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VERITAS**

Move forward with confidence

# Inland Navigation News Letter



## Editorial

Dear reader,

As we approach the end of 2012, it is a sobering thought to realise how quickly time passes. Over the past twelve months, we have seen a continuation of the economic woes in Europe, the United States, and even China. Nevertheless, we have still seen some encouraging signs elsewhere in the world of significant new business opportunities. Bureau Veritas employees, for example, have been busy during the past year visiting areas of the world that are important to our business, talking to existing and new customers, designers, shipbuilders and many others. It requires persistence and dedication to survive the ongoing economic downturn. Ours has historically been a cyclical industry, and we firmly believe that more prosperous times will follow the current difficulties. I would like to take this opportunity to thank our esteemed customers for their loyal support and for the trust which they continue to place in our services. I would also like to encourage all those who want to join us in helping to find creative answers to the current problems that we all face. I wish all of you a very healthy and successful 2013. Like Bureau Veritas, may you move forward with confidence!

Truly Yours,  
Eric Lallemand, Director



## Risk analysis through Hydrodynamic Calculation

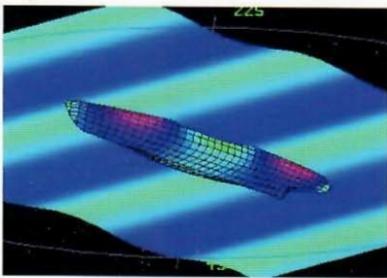
Bureau Veritas' Hydrostar software is a highly effective hydrodynamic simulation software programme with a variety of different uses. It is an ideal tool, for example, for use in the risk analysis verification of a study by a design company into the ability of an inland waterways vessel to meet specific requirements set forth by the Belgian Royal Decree for navigation in the semi-maritime area between the West-Scheldt, with its large hub-port of Antwerp, and the North Sea port of Nieuwpoort in Belgium. Based on a three-dimensional potential theory, HydroStar solves the problem of wave diffraction and radiation around a ship or an offshore structure in deep-water as well as in water of infinite depth. The method of boundary integral equation (panel method) is used. Over the years the program has benefited from continuous evolution, embracing the latest theoretical as well as practical findings and efficient numerical algorithms. The geometry of the specific hull is entered in such a way that sections where the hull shape abruptly changes are closely observed. The submerged part of the hull is meshed by a numerical code devoted to the automatic mesh generation of the ship type body, in the context of the sea-keeping diffraction-radiation codes based on the Boundary Integral Equation technique. In this simulation the risks of waves crashing on deck, of being subjected to excessive bending moments, or excessive values of lateral acceleration must be assessed. According to the Belgian Royal Decree, several different loading conditions are presumed in which the vessel is fully loaded, taking into account different angles of the vertical position of the gravity centre either due to the existence of free surface liquids

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## Summary

- Risk analysis through Hydrodynamic calculation
- Amended ADN to enter force in 2013
- Oil/asphalt tankers for Colombia
- Third split hopper delivered to Port of Antwerp
- Inland navigation exhibition in Antwerp
- Rule Note NR580- Floating Establishments
- Rule Note NR597- Requirements for Thickness Measurements
- Waterways Expo 2012 in Wroclaw
- Training Sessions at DNI
- Navhybus, an innovative green project
- New Comers



or due to cargo arrangements. Furthermore, the risk of slamming is also analysed for the loading condition in which the vessel might

be ballasted. In general, the allowable significant wave height can be higher than 1.20-to-2.00 m for inland ships which perform their non-international voyages on a semi-maritime stretch. That is to say

that the safety clearance of the non-weather-tight openings or of reference points play a very important role in determining the exploitation limits of the ship. The roll angle is also a crucial factor which can threaten the stability of the ship during its coastal navigation. Moreover, the structural strength of the ship is also checked by taking into consideration the excessive vertical wave bending moment revealed by the risk analysis. This is a fine example of how BV software and engineers can help solve extraordinary navigation problems and the implementation of local navigation laws ■



