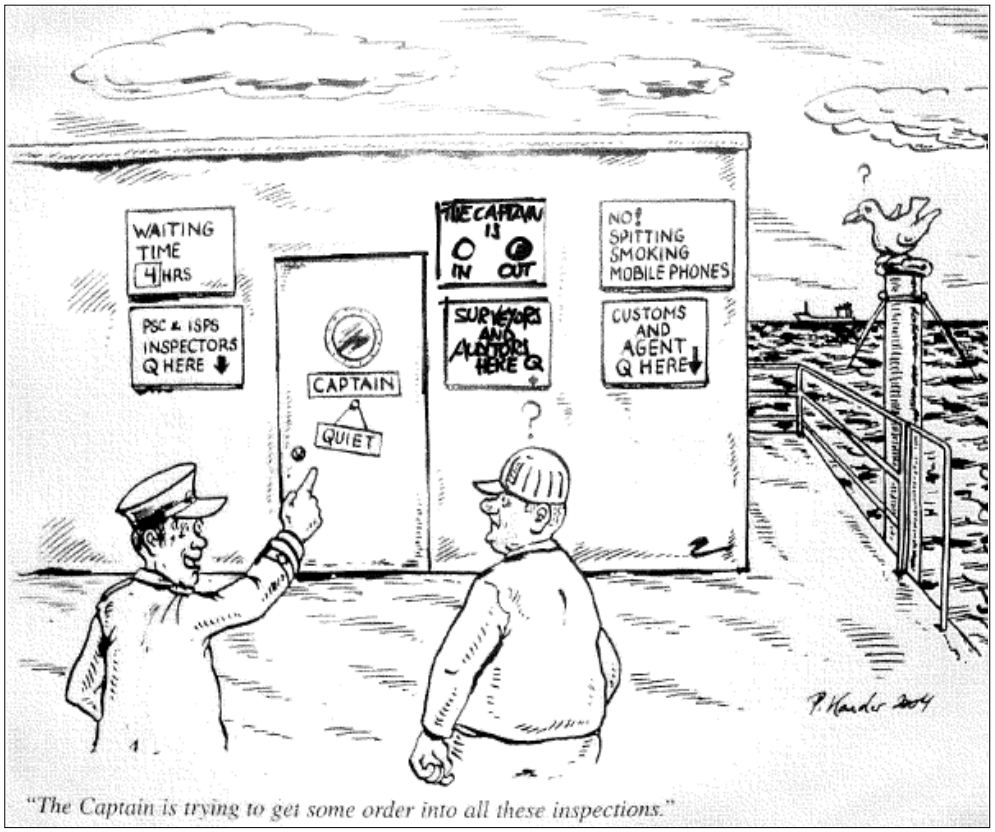
3.1 Time limitations

The surveyor cannot prescind from the assistance of the crew, not only for obvious safety reasons, but also for less obvious aspects relevant to responsibilities and liabilities. For instance, the surveyor is not to operate directly any equipment, he has to ask the crew to do that for him.

In addition, even if neglecting the above mentioned concerns, it would be a tremendous waste of time to board a vessel and to begin wandering around without a guide.

Furthermore, to observe the crew while operating an a piece of equipment or carrying out an ordinary duty gives additional information on the level of training, maintenance, safety awareness.

We must therefore conclude that the crew has to participate to the survey. Which is their feeling? Not very different from what shown in the following.



"The Captain is trying to get some order into all these inspections."

The sad point is that the seamen are basically right. The number of surveys on board, carried out by different bodies, is enormous. The same things are usually requested over and over (the same documents, the same tests, the same places to be surveyed), however the surveys are never coordinated between one and other, not to mention the lack of any integration.

This could lead to a lazy attitude and causes interferences with the necessity of the crew to periods of rest as per STCW convention (which, between brackets, the surveyor quite often has to confirm it was scrupulously complied with).

Even assuming that the entire crew, or a qualified part of it, is available for the survey (which is very seldom the case), still the tiredness of the surveyor and his reduced capacities of judgement must be taken into account.

The same constraints which have to be considered for the crew have to be applied also to the surveyor. It is not possible to imagine that his mind will remain brilliant and sharp after hours of surveying in a number of compartments with a temperature of 38° C and 95% of humidity. The surveyor will need to rest and it might be necessary to leave the vessel and return. This option is simply not even considered by the Principals or by the Clients.

The vessel has her own commercial schedule and any delay will cause economic losses several times higher than the fees of the surveyor. Is it reasonable to imagine that a vessel would postpone the departure just to allow the surveyor to complete his task without putting him under an unbearable pressure?

Time is therefore one of the enemies of the survey.

3.2 Physical limitations

Any survey is also limited to a great extent by physical limitations, such as the lack of safe access (both caused by the atmosphere of the area or by the need to reach high but unprotected locations), or by the insufficient lighting and ventilation, or by the inaccessibility of spaces ([1]).

These physical limitations exist and is hypocrite to deny their importance.

([1]) It is quite difficult for a reader to have the proper feeling of how limited are the possibilities of a surveyor, without having a direct experience of it. Some practical examples are given in appendix "i".

3.3 Information limitations

After a surveyor is appointed, the very first actions are to be focused to gather as much information as possible about the asset to be visited. Any successful preparation in advance will greatly reduce the possibility of mistakes during the survey.

It is not infrequent that preventative surveys are requested because the Principal is aware of a preceding history of failures, damages etc., however these information are rarely shared with the surveyor before his attendance, with a detriment to the results of the survey.

In fact, information given in advance allow to focus the attention on the items and details which, either because expressly warned about or because compared with previous experiences, deserve more attention.

It is obvious to everybody that a compartment permanently ballasted with fresh water is less prone to corrosion than a ballast compartment in which sea water is pumped routinely in and out and where a bulkhead is in common with an heated HFO tank. If the time is insufficient to visit both of them, then the second has to attract more attention.

In addition, without preliminary information it is not possible for the surveyor to plan adequately the survey and to give in advance appropriate instructions about the procedure which will be followed (e.g. to indicate which compartments are requested to be ventilated and opened for access) such as to obtain sufficient preparation and assistance.

Conditions of Class, thickness gauging reports, drydock and maintenance reports give invaluable support which can lead a trained eye to the proper

detail or trouble. None of these information is usually available in advance to the surveyor, who is therefore unaware of what he will survey.

The lack of information prior the survey causes also uncertainties in its the duration and cost. If at least 25% of the ballast compartments is to be inspected, but the total number is unknown, how many will be to be visited, the 25% of 6 or of 36?

It should be further noted that the possibility of obtaining reliable information upon boarding is not only very limited but also time consuming. Precious hours, which could be effectively used to ascertain the actual physical condition of the asset, are to be spent perusing documents which could be made available well in advance.

