

## **DAMAGE ASSESSMENT FOR HNS INCIDENTS – YES, BUT HOW?\***

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### **ABSTRACT**

*The OPRC-HNS Protocol 2000 entered into force in June 2007, extending the provisions of the OPRC Convention on preparedness, response and cooperation to HNS incidents. However, the HNS Convention that was adopted in 1996 under the auspices of the IMO is still not in force: this convention on liability and compensation is still waiting for additional ratifications for a possible entry into force by 2010.*

*If that Convention was to become applicable, it would enable a comprehensive system with considerable compensation limits – up to 250 million SDR - for ensuring prompt and efficient compensation for damage caused by maritime transport of HNS, including:*

- *loss of life or personal injury on board or outside the ship carrying the hazardous and noxious substances caused by those substances;*
- *loss or damage by contamination of the environment caused by the hazardous and noxious substances*

*In contrast with the Civil Liability and the Fund 92 Conventions, there would be up to five accounts to handle and potentially as many more types of claims to administer. In the recent years, preliminary work focused essentially on establishing tools and guidelines for potential member states to facilitate the calculation of their contributing cargo.*

*Looking into the future and assuming the convention becomes applicable, it appears crucial to consider how the claims for HNS damage will be assessed and under which criteria. Contrary to oil pollution damage, HNS is more likely to inflict damage to human health due to their hazardous properties such as explosiveness, toxicity, reactivity or corrosiveness, to name only a few.*

*HNS are potentially defined by thousands of different products that can have up to 10 different behaviours and may cause various degrees of damage, far more complicated to assess than the ones for crude or refined oils.*

*One particular aspect that needs to be considered when assessing loss of life or personal injury - human health dimension - and the associated compensation, is to make sure there is a very clear and transparent system in place. In addition, assessing these types of claims can cause a lot of controversy and priority should be given to get this right due to the sensitive nature of the topic. Life and injuries are usually protected under various company or private insurance systems that may already be in place. It appears appropriate to compare them with what would be available with the compensation offered under the HNS regime and for example, if cumulating regimes would be allowed.*

*The second type of claims relates to the environmental damage or more precisely the assessment of reinstatement measures. Although there has been limited application of these measures for oil spills in the past, it is very probable that a lot more studies will be conducted following incidents involving HNS. Some products may have long term effects on invertebrates or mammals. In such cases, the damage assessment would require a more systematic approach involving a higher level of science and expertise.*

*The aim of this paper is to discuss, review and suggest ways forward to the difficult task of assessing damage for human health and environment resulting from an HNS incident and how they differ from oil incidents under CLC/FUND/BUNKERS regimes.*

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## INTRODUCTION

The HNS Convention was adopted in 1996 under the auspices of the IMO but is still not into force. As a matter of fact, in recent years efforts have been focused mainly on the adoption of a protocol to facilitate the entry into force of the convention rather than promoting the ratification of the Convention itself or doing preparatory work on practical aspects.

Strangely enough, little has been discussed on the practical aspects of the damage assessment and how this particularly difficult task can successfully be taken care of in the near future. To date, there is very little information available on the level of expertise required and on the difficulties that may be encountered during the damage assessment process leading to the compensation of claims. On some aspects, there is a lack of clarity on how the convention would be interpreted which may lead to misunderstandings for the majority of the concerned parties that do not have legal backgrounds. Little is also known on the future structure of the body that would be in charge of arbitration though it is almost certain there will be a joint Secretariat with the IOPC Funds. Should the convention enter into force and an HNS incident happens just after, unresolved questions on “how to do” will have to be addressed in a timely manner.

## DEFINITION OF DAMAGE IN THE HNS CONVENTION

The damage as defined in the HNS Convention is similar to that contained in the 1992 Civil Liability Convention but has been enlarged to cover loss of life, personal injury and some additional form of property damage as defined in the article 1 (6) of the HNS Convention:

- loss of life or personal injury on board or outside the ship carrying the hazardous and noxious substances caused by those substances;
- loss of or damage to property outside the ship carrying the hazardous and noxious substances caused by those substances;
- loss or damage by contamination of the environment caused by the hazardous and noxious substances, provided that compensation for impairment of the environment other than loss of profit from such impairment shall be limited to costs of reasonable measures of reinstatement actually undertaken or to be undertaken; and
- the costs of preventive measures and further loss or damage caused by preventive measures.

## LOSS OF LIFE OR PERSONAL INJURY

### *LLMC and HNS Conventions*

In terms of insurance, neither the CLC 92 nor the Fund 92 Conventions provide compensation for personal injury or loss of life. Neither are meant to address this aspect and we have to look at other liability regimes to see how it applies.