## Amended ADN to enter force in 2013

On Jan 1st 2013, the new, revised ADN agreement covering the International Carriage of Dangerous Goods (DG) by inland waterways will enter into force. Lessons learned over the past two years have motivated the technical committee charged with drafting the revised agreement to put extra emphasis on the training and responsibilities of all parties concerned, predominately the master or the ADN specialist on board the vessel. Specific attention has also been paid to the intact stability and loading conditions of tankers and the filling parameters of vessels using a dedicated onboard loading

instrument. For tank vessels, certificated approval needs to be supplemented by a list of all dangerous goods (and their appropriate UN number and official name) accepted for carriage, and drawn up by the recognised classification society which has classed the vessel. Classification societies must update vessels' substance lists at each class renewal, but also in the case of amendments to the ADN agreement which may have become relevant during the class period, which is generally five years, thus overlapping at least two ADN validity timeframes. (A new version of the ADN is published every two years). However, it remains the responsibility of the owner of the vessel to request a new list. Those operators who are unsure of the need for their current product list to be updated, or whose vessels have no valid product list, should contact their BV district office about this issue. An experienced Bureau Veritas surveyor will help draw up a product request form, which includes the full technical specification of each vessel. This information will then be used to produce a new, fully up-to-date list of products (LOP). Failure to have such a valid list on board might lead to a vessel being stopped by authorities while under way, or to loading restrictions or problems at terminals. Such problems are best avoided altogether at all times, as they could result in costly delays and/or fines ■

## Oil/asphalt tankers for Colombia

The inland navigation business is booming throughout most of South America, providing new construction work for shipyards in a number of countries in Europe and Asia. BV is heavily involved in this newbuilding activity, and is adding significant numbers of vessels to its inland register. Although working on South American projects is nothing new for DNI, the current demand for innovative vessels suitable for local markets and their operational conditions is generating experience with new types of design. The specific regulations governing South American markets are very different from those in Europe. For example, in October 2012, BV in Rijeka, Croatia, contracted classification of a series of oil/asphalt tankers for Colombia to be built at the 3MAJ shipyard, one of the most experienced builders of asphalt carriers in the world. Asphalt must be transported at elevated temperatures, and must be fitted with very efficient insulation and heating systems. Inspired by the Mississippi design, the machinery room (housing thermal oil boilers and a generator)



**3. MAJ**  
utemeljeno  
established 1905.

on the series of tankers building at 3MAJ for the Colombian market is located above the cargo area. This arrangement is not commonplace and would be not allowed in European (and certain other) countries. But, following consultation between the shipyard and the shipowner, the final design has now been validated for classification. BV's technical staff are always ready and willing to meet new challenges involving vessels operated on South American waterways, and indeed elsewhere ●

## About "CAP Inland" and "Tanker Plus" TMS ANNA



Classification activities and their extension to consultancy services offered through "CAP Inland" and "Tanker Plus" provide a framework for safe vessel operation and condition maintenance.

"CAP Inland" is a service provided by BV as a supplement to class, to which it is complementary. It may be requested by a client at any period of the vessel's life in order to identify the actual quality standard of the vessel with respect to class Rules. This service is a very useful tool for all sectors of the marine industry, applicable to classed vessels or to vessels not classed at all. The requirements dealing with services provided by "CAP Inland" are set down in the guidance note NI575.

As a step towards "CAP Inland", the quality label "Tanker Plus" is assigned to classed inland tank vessels complying with the requirements of guidance note NI601. "Tanker Plus" may be assigned, on request, at any period of the tank vessel's life in order to reflect the actual quality standard of the vessel.

The differences between "CAP Inland" and "Tanker Plus" are explained in detail in the document "CAP Inland and Tanker Plus comparison", which can be accessed at [www.veristar.com](http://www.veristar.com) ●

### DNI attends the 6th EMSHIP SAB meeting in Istanbul

As a member of the European Erasmus Mundus Master in integrated advanced ship design (EMSHIP) Strategic Advisory Board (SAB), Bureau Veritas attended the SAB meeting in Istanbul on 16th and 17th February 2016. The following items were on the agenda:

- Assessment by SAB members of the EMSHIP programme and activities,
- Presentations of SAB companies and their industrial objectives,
- Internships and topics for masters' theses,
- Job opportunities.

The head of the DNI/RDT department gave a presentation of the Bureau Veritas group, with a focus on research and development activities. Job opportunities, internship possibilities and topics for masters' theses were also explained to all participants, and outlined further during individual contact with students.

Bureau Veritas and Lloyd's Register Foundation awards for the best master's thesis were awarded to Hasan Ozgur Uzoguten for "Application



of super-element theory to crash-worthiness evaluation within the scope of the ADN Regulation", developed in Antwerp under supervision of the RDT department ●

### NEWS

#### News from Strasbourg: CESNI-PT

The first meeting of the "Working Group Technical Requirements" CESNI-PT; ("Prescriptions Techniques") has taken place. This working group replaces the former Joint Working Group (JWG).