In addition, some of the information are to be given by the crew or by a superintendent. They could be poorly informed, or even worse they could hide facts or outright lie to the surveyor and there is no way to avoid it.

Another serious aspect is relevant to the reliability of information when provided by third parties. In general, they have to be considered correct unless the contrary is clearly proven and this brings to a philosophical absurd: if the surveys already carried out in the past are to be taken as reliable (e.g. the ones of the Classification Society), because the surveyor has to use their findings, why to appoint a surveyor for a further one? Which additional value the surveyor is expected to give?

3.4 Skill limitations

The surveys include the inspection of the hull in all possible shapes and construction materials, from steel to unknown composites, machineries, electronics, seamanship, working organization, national and international laws and regulations, construction and safety standards, etc.

Despite of any effort to maintain an adequate training, there is no possibility to know everything. There will be always something which is unknown because either too recent or TOO OLD.

Whilst new solutions, at least theoretically, could be examined and studied by a continuous professional development, the only way to afford old ones is to rely on the personal background and to understand by comparing the new experiences with similar cases which were already seen. However this is not always possible.

An example: more and more vessels are going to be fitted with an ECDIS (Electronic Chart Display and Information System), its use will increase in the future and it will replace the paper charts. At the time of writing, there are more than 30 different manufacturers, they have no common standard and just to understand if the ECDIS is properly used, the surveyor has to ask some 50 key questions (source: Mr. Mark Broster, ECDIS Ltd., IIMS Conference 2011).

Is it reasonable to assume that a medium skilled surveyor will not only know which are the 50 questions, but also the answers to be expected for each equipment produced by any of the manufacturers (without considering the technological progress within the same firm)?

Therefore we have to admit that the surveyor can be, at least, partly ignorant (without necessarily being inadequately trained).

3.5 Technical limitations

Not only the personal skill limitations and the personal ignorance greatly interfere with the capacity of judgement of the surveyor. There are cases (especially in the fields of the "new technologies") in which the surveyor is not supported by a complete set of information, due to confidentiality restrictions.

How to assess the condition of a standing rigging of a sailing yacht, where the shrouds are made by Poly(p-phenylene benzobisoxazole) (PBO) or "high-performance" polymer fibres, the exact composition of which is known to the manufacturers only and the performances of which in the medium term time are still unknown even to the producers?

How to give an opinion on the reliability of a bearing of a turbocharger, if the running parameters and loads of the impeller are not disclosed by the manufacturer?

Are the Principals keen to accept an honest "I do not know" in the report?

Some of the technical limitations could be overcome by using specific testing equipment, which however require substantial investments, in some cases not affordable by a non-specialist surveyor.

An example: works are in progress to define a procedure, to be incorporated in an ISO standard, to define the quality parameters of coating for super-yachts. When they will be finalized (presumably quite soon) they will require the use of specific testing apparatus and the estimated cost of a complete set is in the figure of about 80,000 GBP (source: Mr. Peter Morgan, Lithgow Associates, IIMS Conference 2011).

Is it reasonable to imagine that each surveyor requested to carry out a pre-purchase survey of a super-yacht will have such equipment promptly available? How many surveys per year will have to be carried out to cover the cost and to allow a reasonable confidence in the use of the equipment and in the interpretation of the results?

3.6 Modifying conditions

How long what saw by the surveyor will remain in the same conditions?

The lack of maintenance can allow for very rapid deterioration and the surveyor has no tool to be speculate about the future. Also the operational scenarios, the crew, will vary at a great extent and the asset will not remain the same.

The following (real) example is quite peculiar.

Due to market pressure and bankruptcy, a major shipyard had a tremendous shrinkage of the workforce, which collapsed from almost 2,000 people to 100. The area of the shipyard remained physically the same, however just a couple of the berthing places were used, because there was insufficient manpower to manage efficiently all the others. At the time of the survey, carried out following the JH143 guidelines ([2]), just a single vessel was under minor repairs and the internal workforce, with the support of skilled and properly chosen and inducted sub-contractors, was sufficient for the task.

The same resources which were found satisfactory at the time of the survey will be immediately insufficient when the commercial manager will succeed in finding more customers and 4 ÷ 6 vessels at the same time will be moored within the facilities of the shipyard.

Which is the validity of the survey as carried out? Is the surveyor liable when the conditions can change to such a great extent without any possibility for him to intervene or to advice?

([2]) A guideline commonly used within the Insurance industry to assess the conditions of a shipyard

3.5 The reporting

The surveyor, having carried out the survey with all (and even more) the mentioned limitations, is requested to issue his report, which has to be prompt, accurate, detailed, correct, fair, etc.

The Principals expect to receive firm and precise information and they are therefore unhappy to read sentences as "as much as possible", "as soon as possible" and so on. Any recommendation has to be clearly indicated, often including the procedure to rectify the non-conformity, the time requested and/or the cost involved.

The comments of the surveyor are therefore to be circumstantiated and are binding for the issuer.

Are the instructions by the principals at the same level?

Unfortunately no.

Despite the surveyor is requested to be accurate and detailed, too often the instructions, guidelines, suggested reporting forms contain generic sentences which are at least disputable. See appendix "ii" for an example.

4. The Risk Assessment

In the past the way in which a preventative survey was to be carried out was left to the skill and experience of the surveyor. Step by step, sometimes in a subtle way, sometimes more explicitly, guidelines and check lists were issued and the surveyors are now expected to comply with them.

Limiting our attention to the Insurance industry, and in particular to the Hull and Machinery Underwriting sector, first appeared the JH115, which were followed by the JH143 and then by the JH2006/10. All of them are guidelines on how to conduct a preventative survey and it is not the purpose of this section to enter in detail into their structure or even to describe them.

What is important is that the focus shifted from CONDITION ASSESSMENT to RISK ASSESSMENT.

The surveyor is therefore no more requested to take a picture of the Asset as such (and it was already commented how limited, partial, personal it is) but to do something more and different.

The Risk is "*the possibility of something bad happening"* (Oxford Dictionary). By the same source, to assess means not only "*to judge, estimate*", but also "*to determine, calculate, weigh up*".

Therefore the wording "risk assessment" means to judge or to calculate something that is still to happen (and hopefully it will not). The surveyor is no more just describing facts, but making speculations and giving opinions.

Is it fair?

How can a surveyor dare to extend a limited perspective to a wider and unknown world? Has he to rely on his past experience only? Is the Principal well aware of the difference between what was SEEN and what was SUPPOSED?

Even more important, who is setting the boundary between acceptable and unacceptable risk? If the surveyor issues a report concluding that "the vessel will represent a risk not higher than that usually accepted by Marine Underwriters" (The sentence is an usual closure in many reports issued after a condition survey for hull and machinery underwriters) he will take upon him the burden of setting the limit of acceptability.