Interestingly enough, the Convention on Limitation of Liability for Maritime Claims 1976 (known as LLMC 76) and the Protocol of 1996 to amend the Convention on Limitation of Liability for Maritime Claims 1996 (known as the LLMC Protocol 1996 and referred as the LLMC 96 thereafter) have clear provisions in respect for loss of life and personal injury:

Claims of interest covered in the LLMC 76 (and 96) include:

- Claims in respect of loss of life or personal injury

- Claims other than loss of life or personal injury: loss of or damage to property, occurring onboard or in direct connection with the operation of the ship or with salvage operations, and consequential loss resulting there from;
- Claims arising for loss of life or personal injury to passengers of a ship (other than crew, stevedores or passengers of another ship)

Although there is no strictly defined amount on how much compensation would be available for each life or personal injury, there is a special account for this type of claims that is differentiated from another account for property damage. It starts at 2 million SDR and can go over 48 million SDR for ships of 70,000GT and above.

In the HNS Convention, the maximum limit of compensation provided is 100 million SDR for the ship-owner (or its insurer) and 250 million SDR for the HNS Fund.

Although having higher limits than the LLMC, the HNS Convention does not make a distinction on how much should be attributed per case for claims for loss of life and personal injury but defines instead a pot to share within the allocated limits. It also does not differentiate crew from passengers from third parties. The only distinction is in Article 11 where death and injury claims have priority over other claims should the total of these claims exceed two thirds of the total amount available.

For the ease of comparing the different amount of compensation for LLMC and HNS conventions, the limits of liability for these types of claims have been schematised on the figure 1 in Annex I.

Compensation for loss of life and personal injury is a very sensitive topic which cannot allow misinterpretation or unfairness. Ideally, the compensation that is available for a loss of life should be established at an early stage before the first case for the sake of consistency and uniformity. Regardless of the location and the circumstances of the incident, the calculation of compensation should be uniform and based on sound economic criteria defined under the same regime. Depending on the amount of compensation available, the potential number of victims and the other types of claims that may occur, there is room to think that variations can be expected to compensate victims uniformly from an incident to another.

Contrary to loss of life, personal injury is slightly easier to assess for the reason that it typically includes all necessary medical care for cure and loss of income should the injury have not happened. There are already several public or private insurance models that have been developed that can serve as good reference if one is developed for this purpose in the future. Although this might have been addressed by the Secretariat of the IOPC Funds or the international group of P&I Clubs, there is at present no indication that such work has been undertaken.

### ***National Laws and Regulations***

When looking at other regulations that apply in some countries, there are some interesting pieces of legislation that are worth mentioning:

The “Jones Act” and the “Death on High Seas Act” were created for seafarers and are part of federal laws of the United States. Under the Jones Act, there is a provision called “maintenance and cure”, which is aimed at providing compensation following a maritime injury. “Maintenance” is a daily allowance, usually ranging from 25 to 45 US\$ per day. The idea of maintenance is to provide the injured crew with food and shelter as he would have received onboard had the injury not have occurred.

The “law of cure” requires the employer to provide an injured seaman or fisherman with medical care and treatment, including hospitalization, and rehabilitation. Both of these laws under the Jones Act are made to compensate the seafarer following “unseaworthiness” as a result of a maritime injury.

Under the Death on High Seas Act, the owner or charterer of a vessel shall establish, under regulations prescribed by the Federal Maritime Commission, financial responsibility to meet liability for death or injury to passengers or other individuals on a voyage to or from a port in the United States.

The amounts of financial responsibility vary in function of the number of passenger accommodations as described thereafter (in brackets are the maximum amounts available):

- US\$20,000 for each of the first 500 passenger accommodations (10 million US\$)
- US\$15,000 for each additional passenger accommodation between 501 and 1,000 (17.5 million US\$)
- US\$10,000 for each additional passenger accommodation between 1,001 and 1,500 (22.5 million US\$)
- US\$5,000 for each additional passenger accommodation over 1,500 (22.5 million US\$)

When looking at other national regulations that apply under certain conditions in territorial waters or for nationals of a given country, some provisions are readily applicable and clearly defined. For example, the Philippines Republic Act RA 8042 stipulates that in case of death of the seafarer during the term of his contract the employer shall pay his beneficiaries in the Philippine currency equivalent to the amount of US\$ 50,000 and additional amount of US\$7,000 to each child under the age of 21 but not exceeding four children.

Unlike the national laws presented in this section, the HNS Convention does not provides much details on the value of compensation for loss of life or personal injury caused by HNS. The potential danger in not having defined rules may lead to different interpretations. As a consequence, practice will be certainly based on other past cases which may be compensated differently depending on several factors such as location and P&I Club.

### ***Private Insurance Schemes***

Most major shipping companies have their own private insurance policies for their employees and next of kin; some of them are quite comprehensive and offer a serious compensation system in case of an accident in duty. It is often a combination of a life insurance with a medical insurance provided by specialized maritime insurance companies and is also offered to ship-owners in their P&I cover.

Like medical insurance policies, these compensation schemes can vary from one to another but typically include:

- Loss of life
- Permanent disability
- Partial disability
- Medical care or hospitalisation cost until recovery
- Allowance while not able to work

Some differentiation may however apply and depend on the rank of the officers, their age group and their nationality; terms and conditions may indeed differ as local government regulations are sometimes used (see paragraph on National Laws and Regulations).