Chapter 15, relating to Passenger Vessels, was discussed extensively, and a request for interpretation and proposed amendments for vessels not exceeding 25 m in length and authorised to carry up to a maximum of 150 passengers have been also submitted. In addition, the need to restructure the chapter on Passenger Vessels has been registered.

After many years of recommendations, it has been proposed to include prescriptions in the rules for High Pressure Water Mist (HPWM) installations as permanent fire-fighting systems for protecting engine rooms. The 4th version of the text has been discussed but not yet adopted; further discussions are needed.

The revision of Chapter 9 (Electrical Installations) has been discussed in detail. In June, a hearing / workshop is to be held for industry participants ●

#### RVG

For the first time, a project involving inland navigation vessels with fuel cell installations (hydrogen) was submitted at the CCNR. Such installations require a specific Recommendation. During forthcoming sessions the relevant documents will be analysed and discussed ●





## ADN expiry dates reminder

ADN has issued a reminder about the following expiry dates:

- Transitional period applicable to substances
- Conversion of single-hull vessel to type N double-hull vessel.
- Minimum valve setting of 6 kPa allowed in existing type N closed vessel

The substances listed below are allowed in type N vessels with specified cargo tank type and design until 31 December 2015.

The conversion of the cargo area of single hull tank vessels to achieve type N double-hull vessel is admissible until 31 December 2018. There is no transitional provision applicable to modify the cargo

area. The vessel parts outside the cargo area will have the benefit of transitional provisions (fire-resistant accommodation and wheelhouse material, electrical equipment, temperature class and explosion group). A modified vessel will be allowed to continue its operation beyond 31 December 2018 with the benefit of specified transitional provisions (ADN).

The goods for which type N closed with minimum valve setting of 10 kPa or 0.10 bar is required can be transported in an existing vessel type N closed with minimum valve setting of 6 kPa or 0.06 bar until 31 December 2018.

Existing single-hull tank vessels with a deadweight of less than 1,000 tonnes are allowed to carry authorized substances until 31 December 2018. ■

### PRODUCTS ALLOWED TO BE TRANSPORTED UNTIL 31 DECEMBER 2015

UN No	Type of Vessel	Danger	Cargo tank design	Cargo tank type
1203 MOTOR SPIRIT OR GASOLINE OR PETROL	N	HAZARDOUS TO AQUATIC ENVIRONMENT AND HEALTH	Closed cargo tank	Integral cargo tank
1268 PETROLEUM DISTILLATES	N	HAZARDOUS TO AQUATIC ENVIRONMENT AND HEALTH	ADN 1.6.7.4.2	
1268 PETROLEUM DISTILLATES	N	HAZARDOUS TO AQUATIC ENVIRONMENT AND HEALTH	Closed cargo tank	Integral cargo tank
1987 ALCOHOLS, N.O.S. (CYCLOHEXANOL)	N	HAZARDOUS TO AQUATIC ENVIRONMENT	Open cargo tank with flame arrester	Integral cargo tank
2430 ALKYLPHENOLS, SOLID, N.O.S. (NONYLPHENOL, ISOMERIC MIXTURE, MOLTEN)	N	HAZARDOUS TO AQUATIC ENVIRONMENT	Open cargo tank with flame arrester	Independent cargo tank
3256 ELEVATED TEMPERATURE LIQUID, FLAMMABLE, WITH FLASH-POINT ABOVE 60 °	N	HAZARDOUS TO AQUATIC ENVIRONMENT	Open cargo tank with flame arrester	Independent cargo tank
3257 ELEVATED TEMPERATURE LIQUID, AT OR ABOVE 100 °C AND BELOW ITS FLASH-POINT	N	HAZARDOUS TO AQUATIC ENVIRONMENT AND HEALTH	Open cargo tank	Independent cargo tank
3295 HYDROCARBONS, LIQUID, N.O.S. (1-OCTEN)	N	HAZARDOUS TO AQUATIC ENVIRONMENT	Closed cargo tank	Integral cargo tank
3295 HYDROCARBONS, LIQUID, (POLYCYCLIC AROMATIC HYDROCARBONS (MIXTURE))	N	HAZARDOUS TO AQUATIC ENVIRONMENT AND HEALTH	Open cargo tank with flame arrester	Integral cargo tank
3295 HYDROCARBONS, LIQUID	N	HAZARDOUS TO AQUATIC ENVIRONMENT AND HEALTH	ADN 1.6.7.4.2	