5. Rewards

We described some aspects of the preventative surveys, giving a few details on how difficult they can be and how they could lead to mistakes and misinterpretations. However are the preventative surveys rewarding for the surveyor?

If the surveyor is looking for personal professional gratification, carrying out this type of surveys he will have a dramatic impact against his ignorance. In a Socratic way, he will have learnt something more. However, in general the surveyor has not such an elevated purpose and he wants an income from his activity.

The market is not very well disposed on this matter.

If the Principal is a perspective owner, possibly he will appoint several surveyors to visit a few different assets. Most of them will be discarded and (perhaps) just one will be chosen. The cost of the preventative survey is just an expense, which in most of cases is giving no result and it has to be reduced to the minimum.

Even more peculiar is the case of banks and insurers, who instruct surveyors, but leave the cost of the survey to their client. Apparently, this has no immediate consequence for the surveyor, but reality is different since the costs often are not simply to be BORNE, but also to be PAID by the client.

In such a case the surveyor remains completely exposed to the pressure of the same party that he is supposed to "control", and which is of course interested in minimizing the cost. How can this be achieved? For instance by reducing the time available for the survey and consequently reducing the time for the complete assessment.

Moreover, if the results of the survey are "unpleasant", the bill can be easily forgotten for a while (let us say some years) or just left unpaid.

Apart from these possibilities, which are not the exception but way too often the norm, in general the surveyor has very poor information about the company to which he will have to send the bill. In some cases the Client will disappear just after the survey.

6. Liabilities

6.1 Jurisdiction

In order to set the mainframe of the liability of the surveyor, taking into account the international world in which he operates, it is necessary to understand which is be the applicable jurisdiction.

Is the one of the surveyor? Of the Principal? Of the Client? Of any of the stakeholders (co-insurers, re-insurers, owner, perspective owner, charterer, broker)? Of the Flag state of the vessel, of the place where the accident occurred or where the survey was carried out? Or possibly any of them?

The answer is not so straightforward and it might be impossible to be given.

Naïve attempt by local interests to root the jurisdiction in different countries could be quite easily contrasted, nevertheless such contrast is to be sustained by local advisors and correspondents, who will of course issue their bill.

If someone is still confident that sentences in the "General Terms and Conditions" about the applicable jurisdiction would suffice to put a firm point, he is strongly advised to read carefully appendix "iii".

6.2 Liability of the Surveyor

All the sentences that in the following are quoted between brackets and in Italics were obtained from an interesting course on Legal and Insurance Matters held for the International Institute of Marine Surveying by Mr. Jonathan Hadley-Piggin, BSc (Hons), MA, Dip Law, MNI, MRIN, MHCMM, ACI Arb, the complete and careful reading of which we strongly suggest.

"*Negligence is an example of a tort where one party owes a duty of care to another (the "reasonable man") and fails for some reason in that duty. A marine example would be where a surveyor is instructed to survey a yacht prior to purchase. The owner purchase the yacht following the expert's report and subsequently the yacht is found to have defects, which a surveyor, as a reasonably competent expert in his field, should have picked up* ([3]). *This would be a claim against the surveyor for negligence as the owner has suffered loss".*

([3]) The issue of competency can be very vague and disputable. Examples are given in appendix "iv".

Regardless of the fact that the surveyor could win the case, he will be sued and he will have to afford legal expenses. An insurance covering also legal expenses would therefore be more than appropriate.

Unfortunately, one of the most experienced insurer in the industry, usually providing professional indemnity insurance for maritime surveyors, clearly warns that the surveyor is not covered in respect of the pre-purchase (or condition) survey of yachts or pleasure crafts. Another case where the burden is left solely to the surveyor.

As the losses in the maritime industry are huge, so huge that Owners look for insurance and Insurers in turn look for Co-Insurers and Re-Insurers, can a surveyor even think to afford this burden in full by himself? Can he limit his liability?

Again from Mr. Hadley-Piggin work:

"*Professionals in particular can in some circumstances limit or exclude their liability for their performance in contract and tort. The usual way for surveyors and brokers would be to incorporate an exclusion clause in the terms of engagement or sales particulars. These efforts to restrict or exclude liability are subject to the court's determination and statutory limitations on such exclusion provisions.*"

Therefore, the limitation of liability is not automatic, but is it reasonable that the Surveyor would be liable for damages which impact is many times more important that the extent of the survey itself and of its remuneration?

The surveyor is left even more exposed than a Salvor, who is protected by the 1976 Convention on Limitation of Liability for Maritime Claims which states that the limitation of liability of the Salvor will remain valid unless "*it is proved that the loss resulted from his personal act or omission, committed with the intent to cause such loss, or recklessly and with knowledge that such loss would probably result*".

Nothing similar applies to the surveying activity. Whilst there are no doubts that Salvage is more perilous and profitable than any preventative survey, the risks appear to be higher for the preventative survey.

6.3 Liability to the Principal and to the Client

It is clear to everybody that the preventative marine survey is a particular type of professional service, it is (or it should be) governed by a contract and therefore it is unavoidable for the Surveyor to be liable to his Principal and Client.

It is quite common that preventative marine surveys are requested as a warranty by underwriters or banks. As anticipated in previous chapters, in these cases the surveyor is chosen and instructed by them (the Principal in our definition), however the cost of the survey has to be borne by the perspective insured or by the client of the bank (the Client). To an extreme, the costs are not simply to be borne, but the invoice of the Surveyor to be physically paid by the Client.

However, apart form the trivial economic matter, whenever the Principal is different from the Client, who is going to read and sign for acceptance the carefully prepared "General Terms and Conditions" of the surveyor? The body instructing him or the one which is supposed to pay? With whom there will be contractual obligations?

To whom is the surveyor liable? To the choosing and instructing body or to the paying one? Or to both of them?

How a contractual agreement can be obtained if the parties are not clearly individuated?

6.4 Liability to Third Parties

Any occurrence which could be attributed, regardless of its reasonability, to a negligent or careless performance of a surveyor has an impact on third parties.

"In the maritime world, as in commerce generally, parties are entitled to exclude, limit or cap their contractual liabilities by the use of appropriate terms in contracts entered into with others, subject only to statutory restrictions or limitations generally intended to protect consumers. But, being contractual terms, such exclusions are of no significance where a claiming party has no contractual relationship with the alleged wrongdoer; the injured party will therefore bring their claim in tort (or local equivalent) on the basis of negligence." (Trevor Harrison, Maritime Arbitrator, Mediator and Legal Consultant – "An Introduction to Marine Claims, Lloyd's Maritime Academy, 2011).