Insurance policies and compensation schemes are usually confidential information of shipping companies. Instead of getting into a comparative study of private insurance companies which is not the purpose of this paper, it makes more sense to have a representative idea of the order to magnitude of cover:

For death in service, three years of annual salary is not uncommon as a lump sum for remaining family members or dependents. Some plans even offer an amount going up to US\$2 million though it is more common to find amounts in the range of US\$50,000 to US\$300,000. A percentage of that amount serves for calculation for permanent or partial disability following injury or illness. In some occasions, comprehensive list of injuries are provided with coefficients, grades or percentages. It is also possible to find some plans that provide a full cover of all medical expenses up to a life amount of US\$5 million.



An example of such a schedule can be found in the Section 32 of the POEA “Standard Terms and Conditions Governing the Employment of Filipino Seafarers Onboard Seagoing Vessels” and in the Tables 2 and 3 at the end of this paper.

### ***How will it work together?***

For the time being, the HNS Convention is not in force. Instead, the ship-owners limitation of liability arising from an incident involving the carriage of HNS by sea is normally governed by the general rules on limitation under the LLMC 76 or 96, if applicable. However, there is currently no requirement for ship-owners of vessels carrying HNS to maintain insurance to meet the limit of liability under LLMC 96 so this would not apply systematically (e.g. ship not insured).

A point of importance is that there should not be duplication or double compensation using several schemes. The HNS Convention is very explicit in this respect as stipulated in the Article 4:

- The HNS Convention shall apply to claims other than claims arising out of any contract for the carriage of good and passengers, for damage arising from the carriage of HNS by sea
- The HNS Convention shall not apply to the extent that its provisions are incompatible with those of the applicable law relating to workers’ compensation or social security schemes

In the same manner, the Article 7 of the 1996 LLMC Protocol mentions that there cannot be duplication of compensation if the damage is caused by HNS and if the HNS Convention is applicable. However, this is not mentioned in the 1976 Convention which was adopted 20 years before the HNS Convention but as the limits of the HNS Conventions are higher than the ones of the LLMC 76, it can reasonably be assumed that:

- If the loss of life or personal injury is the result of a HNS incident, then the HNS Fund with its limit of liability would apply and not the LLMC 76 (or 96 if applicable)
- If the loss of life or personal injury is from another cause, then the LLMC 76 (or 96 if applicable) only would apply

The article 7 of the LLMC 96 Protocol mentions that any State has the option to exclude claims from damage for HNS from the Protocol at the time of the signature, ratification, acceptance, approval or accession or at any time after. However, it is not known so far that a State has done so up to now and it will probably not happen until the HNS Convention becomes applicable.

Should there be a combination of reasons causing the accident (e.g. injuries due to the collision and injuries caused by the nature of the HNS) numerous complications may be expected in differentiating the claims that only experience will tell. The other remaining problem is under which criteria the assessment for loss of life and injury will be made.

### **ENVIRONMENTAL DAMAGE**

The term of “Environmental Damage” has generated countless debates and discussions within the pro environmental community and is often subject to different views or disagreements.

In the HNS Convention, there is mention of “loss or damage by contamination of the environment caused by HNS”. As for the CLC 92 and Fund 92 conventions, the compensation for impairment of the environment shall be limited to costs of reasonable measures of reinstatement actually undertaken or to be undertaken.

In practice, this falls under post spill studies and reinstatement measures while claims for damage to the ecosystem are not admissible.

Although these studies or reinstatement measures are in principle admissible, cases where compensation was actually paid under these criteria are quite rare (e.g. Solar 1 – first payment made to a university to assess the damage and estimate re-instatement measures required).

When looking into documented past cases, it is very rare to find proposed studies or programmes that were technically justified. Proposals often reflected a lack of knowledge and experience that prevented any reasonable reinstatement measure to actually be realistically undertaken. In other occasions, unrealistic programmes that were re-defining fundamentals of science were simply desperate attempts to get unreasonable amounts of compensation based on arbitrary theoretical models or calculations that have no real meaning.

Claims for environmental damage were presented against the IOPC Funds during these cases:

Year	Ship	Location	Type of claims
1995	Sea Prince	Republic of Korea	Environmental studies
1995	Honam Sapphire	Republic of Korea	Environmental studies
1997	Nissos Amorgos	Venezuela	Environmental damage
1997	Evoikos	Singapore	Environmental damage
1998	Pontoon 300	United Arab Emirates	Environmental damage
1998	Maritza Sayalero	Venezuela	Environmental damage
2001	Baltic Carrier	Denmark	Environmental monitoring
2003	Jeong Yang	Republic of Korea	Post spill studies
2006	Solar 1	Philippines	Environmental studies
2007	Hebei Spirit	Republic of Korea	Environmental studies

These claims were for the majority not admissible, therefore little payment was provided by the Fund. It is interesting to note that according to the information available, there is no record of claims accepted for reinstatement of the environment though there could be some merit in conducting more research in this respect.

It must be pointed that these cases were involving the IOPC Funds that has an annual review published that includes on-going cases. The majority of maritime incidents involve only the liability of the ship-owner and its P&I Club. In these cases, environmental damage claims are presented to the insurers of the vessel. These cases are not published but an analysis of submission could be an excellent topic for research in the future.

The HNS Fund is very likely to be administered by the IOPC Fund (joint Secretariat); consequently, it can be expected that the legacy of this organization assessing pollution cases from more than 30 years of FUND administration will also influence HNS Fund cases.

To better understand the potential hazard of an HNS to marine resources and human health, a hazard evaluation procedure produced by the Joint Group of Experts on the Scientific Aspects of Marine Environmental Protection (GESAMP) has been developed for more than 10 years. The GESAMP composite list contains now over 900 listed chemical substances carried by ship that all fall under the definition of HNS. The hazard profile takes into account elements like bioaccumulation, biodegradation, aquatic toxicity, acute mammalian toxicity, irritations and long term effects as well as interferences with other uses of the sea.

This admirable piece of work is not often given credit to (probably because it is not well understood) and should be recognized by the community as one of the key tools for understanding the degrees of severity and types of hazards of a substance. For reference, there is no equivalent tool available for crude oils because physical properties can greatly vary depending on time and location even for the same crude. Before entering into

speculations and ideas of environmental studies, it is good to understand well the potential of the substance to cause harm and this can only be achieved by giving credit to experts able to understand the GESAMP ratings and interpret correctly the risk to the aquatic environment and human health.

The same conflicts as the ones experienced during oil pollutions are very likely to occur again for future HNS pollutions. It is essential that science can find a legitimate place in the assessment of the damage of economic resources as well as for natural environmental resources that have no monetary value. A good practice would be to produce endorsed scientific publications of post spill environmental studies of IOPC Funds and future HNS Fund cases in order to set a standard and serve as a good example for agencies that would consider undertaking a genuine and serious reinstatement programme in the future. In addition, that would avoid unnecessary ill conceived unreasonable plans seeking to re-invent science to restore the environment to pre-event conditions (e.g. cleaning mangroves, using miraculous products, etc).

### **THE RELATION BETWEEN THE AVAILABLE LIMIT OF COMPENSATION AND THE REAL DAMAGE**

It is extremely difficult to establish a system that provides the right and fair level of compensation for a particular type of damage. It is even more difficult to forecast the cost of preventive measures and other damage when HNS can be so different in its potential to cause harm to human health, business activities and the environment.

It is now widely acknowledged that the damage and its associated cost are not a linear function of the quantity of pollutant spilled but depends on other factors such as:

- the type of pollutant (physical and chemical properties)
- the proximity to neighbouring sensitivities that can potentially be affected
- the weather conditions; and
- the effectiveness of the response

However, the limit of compensation available under the CLC 92 is directly related to the size of the ship (through its Gross Tonnage), regardless of the damage itself or the quantity spilled in the water. The bad practice that often results from having a limit of compensation is to try to use it as much as possible, disregarding the criteria of reasonableness. Claimants acting this way would certainly become more sensible should the expenses be theirs or if they can realize that can unfairly affect other claimants (e.g. by slowing down the assessment process or having to prorrate, among others).

Albeit slightly different, the HNS limits for compensation are modelled on the principles of the CLC and the Fund 92 conventions (the ship-owner part is calculated on the GT of the ship and Fund part is fixed) and the same remarks would remain valid. In reality, it is a lot more complicated because of the wider range of chemical properties that are inherent to HNS that are not applicable with crude or fuel oils.

Some chemicals have a very high toxicity and very small quantities may cause damage by absorption (inhalation, cutaneous or oral). Others have a very high bioaccumulation potential which would potentially cause long term effects. Others are simply harmless even if discharged by tonnes into the marine environment.

On a positive note, according to a study conducted over a period of five years by the International Group of P&I Club, the minimum limit of compensation under the ship-owner liability (i.e. 10 million SDR) would be sufficient to meet the claims of 121 out of 126 incidents, had the HNS Convention been in force during that period. This means that the amounts of compensation readily available for the HNS Convention 13 years ago would be still more than enough to meet claims for HNS incidents. However, this will only be confirmed when the Convention enters into force as costs are likely to be higher due to other types of claims which could not be taken into account in the absence of a dedicated compensation system in place. The other remaining concerns are the assessment methodology, the consistency in the approach and the ability to differentiate between competing systems.

## **DISTINGUISHING BETWEEN OIL AND HNS POLLUTION DAMAGE – INCIDENTS INVOLVING TWO SHIPS**

When considering the differences between oil or HNS damage, we can notice a lot of similarities. In the conventions (FUND 92 and HNS), the types of damage are almost the same apart from the loss of life and personal injury, which is the new element introduced in the HNS Convention. From a technical point of view, it does also make sense: crude oil is composed of thousands of chemical products in various proportions that can affect natural resources from a toxicological point of view, just like some HNS can do.

In terms of probability, the likelihood to have an oil tanker and a ship carrying HNS both involved together in a shipping incident is extremely low. Nevertheless, it is reasonable to consider what would happen if such a misfortune occurs.

In theory, there should be little doubt about the nature of the damaging substance should there be oil and HNS spilled simultaneously during the same incident because their properties are very unlikely to be similar. This needs of course to be confirmed when there is indeed contamination of resources but the likelihood is low, unless the oil in question has a high content of the HNS spilled.