It is therefore clear that the surveyor will have unlimited liability regardless of the value of the rendered service, towards an imprecise number of parties. Again, risks are higher than for a Salvage.

6.5 Risk Analysis of the Consequences of Liability

Having listed some of the aspects of the preventative marine survey, let us analyse the risk for the surveyor to be sued. A very simple risk analysis procedure will be used, as described in the "Guidance Notes on Risk

Assessment Applications for the Marine and Offshore Oils and Gas Industries" – American Bureau of Shipping, 2000.

First of all, a categorization is required and the analyst must define the likelihood and consequence categories to be used in evaluating each scenario and define the level of risk associated with likelihood/consequence category combination. Frequency and consequence categories can be developed in a qualitative or semi-quantitative manner.

In our case we will use qualitative schemes (i.e., low, medium, or high) and criteria.

The consequence of being sued could be

1. Negligible. No time/money consumed, no damage to reputation.
2. Marginal. A limited amount of time/money will be spent, the level of confidence of the industry/market in the surveyor's services will be regained soon.
3. Critical. The surveyor will have to react fiercely, huge amount of time and money will be spent, the future of his business is at risk.
4. Catastrophic. Bankruptcy.

Which is the likelihood to be sued?

1. Low. The mishap scenario is considered highly unlikely.
2. Low to Medium. The mishap scenario is considered unlikely. It could happen, but it would be surprising if it did.
3. Medium to High. The mishap scenario might occur. It would not be too surprising if it did.
4. High. The mishap scenario has occurred in the past and/or is expected to occur in the future.

Having categorized the consequence and its likelihood, they can be entered in a matrix, therefore evaluating the risk.

Which is the risk for the surveyor carrying out a preventative survey?

Without any, or at the very best, difficult limitation of liability, the consequences are at least Critical. In lack of adequate insurance coverage, they can be even catastrophic and the specialist insurers covering the professional indemnity of surveyors are rare and their clauses very specific.

More and more cases are known of surveyors being sued for negligence or because considered liable for a loss, therefore the likelihood is at least Medium to High.

In some particular cases the likelihood is so high to be considered sufficient to make void any professional indemnity insurance (e.g. pleasure boats, jurisdiction in USA, etc.). It means that in these circumstances the same parties which could be Principals of the Surveyor consider the risk too high to be covered.

In the following is shown the resulting matrix of risk built under the suggestions of the mentioned Guidance Notes and entering the results of our considerations.

CONSEQUENCE					
	Catastrophic	Acceptable	Marginal	Unacceptable	Unacceptable
	Critical	Acceptable	Marginal	Unacceptable	Unacceptable
	Marginal	Acceptable	Acceptable	Marginal	Unacceptable
	Negligible	Acceptable	Acceptable	Acceptable	Marginal
		Low	Low to Medium	Medium to High	High
		LIKELIHOOD			

The result is that for the surveyor the actual risk of preventative surveys is unacceptable and we have to conclude that with the given assumptions, it is insane for a Surveyor to accept any appointment to carry out them, regardless of their specific kind.

7. And now, How to?

It is not in the DNA of a technician to individuate a problem without trying to find a solution. In the previous pages the problems and difficulties have been listed, however the writer is well aware that answers and proposals are necessary.

The first question to be answered is: do the Principals want a scapegoat or do they want to know the findings of a survey?

In the first case, the answer is quite simple, as each party knows what the other wants and will act accordingly. No particular technical skill will be necessary and the surveyors are just to be expendables.

In the second case, if a serious survey is to be carried out, it has to provide reliable results, however without constituting an unbearable risk for the Surveyor.

Unfortunately, for the Surveyor there are no tools to limit the exposure of being sued by unknown third parties or to be accused of a criminal offence. In these cases, the only way the writer sees to have a certain possibility of self-defence is to make it clear in any moment what was requested to be and what was actually surveyed. This is also a fair and open approach to determine the contractual obligations to the Principal.

The survey has to give the picture of the asset and to exclude any personal assumption. The writer is therefore of the firm opinion that the surveyors have to make a step back from the "Risk Assessment" and to return to the "Condition Survey".

There are discussions on this matter, even among surveyors. There are qualified positions pointing out that to give just the picture of the asset it is sufficient a photographer and a surveyor is not necessary.

As a matter of fact, even a simple photo is telling a story and a photographer non-surveyor would not have any story to tell, without a good technical background.

In addition, any photo requires to be described to be fully understood by the Principal, who often is not an expert technician[4].

(4) The same photo can give very different information, an example is shown in appendix "v"

The writer is therefore of the opinion that the surveyor has a key-role and that the approach to preventative surveys has to be changed.

The industry and the market have to give the surveyor the possibility to prepare adequately the survey, for instance a minimum set of documents is to be made available well in advance (at least 2 weeks), e.g.:

- General arrangement
- Tank plan
- Safety plan
- Fire control plan
- Latest thickness gauging report
- Latest drydock report
- Latest PSC report
- Latest internal SMS audit
- Latest External SMS audit
- Latest superintendent report
- Updated list of certificates and surveys issued by the Class
- List of Recommendations and Class Memos
- Latest lube oil analysis results

After the survey, the surveyor has to state what he saw and what he checked, how and with which results. No opinion is to be given on what was not directly experienced, i.e. compartments which were not visited, equipment not seen in operation. Nothing has to be extended or assumed.

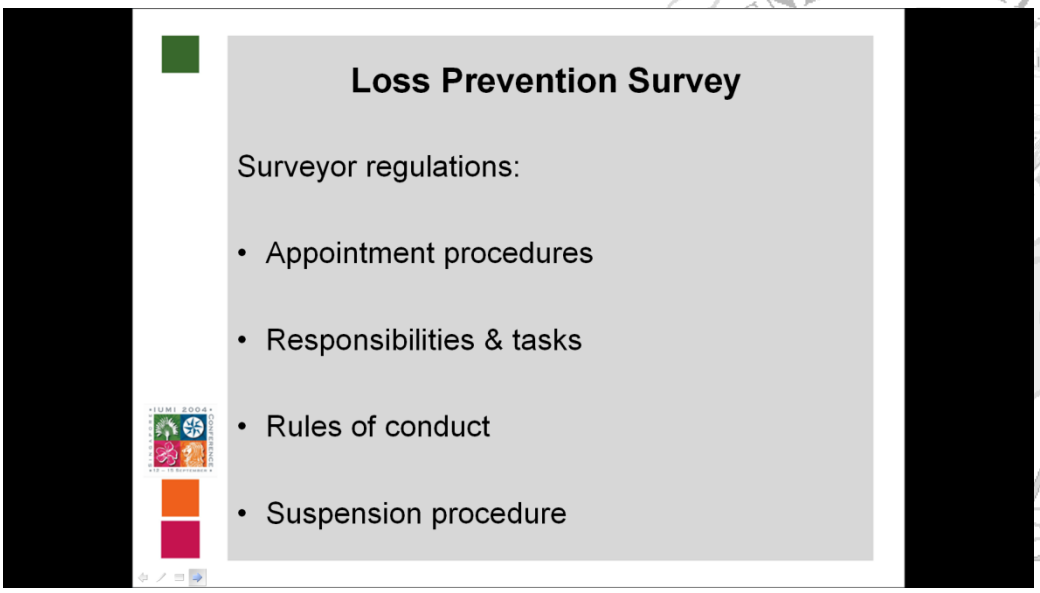
No generic sentence is to be written and the decisions are to be left to the Principals. No statement is to be given if the asset would deserve the price, if it is seaworthy, if it is safe in general terms.