In practice, things are however slightly different: although the substances in question (oil and HNS) may be different, the consequences can be the same for contaminated sea food or shell fish: mortality, tainting, impossibility to sell, loss of confidence in the market. In such a situation, how to know which convention would apply first or if they apply together? A good level of expertise would be required to determine in a sound scientific manner what is the predominant contaminant supported by analysis if necessary.

It has been stipulated in the section above that there could not be duplication of damage and compensation. Nonetheless, if the damage is the result of the inseparable contamination of two substances (crude oil and HNS) having similar effects, that could result in using two different funds for the same damage.

The Article 6 of the HNS Convention mentions that when it is not possible to separate damage caused by HNS from that caused by other factors, all such damage shall be deemed to be caused by the HNS, except if the damage caused by the other factor is a damage of a type referred to in Article 4, Paragraph 3 which includes pollution damage defined by the CLC 92 and FUND 92 Conventions. In this respect, there seem to be an overlap in the potential damage that may be caused by persistent oil or HNS and separating both might be a difficult task. The application of the relevant convention may not always be supported if science itself cannot demonstrate the real cause of the damage.

When it comes to pure economic loss following for example a fishing ban, the same reasoning is still valid. Is the ban motivated by the potential contamination of oil or HNS or both?

It is acknowledged that having a crude oil and HNS spills during the same incident involving two ships is very unlikely, it should not be forgotten that ships carrying HNS often carry persistent fuel oil that can in some instance also lead to the same consequences. In that particular case, it would be interesting to know how the Bunkers Convention 2001 would work, which is another additional topic of debate and discussion.

## **A NEED FOR A NEW NON CONVENTIONAL EXPERTISE**

One of the typical problems resides in the availability of international experts that have the ability to provide the right level of advisory services for HNS incidents to the HNS Fund.

### ***Gas/vapour monitoring***

As for incidents involving light crude oils, challenges can be expected in the monitoring of concentrations of gases for health and safety purposes. There is currently little knowledge or ability in most of the countries to mount a



good monitoring programme during a chemical emergency. Each gas has a specific identification method and real time monitoring can only be undertaken by professional teams who know what they measure, how to measure it and how to interpret the output. Unlike incidents involving oil, there is no room for a second chance because the consequences of an inappropriate action can be dramatic.

The expertise in gas monitoring is held by gas detector manufacturers and trained teams from the chemical industry who are experienced in this domain. Fire fighting and Hazmat teams can also be well prepared for this type of operations but are typically used to work on land and not available for maritime intervention. Unfortunately, there is no set international standard and the level of professionalism is very heterogeneous from one country to another. The other aspect of concern is with regard to the maximum permissible limits of exposure to operate in a safe environment. Limits can be available and defined by specialized agencies for the chemical industry but they may differ depending on the country. If these standards do not exist in one place, which ones should be used as a reference?

Finally, it is not technically possible to measure concentrations of all substances. Methodologies can differ but sometimes there is none suitable for the substance in question. In such a case, the answer to how to proceed is simply not defined and precautionary measures have to be implemented as advised by knowledgeable experts or advisers.

### ***Human toxicology***

Following contamination, the human body can react in numerous manners. The range of damage can vary from no noticeable injury to permanent damage to the human system. Long term effects cannot be excluded and can affect not only the health but also the ability to continue to work thereafter. A sadly famous example is the asbestos case where long term effects were demonstrated on subjects who were exposed to this substance used as an insulating fire resistant material in the building industry. Some people developed unexplained lung cancer twenty years after being contaminated and it took long time to determine that the inhalation of fine particles of asbestos was the source of the disease. In the USA alone, more than 730,000 claimants have been in litigation as of 2002.

To assess the medical condition of exposed victims of HNS, approved toxicologists and specialized doctors need to be identified and employed by the assessing organizations for this purpose.

General experts will also be required to advise on the monetary value of compensation that is admissible for each case of loss of life and personal injury. They will have to be able to understand the reports of the medics and give impartial recommendations based on good appraisals to the organizations in charge of payments (P&I or HNS Fund).

### ***Aquatic toxicology***

The other type of claims that will be difficult to assess is the contamination of water and commercial sea food. Once again, the right level of expertise and science will be the first concern to address to ensure an equitable assessment in line with the reasonableness principles also mentioned in the CLC and FUND92 conventions.

The contamination and damage assessment to aquatic resources will become more laborious but fundamentally very similar to pollutions by hydrocarbons. In fact it might be simplified if the contamination is due to only one substance. Regarding other natural resources such as flora and other fauna, the expertise will probably have to shift to toxicology rather than simple evaluation of suffocation due to smothering effect characteristic to medium to heavy oils. Apart from getting expertise able to fully understand the GESAMP evaluation, it will also be necessary to appraise the equivalent admissible compensation that will be allowed for damage to aquatic and natural resources.

The last aspect that is not developed in this paper but will need to be addressed is about the technical expertise required for advising on the preventive measures on how to respond to a HNS incident and on adequate mitigation

measures. This will probably require a combination of experts of different backgrounds that can give direct sound advice to a competent decision maker empowered to take immediate action. Unlike oil, decisions and appraisals will have another dimension: not to expose human life to HNS hazards.

## CONCLUSIONS

Personal injury and loss of life are commonly compensated by public or private insurances. The terms and conditions of these medical or life insurance policies are very detailed and subject to agreement by signature. International conventions work on a different principle as they do not act as a contract. The main issue is that no monetary value can be an acceptable substitute to the invaluable price of life; there is no doubt it becomes a sensitive matter when trying to define and agree on a corresponding monetary value for it.

Despite setting limits of compensation that are probably sufficient to cover any maritime HNS incident, it is still unclear which criteria will be applied to assess claims under the HNS Convention. It is also not known if the HNS Fund (or P&I) can top up any other existing insurance system to a certain level. It is naturally feared that this could result in inconsistencies in payments for loss of life which may consequently appear unfair to the victims or to their relatives. If discrepancies start to show between different accidents, this will certainly become a controversial topic.

The other difficult task of assessing claims for economic damage of aquatic resources and pure environmental claims will also need to be addressed. A lot of care in selecting experts that have the adequate background and experience will be required to ensure consistency in the scientific and economic appraisals of pollution damage.

Claims under the HNS Convention will be assessed according to criteria that will be established by the Governments of HNS Fund Member States. These criteria have not been determined yet and it is seen as essential to get prepared in this respect when the HNS Convention enters into force, preferably before the occurrence of the first cases.

With the above in mind, the following is suggested for consideration:

- A HNS working group composed of recognized international maritime experts may be formed at the demand of the member states to work on:
  - o The definition of standards, schemes and procedures for assessing claims resulting from HNS incidents
  - o The production of a detailed schedule establishing the rules for compensation that should be awarded for loss of life and injury (example in Table 3), including capping and prorating
  - o Defining grades for different types of injuries or impairments with the corresponding level of compensation (as required)
  - o The establishment of guidelines for experts assessing economic and environmental claims and for claimants. The two guidelines for assessing fisheries sector claims edited in 2008 and adopted by the Fund Assembly in 2007 are excellent tools and an example to follow.
  - o Building a database of experts familiar with evaluation criteria established by the HNS Fund
- This working group could be newly created or part of the HNS Focus Group created in 2007 which would have an extension of its mandate, as required
- The IOPC Funds and the future HNS fund should ideally consider the value in publishing reports of environmental studies conducted for IOPC or HNS cases to set a model for good practice

## GLOSSARY

CLC92	International Convention on Civil Liability for Oil Pollution Damage
FUND92	the 1992 International Convention on the Establishment of an International Fund for Compensation for Oil Pollution Damage
GESAMP	Joint Group of Experts on the Scientific Aspects of Marine Environmental Protection
GT	Gross Tonnage
HNS	Hazardous and Noxious Substances
IMO	International Maritime Organization
IOPCF	International Oil Pollution Compensation Funds
LLMC76	Convention on Limitation of Liability for Maritime Claims, 1976
LLMC96	Protocol of 1996 to amend the Convention on Limitation of Liability for Maritime Claims of 19 November 1976
P&I	Protection and Indemnity
POEA	Philippine Overseas Employment Administration
SDR	Special Drawing Right

## BIOGRAPHIES

**Mr. Alexander Nicolau** holds two Master Degrees in Science and Engineering from the Universities of Grenoble and Strasbourg (France). He has over nine years of international experience in marine oil pollution both in the private and intergovernmental sectors. He worked first at the IMO/UNEP centre REMPEC in Malta seconded by the oil industry and then joined the Technical Team of ITOPF in London. Until 2005, he responded to ship pollution incidents on behalf of ship-owners and P&I Clubs, offered training and advisory work to States and the Oil Industry in more than 20 countries.

Between 2005 and 2006, he temporarily retired himself from the field of marine pollution and dedicated himself to studying the Japanese language in the Prefecture of Aichi in Japan for a period of six months.

Alexander joined ***Oil Spill Response*** in Singapore in April 2006 and has worked on wide range of projects/studies in the Asia-Pacific Region for the Oil Industry both offshore and downstream. He has an advisory role in the development of training and consultancy services as well as for conference and technical papers. In 2007 and 2008, he was assigned by IPIECA as a Consultant for the preliminary study on a Global Initiative for the region of East Asia.

Alexander has worked and lived in several countries (France, Germany, Malta, UK, Japan and Singapore) for various periods of time and is able to converse in five languages.

**Mr. Thomas Liebert** is a maritime lawyer by training. He has more than ten years of international project management experience in marine environmental issues. He previously coordinated the advocacy activities of ***Oil Spill Response***, drawing on his earlier experience working with the International Maritime Organization as well as environmental NGOs. He now manages and develops the growing portfolio of training and consultancy activities in Asia Pacific and oversees the implementation of the ***Oil Spill Response*** occupational standards for spill response in Singapore.