It is to be made very clear that any survey is and is to remain "on sample basis". It is not fair to extend the liability of the surveyor to what he has not seen and in the case the Principals will find the survey report insufficient because not enough details were inspected, it is up to them (and it is in their option) to ask for a more detailed assessment, either to the same surveyor or to another one.

E.g. if a certain number of fire-extinguishers was seen, they have to be listed and what was checked is to be specifically mentioned (the position, or their marking, the pressure, or the tag recording the tests and so on). If the surveyor looked at 5 extinguishers out of 15 and the Principals will find the number insufficient, they will have to ask for an extension of the survey.

The above is another strong reason for the expenses of the survey to be borne by the instructing party, which by this way will be also in the position to balance the cost with the results.

The issue is not new: already at 2004 IUMI conference (Singapore) Mr. Harry Mulder presented the following slides.



Note that the same topics discussed in these notes were mentioned at that time, however in the opinion of the writer no substantial improvement was obtained.

First of all, in the opinion of the writer, the Principal and the Client must be the same body and the contractual obligations, hence the liabilities, of the surveyor are to be to the Principal, who from now on is considered to coincide with the Client.

The contractual agreement has to be clear and the Principal has to accept the way in which the survey will be carried out.

It has to be made clear that the survey is giving the picture of the asset at the time of the survey, how to use this picture, how long and with whom it has to be in the exclusive evaluation of the Principal and at his sole responsibility.

The findings of the survey are not to be considered confidential (it would be in contradiction with the necessity to obtain use and rely upon any type of information from third parties which can be gathered before and during the survey), however the surveyor is to be notified to whom the Principals disclosed his report.

It is to be made clear that the Principal, by disclosing and distributing the report to third parties, establishes and has to fulfil to contractual obligations which are different and separate from the ones binding him to the surveyor. It is therefore the Principal and not the Surveyor that is to be liable for the use of the report in front of such third parties.

8. Conclusions

The values involved in the marine business are so huge that most of the surveyors will never have sufficient resources to withstand a claim against them for a damage following a preventative survey and to that someway attributed. Even a professional indemnity coverage could be sometimes insufficient.

When the above will be consciously accepted by all the parties and measures will be taken to agree upon the limits of the preventative surveys and to reduce their inherent risk, both for surveyor and Principal, they could be used as a proper tool to assess the condition of an Asset. Otherwise the preventative surveys will be ineffective and they will only be embarked upon by surveyors who have no other option, hoping then for the best.

Are these the skilled and reliable professionals the industry wants?

Do we agree that the system of the preventative surveys has to be reconsidered, at least among the professionals of the industry?

In the opinion of the writer the answer (or even the absence of it) will set the course of the preventative surveys and how they will be carried out in the next years.

Genoa, 9 August 2011

Alessio Gnecco
FRINA, CEng, MIIMS, AIPAM

9. Appendices

i. Physical limitations of a survey

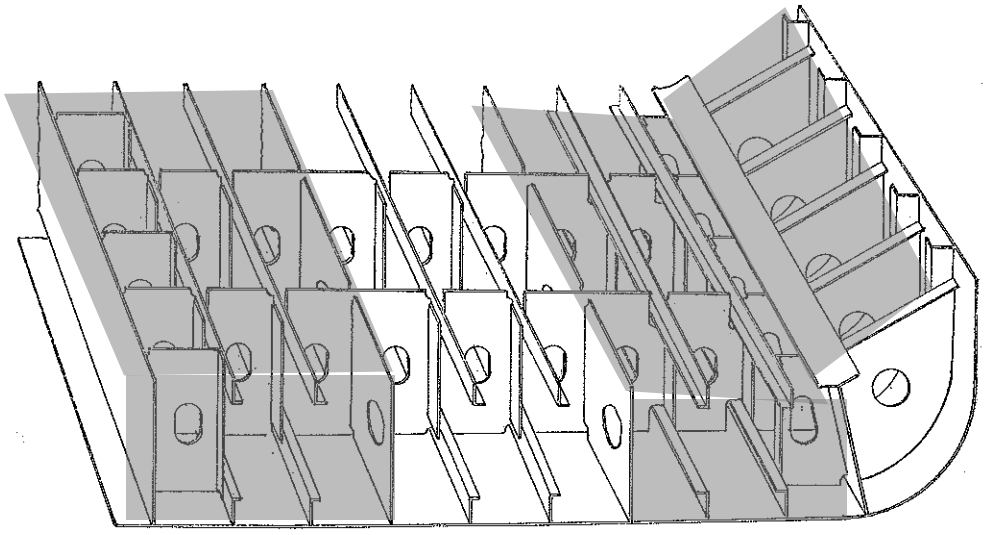
A survey is reliable only if the item to be surveyed can be reached by the hands of the surveyor.

This sentence might be surprising, but it is a part of the common physical experience (e.g. the reader can witness what is written on this page, which can be touched, but he cannot give any opinion on the following page, which is still out of his direct sensorial experience).

Let us to describe a very simple structural survey.

When a surveyor enters in a double bottom he can see in a very limited volume all around him. What is out is fully unknown.

The following sketch shows a typical section of a double bottom of a small general cargo, leaving clear what can be seen by the surveyor, while he is passing through the manholes from fore to aft. What is grey, is invisible.



To inspect all the remaining parts, the surveyor should go up and down several times in the same double bottom.

Is it possible? Of course yes.

Is it reasonable? Unfortunately no.

The surveying speed in double bottom can be estimated in about 1 ÷ 4 linear meters per minute, depending from the easiness of access, dirtiness of the area, age and physical shape of the surveyor, number of defects which are found.

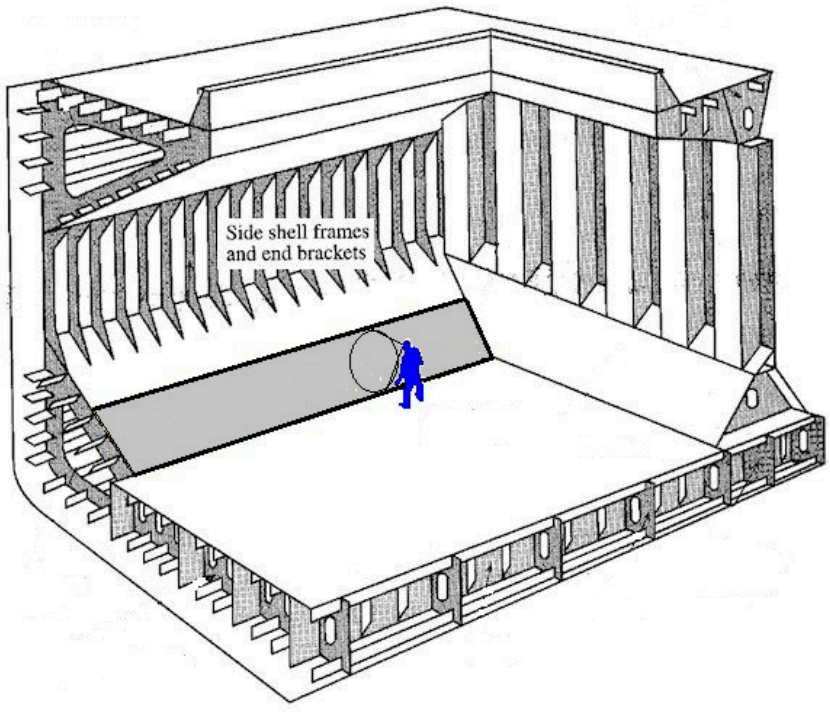
A typical double bottom of a capesize bulkcarrier can be 50 m long. Just to enter from one side and to reach the manhole on the opposite side and in the meanwhile surveying the volume all around (imagine a worm digging a tunnel having a diameter of a couple of meters) requires 20 ÷ 30 minutes. If the surveyor is requested to visit completely the entire double bottom, which can be more than 20 meter wide, 10 times that will be necessary, which means 200 ÷ 300 minutes.

Let we assume that the vessel to be surveyed has 10 double bottoms and 10 topside tanks and that just 25% are requested to be inspected. This means 5 compartments. Is it reasonable to schedule at least 20 hours just for this task?

Getting out of the ballast compartments, the cargo holds.

The bottom brackets of side frames of a single skin bulkcarrier can be at more than 4 meters from the tank top, where the surveyor will be walking.

They are one of the details more subject to damage, but they are at more than 2 meters from the surveyor's eye, whilst a dangerous crack could be a few centimetre long and partly covered by cargo residues.



The previous figure shows the relative dimensions of a man in a cargo hold of a single skin capesize bulkcarrier and the shaded surface highlights the area that

can be directly examined. All the most interesting (and dangerous) items are well away from his sight.

Is a close-up survey possible? In part of course yes, as at least the lower end brackets can be reached using a portable ladder, however without other devices, such as cherry pickers which is usually not available during a condition survey, there is no way to reach the upper ones.

Let we accept this limitation and focus on the lower ones only. Is it reasonable for the surveyor to reach ALL of them, taking into account that ANY of them could have been damaged by a grab during a previous discharge? Unfortunately no.

Let we assume that to put a ladder in position, to climb up, to survey the two brackets on each side and to come down would take 1 ÷ 2 minutes, this operation is to be repeated at least 30 ÷ 35 times on each side of the hold.

If just 3 of the 9 holds of the bulkcarrier are to be surveyed, this will need more than 5 hours, without considering the time necessary to descend from the deck to the tank top and then to climb up to enter into another hold.

By following this hypothesis, our very accurate and indefatigable surveyor has already spent more than 24 hours and he carried out a complete survey of 5 ballast compartments (out of 20) and of the lower side stools, including lower side brackets, of 3 holds (out of 9).

Was he negligent? Probably yes, because focusing on the lower stools he failed to observe the upper brackets and the transversal bulkheads. Also, his indulgence to a complete survey of the few ballast compartments in which he entered, brought him to omit any survey in fore and aft peaks, main deck, tank top, side shell, hatch covers, just to mention, however not limited to.

He worked for more than 24 hours without rest, he requested and obtained the assistance of at least 3 ÷ 4 crew members for the same period (one to remain in stand by with breathing apparatus and VHF at the entrance manhole of the compartment, one accompanying him, one ready to be called for assistance, as to lower down, to position and to keep in place the ladder). The preparation of the survey requested an accurate and on-purpose de-ballasting and ballasting sequence, fitters were used to open and reclose the man-holes, however the survey as carried out was grossly unsatisfactory and he was negligent.

ii. Generic and dangerous instructions

An instruction, obtained from the web site of an Insurer:

Instructions for Surveyors

This section is dedicated to surveyors appointed by [...omissis...]. Here you will find instructions and downloadable report templates.

[...omissis...]

1. Damage Surveys

[...omissis...]

1.3 Vessel condition statement

The surveyor is requested to make observations as to the general condition of the vessel during the course of the survey. It is envisaged that this is done within the normal damage survey time and no extra efforts to be made. Any extra time required is to be agreed with [...omissis...] prior to proceeding.

VESSEL CONDITION STATEMENT

Vessel name/IMO no:

Place/Date of survey:

Surveyor/Company:

- ☐ Afloat
- ☐ Dry-dock

In the opinion of the Undersigned Surveyor, based on observations in connection with damage survey on the above date(s), the general condition of the above vessel would appear to be:

- ☐ Excellent
- ☐ Good
- ☐ Fair
- ☐ Poor condition, further survey is recommended

The statement is based on observations of:

- ☐ Hull plating
- ☐ Rudder/Propeller
- ☐ Main deck
- ☐ Cargo gear
- ☐ Bridge
- ☐ Accommodation areas
- ☐ Cargo spaces
- ☐ Ballast tanks
- ☐ Engine room
- ☐ Pump room

Comments:

By such an instruction, the surveyor is requested to issue a generic statement on the vessel condition (note: to be sent to the Insurers separated from the report).

Is it fair and reasonable that during a survey for, let say, a turbocharger damage, the surveyor is to comment on the general condition of the vessel?

What it will happen if the surveyor confirms that in his opinion, "*within the normal damage survey time and without no extra effort*" the vessel is in fair condition and after while a casualty/damage will occur? No confidentiality or privilege is granted to the document, and sufficient reasons to be sued by the Principal or even by a third party are already on the table.