## TABLES AND FIGURES

**Table 1: List of countries that are parties of selected international conventions (April 2009, source IMO)**

LLMC 76	LLMC 96	HNS
<i>51 States - 1 Associate Member</i>	<i>34 States</i>	<i>14 States</i>
Albania Algeria Australia Azerbaijan Bahamas Barbados Belgium Benin Bulgaria Congo Cook Islands Croatia Cyprus Dominica Egypt Equatorial Guinea Estonia France Georgia Greece Guinea Bissau Hungary India Ireland Jamaica Kiribati Latvia Liberia Lithuania Luxembourg Marshall Islands Mauritius Mexico Netherlands New Zealand Nigeria Portugal Romania Saint Lucia Samoa Sierra Leone Singapore Switzerland Syrian Arab Republic Tonga Trinidad and Tobago Turkey Tuvalu United Arab Emirates Vanuatu Yemen - Hong Kong	Albania Australia Bulgaria Canada Cook Islands Croatia Cyprus Denmark Finland France Germany Hungary Iceland Jamaica Japan Latvia Liberia Lithuania Luxembourg Malaysia Malta Marshall Islands Norway Romania Russian Federation Saint Lucia Samoa Sierra Leone Spain Sweden Syrian Arab Republic Tonga Tuvalu United Kingdom	Angola Cyprus* Hungary Liberia Lithuania Morocco Russian Federation* Saint Kitts and Nevis Saint Vincent and Grenadines Samoa Sierra Leone Slovenia Syrian Arab Republic Tonga  * State that has ships with a total tonnage of at least 2 million GT



**Table 2: Example of a major medical care plan (source HTH Worldwide)**

Plan with a \$5,000,000 lifetime maximum	
Preventative and Primary Care – Deductible is not applicable	
Primary Care Office Visits - as many as 4 visits per Calendar Year	All except a \$10 copay per visit
Preventative Care for Babies/Children: (Birth to Age 18)	
a. Office Visits/examination	100%
b. Immunizations, Lab work & X-rays	
Preventative Care For Adults: (Age 19 and Older)	
a. Routine Pap Smears, annual mammogram	100%
b. PSA For Men	
Annual Physical Examination/Health Screening	100% Maximum Covered Expense of \$250 and limited to one per Calendar Year.
Outpatient Services - Insurer pays after the Deductible is Met	
Outpatient Medical Care	100%
Inpatient Hospital Services - Insurer pays after the Deductible is Met	
Surgery, X-rays, In-hospital doctor visits, Organ/Tissue Transplant	The Insurer will pay 100% of Covered Expenses.
In-patient medical emergency	100%
Professional Services	
Surgery, anesthesia, radiation therapy, in-hospital doctor visits, diagnostic X-ray and lab work	100%
Other Services - Insurer pays after the Deductible is Met, unless noted	
Ambulatory Surgical Center	100%
Physical/Occupational Therapy/Medicine	Deductible is waived. Covered Expenses up to \$50 per visit, and as many as 6 visits per Calendar Year
Ambulance Service	100%
Durable Medical Equipment	100%
Mental, Emotional or Functional Nervous Disorders, Alcoholism or Drug Abuse	
a. Mental, Emotional or Functional Nervous Disorders - Inpatient: Up to 20 days of inpatient confinement per Calendar Year	100%
b. Mental, Emotional or Functional Nervous Disorders - Outpatient: First 10 visits per Calendar Year	50%
c. Alcoholism or Drug Abuse - Inpatient in a Hospital, Non-hospital Residential Treatment Center or Day Care Center Up to 10 days per Calendar Year	100%
c. Alcoholism or Drug Abuse - Outpatient: Up to 10 visits per Calendar Year	100%
Outpatient prescription drugs	100% of actual charge up to an annual maximum of \$1,000. Maximum 90 - day supply
Dental Care required due to an Injury	100% of Covered Expenses up to \$500 per Calendar Year maximum
Accidental Death and Dismemberment	Maximum Benefit: Principal Sum up to \$10,000
Repatriation of Remains	Maximum Benefit up to \$25,000
Medical Evacuation	Maximum Lifetime Benefit for all Evacuations up to \$250,000

**Table 3: Example of schedule of disability or impediment for injuries and diseases (source: POAE)**

HEAD	
Traumatic head injuries that result to:	
1. Aperture unfilled with bone not over three (3) inches without brain injury	Gr.9
2. Aperture unfilled with bone over three (3) inches without brain injury	Gr.3
3. Severe paralysis of both upper or lower extremities or one upper and one lower extremity	Gr.1
4. Moderate paralysis of two (2) extremities producing moderate difficulty in movements with self-care activities	Gr.6
5. Slight paralysis affecting one extremity producing slight difficulty with self-care activities	Gr.10
6. Severe mental disorder or Severe Complex Cerebral function disturbance or post-traumatic psychoneurosis which require aid and attendance as to render worker permanently unable to perform any work	Gr.1
7. Moderate mental disorder or moderate brain functional disturbance which limits worker to the activities of daily living with some directed care or attendance	Gr.6
8. Slight mental disorder or disturbance that requires little attendance or aid and which interferes to a slight degree with the working capacity of the claimant	Gr.10
9. Incurable imbecility	Gr.1