Or, let we assume that the surveyor recommends further survey, based on his "impression". Just to carry out a survey, some resources will be spent. Is the surveyor liable if his impression will be proved to be incorrect? Is it fair that the opinion leading to such an additional survey is to be conveyed to the Principal without the Owners of the vessel being informed?

Third case: the surveyor does not accept to issue and to sign the statement. Is he negligent because he did not comply with the instructions?

Just to add another penny. The "Vessel Condition Statement" is intended to be a document between the surveyor and the insurer, however it specifically states that "the general condition of the above vessel would appear..". By signing this statement the surveyor is therefore giving a firm opinion on the general condition of the vessel.

The same insurer, as a footnote in the form to be filled for a condition survey, warns that "*This survey report, which is and shall remain the property of the Club, is solely intended for the exclusive use of the Club to assess the general condition of the vessel at the time of the entry or during the currency of the insurance period. The report is not intended to be a definite review of the vessel's condition, and nothing herein shall prejudice the Club's right under the insurance policy should a dispute arise between the Club and the member relating to the condition of the vessel. Any and all parties interested in or affected by this report accept to be bound by these terms*."

So, after an on-purpose survey, which was requested exactly to ascertain the general conditions, *the report is not intended to be a definite review of the vessel's condition* between the insurer and the insured, whilst the surveyor is compelled to issue a binding statement on the same general conditions after a limited damage survey, however *within the normal damage survey time and without no extra effort".*

iii. The applicable jurisdiction.

The General Terms and Conditions of BMT Marine & Offshore Surveys Ltd., July 2007 stated:

"22. Governing Law

This Agreement shall be governed by and construed in accordance with English Law and the Client submits to the exclusive jurisdiction of the English Courts or Arbitration in London, England. Nothing herein shall prevent the Company from enforcing in any country an award made by the above exclusive jurisdiction."

A shipyard contracted with shipowners to carry out repair and conversion works. The contract was subject to German law. A shipyard and/or project risk assessment was carried out by BMT Marine.

The shipowners and shipyard were co-assured under an Italian law builders' risks insurance policy. The vessel was damaged by fire. Insurers (as assignees of shipowners) sued BMT, alleging failure to exercise reasonable skill and care in their risk assessment survey.

BMT commenced Part 20 proceedings against the shipyard, claiming contribution or indemnity should they be held liable to hull insurers.

Held:

The Part 20 claim was dismissed:

1 As a matter of German law, shipowners had agreed to waive any claim against the shipyard (except for certain specified losses);

2 Under German law, the shipyard had no liability to shipowners for the fire damage; etc. etc.

Source: Shipping Bulletin on www.shlegal.com

And also

BMT MARINE AND OFFSHORE SURVEY LTD V LLOYD WERFT BREMERHAVEN GMBH (THE M/V "CALA PALMA")

[2011] EWHC 32 (Comm), Queen's Bench Division, Commercial Court, Mr Justice Simon, 24 January 2011

Contribution - German law - Fire damage to ship undergoing hot works at shipyard - Insurer and shipowner suing surveyor - Whether surveyor entitled to contribution from shipyard - Civil Liability (Contribution) Act 1978

In the present action, a surveyor claimed against a shipyard, seeking contribution or indemnity for any liability that it was found to have against the insurers and shipowners of Cala Palma, a ship that caught fire at the shipyard while undergoing hot works. The insurers and shipowners had in a separate action against the surveyor for damages claimed that the surveyor had failed to exercise reasonable skill and care in the performance of the survey, in particular in its review of hot works procedures. The shipowners and the yard were both named assureds in the policy. Italian law applied to the policy and the contract under which the yard had received the ship for repairs was subject to German law.

Simon J held as follows. As a matter of German law, the shipowners had by the contract between them and the shipyard waived any right to bring a claim against the yard. Also as a matter of German law, the shipyard could have no liability to owners in respect of the alleged loss. In case the judge was wrong on those issues, he also addressed the issue whether contribution could be claimed by the surveyor from the yard under English law, assuming that the Civil Liability (Contribution) Act 1978 applied. For this to be the case, the surveyor would have had to show that the shipowner was entitled to compensation in respect of damage done to the vessel against both the surveyor and the yard.

Source: www.i-law.com

It is to be concluded that, despite the General Terms and Conditions, the German law and not the English one was prevailing.

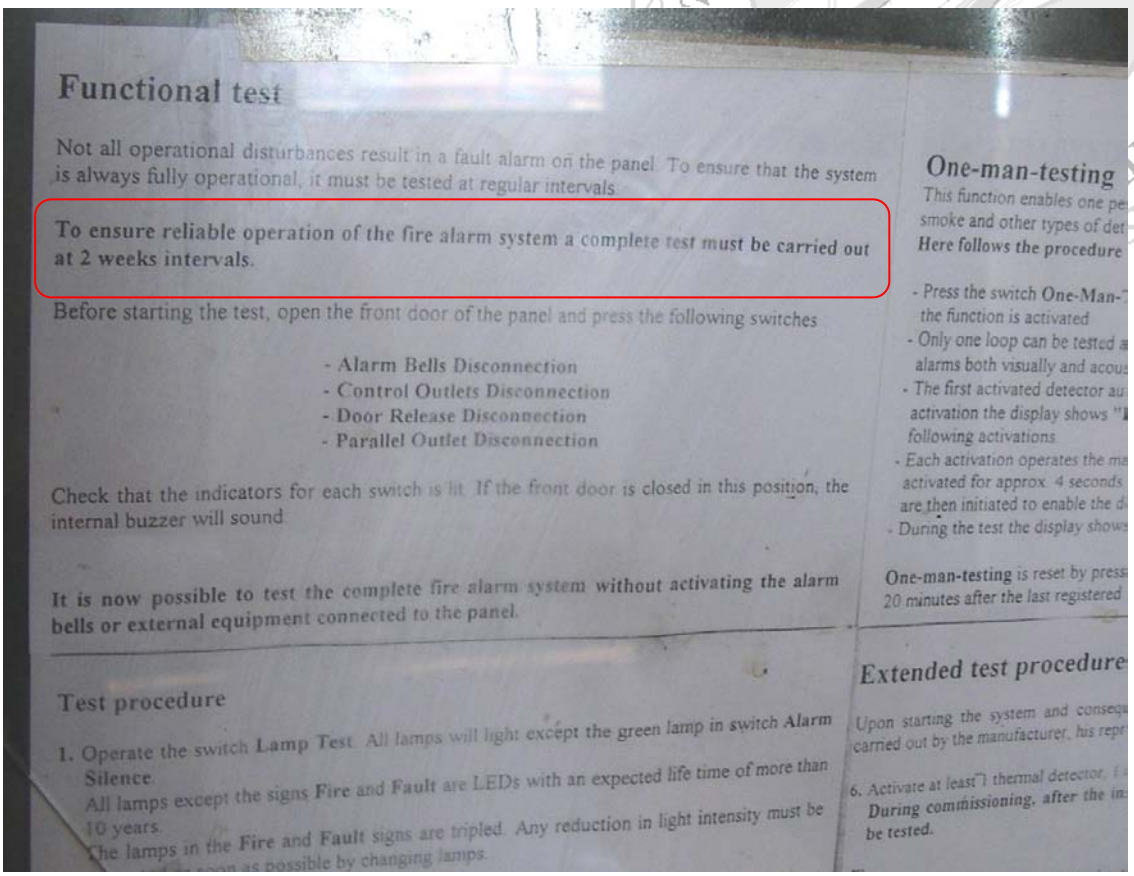
Final comment on this particular case. It is well known that BMT Marine & Offshore Surveys Ltd. bankrupted after this case. Unconfirmed news informed that they were condemned to refund the damage caused by their negligent behaviour, for an amount in excess of EUR 60,000,000 (60 million).