FACE		
1. Severe disfigurement of the face or head as to make the worker so repulsive as to greatly handicap him in securing or retaining employment, thereby being no permanent functional disorder		Gr.2
2. Moderate facial disfigurement involving partial ablation of the nose with big scars on face or head		Gr.5
3. Partial ablation of the nose or partial avulsion of the scalp		Gr.9
4. Complete loss of the power of mastication and speech function		Gr.1
5. Moderate constriction of the jaw resulting in moderate degree of difficulty in chewing and moderate loss of the power or the expression of speech		Gr.6
6. Slight disorder of mastication and speech function due to traumatic injuries to jaw or cheek bone		Gr.12
EYES		
1. Blindness or total and permanent loss of vision of both eyes		Gr.1
2.Total blindness of one (1) eye and fifty percent (50%) loss of vision of the other eye		Gr.5
3. Loss of one eye or total blindness of one eye		Gr.7
4. Fifty percent (50%) loss of vision of one eye		Gr.10
5. Lagophthalmos, one eye		Gr.12
6. Ectropion, one eye		Gr.12
7. Epiphora, one eye		Gr.12
8. Ptosis, one eye		Gr.12
NOTE: (Smeller's Chart –used to grade for near and distant vision)		
NOSE AND MOUTH		
1. Considerable stricture of the nose (both sides) hindering breathing		Gr. 11
2. Loss of the sense of hearing in one ear		Gr. 11
3. Injuries to the tongue (partial amputation or adhesion) or palate-causing defective speech		Gr. 10
4. Loss of three (3) teeth restored by prosthesis		Gr. 14
EARS		
1. For the complete loss of the sense of hearing on both ears		Gr. 3
2. Loss of two (2) external ears		Gr. 8
3. Complete loss of the sense of hearing in one ear		Gr. 11
4. Loss of one external ear		Gr. 12
5. Loss of one half (1/2) of an external ear		Gr. 14
SCHEDULE OF DISABILITY ALLOWANCES		
Impediment Grade	Basis	Impediment
1	US\$50,000	120.00%
2		88.81%
3		78.36%
4		68.66%
5		58.96%
6		50.00%
7		41.80%
8		33.59%
9		26.12%
10		20.15%
11		14.93%
12		10.45%
13		6.72%
14		3.74%

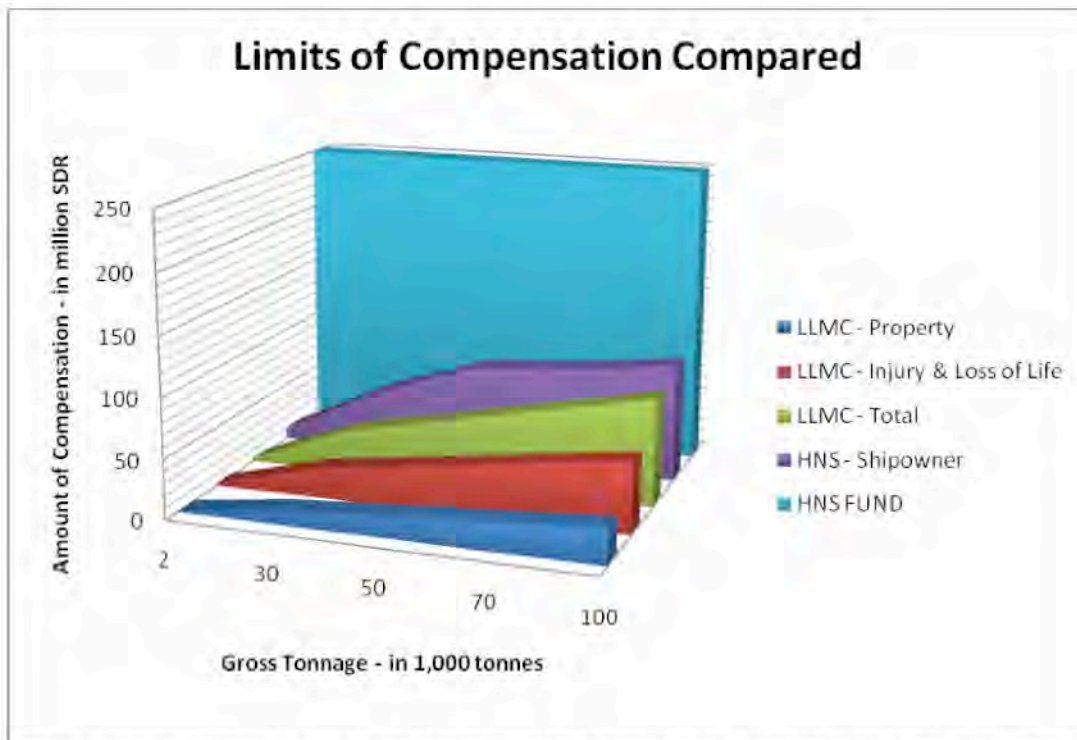


Figure 1: Graphs comparing the Limits of Compensation available under the LLMC and HNS Conventions

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