iv. Competency and Liability

Despite any effort, it is not possible to be fully updated and skilled about everything.

The only possibility is to apply a criteria of reasonability, which however sometimes can be misleading.

The following instructions were on a quite aged vessel. Please note the sentence that "to ensure reliable operation of the fire alarm system a complete test must be carried out at 2 weeks interval" and then some specific procedures were described.



Functional test

Not all operational disturbances result in a fault alarm on the panel. To ensure that the system is always fully operational, it must be tested at regular intervals.

To ensure reliable operation of the fire alarm system a complete test must be carried out at 2 weeks intervals.

Before starting the test, open the front door of the panel and press the following switches

- Alarm Bells Disconnection
- Control Outlets Disconnection
- Door Release Disconnection
- Parallel Outlet Disconnection

Check that the indicators for each switch is lit. If the front door is closed in this position, the internal buzzer will sound.

It is now possible to test the complete fire alarm system without activating the alarm bells or external equipment connected to the panel.

Test procedure

1. Operate the switch **Lamp Test**. All lamps will light except the green lamp in switch **Alarm Silence**.
All lamps except the signs **Fire** and **Fault** are LEDs with an expected life time of more than 10 years.
The lamps in the **Fire** and **Fault** signs are tripled. Any reduction in light intensity must be as soon as possible by changing lamps.

One-man-testing

This function enables one pe
smoke and other types of det
Here follows the procedure

- Press the switch **One-Man-**
the function is activated
- Only one loop can be tested a
alarms both visually and acou
- The first activated detector au
activation the display shows "
following activations.
- Each activation operates the ma
activated for approx. 4 seconds
are then initiated to enable the d
- During the test the display shows

One-man-testing is reset by press
20 minutes after the last registered

Extended test procedure

Upon starting the system and consequ
carried out by the manufacturer, his repr

6. Activate at least") thermal detector, [illegible]
During commissioning, after the in
be tested.

Who is supposed to inform the surveyor of these specific requirements? The same crew which is requested to be examined to verify their training and adherence to the procedures?

Or is the surveyor requested to study all the instruction books, just to understand which test the manufacturers consider sufficiently reliable?

Let we assume that these instructions were not posted, the surveyor checked the system in the usual way (by activating some of the sensors) and then a few weeks later a fire breaks out, however not immediately detected because the

sensors in the area at fire, which were not among the ones which were tested by the surveyor, had a failure. Was the surveyor negligent? Will he to be considered liable to third parties which have been damaged by the casualty?

Being sued for negligence, it is probable that the Court will ask to competent technicians to help them to determine whether the actions of the surveyor were reasonably correct.

How this competent consultant to the Court will be chosen? The options are so varying as different can be the Courts all over the world and within the same jurisdiction.

In U.S.A., any State is competent to issue laws governing the professions and quite often a CPD, Continuous Professional Development scheme is required.

The State of New York indicated which are the professions requiring a CPD and between those attending "Landscape Architecture" and "Speech-Language Pathology" also the "Professional Engineering" (i.e. those which are entitled to be competent technicians also as marine surveyors) is inserted.

Now, how to develop the required experience by means of a suitable CPD? How is it possible to have a background which would be considered sufficient? Are the various courses and seminars nowadays available reliable or some of them are just a new commercial opportunity? Who is expected to validate them?

v. Information from a Photo

A photo taken during a survey on a 3 years old general cargo. It is unlikely that someone without a technical background would have been interested by that, as it is not spectacular at all and no particular detail is shown.

A professional photographer would have discarded it being out of focus and with unbalanced colours.

What can a surveyor see and what can he explain to his Principals? A test was done with different surveyors and the answers were:

- My god, the guy is entering in an enclosed space without helmet, I do not see his flashlight and also no breathing apparatus, portable VHF, back up assistance is shown. Were all the safe access procedures complied with? The surveyor was particularly dealing with P&I surveys and he focused on his core business.

- I do not like that insert, why was it done? Was there a damage? Do I have to expect some structural troubles? In this case the surveyor was particularly expert in structural design and assessment. Again, personal experience and interests played a role.

- Gosh, what a poor coating on the lower side of the manhole cover! If the tanks are in the same condition, the life-time could be quite reduced, noted a consultant to Owners, used to carry out pre-purchase surveys.

- Why so few stud bolts, where are the others? Asked an aged superintendent.

- Likely the crewing manager of the company would have noted that the quite poor overall of the crewmember was not of the nice and expensive type he requested.

Were the comments correct? Yes, all the above details can be noted by a skilled person, however each of them as such is insufficient and incomplete.

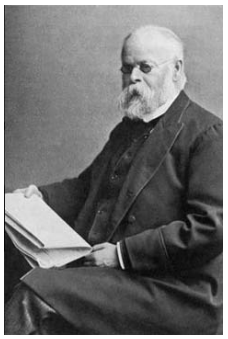
Just for the sake of completeness, the photo was taken to document that the ballast compartments had been actually entered during the survey.

Dedication

While I was writing these notes I was often looking to two photos I keep in my office and I find it appropriate to remember two gentlemen.

Thomas Andrews (1873 – 1912)

One of the designers of the most outstanding vessel of the time, where all the details were done to the maximum level of luxury and consciousness of safety. This was not sufficient when the Titanic sunk and Mr. Andrews lost his life at sea with other 1,522 persons.



Samuel Plimsoll (1824 – 1898)

Coal merchant, fully extraneous to any shipping business, was ashamed by the number of fatalities at sea caused by overloaded ships. He fought for all his life to obtain a law imposing a clear limit to the minimum freeboard of vessels. The first international agreement for the application of load line regulations was reached in 1930, 32 years after his death.