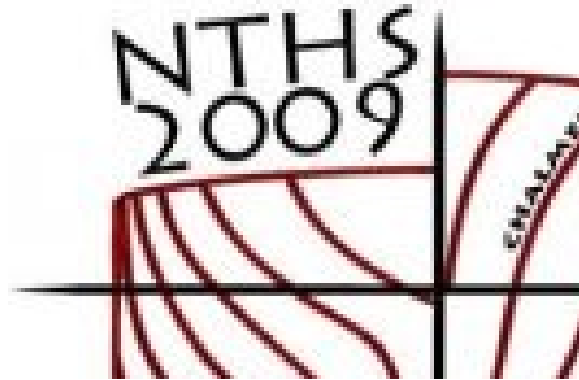


# NTHS 2009 – Report

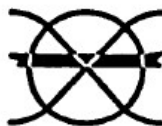


**Gothenburg - Sweden**

**23 - 27th of March- 2009**



**Laivanraken-**



**Nul-kryds**



**Mannhullet**



**KTH**

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## NTHS 2009 – Introduction to the report

Everyone is talking about the world's economical crisis. People are losing their jobs and companies are going bankrupt. But when arranging and attending this congress, nobody was seemed to be affected by the crisis. It was not difficult to find companies that would be our sponsors (a great thanks to them) and during the congress companies would still present themselves and their businesses to us. The participating naval architect students were also able to have a very good time together despite the crisis.

The congress was hosted by Chalmers Skeppsbyggare, which is a society of naval architect students from Chalmers University in Gothenburg. The congress took place from 23<sup>rd</sup> to the 27<sup>th</sup> of March 2009. The maritime industry of the western Sweden was presented to 50 coming naval architect students from Norway, Sweden, Denmark and Finland.

From Nul-Kryds, the naval architect society from DTU, a delegation of 10 participated. The delegation included students of different stages of their education, different ages and genders, but we all had our great interest for ships, maritime industries and having a good time in common.

This report contains information about and stories from the congress.

Martin F. Rasmussen  
President of Nul-Kryds



*The Danish delegation*

## Schedule of the week

### Sunday

- Arrival at Hostel in Karskrona

### Monday

- Introduction
- Presentation at Kockums
- Lunch at Kockums
- Visit to the Yard and Workshops
- Dinner at restaurant Nivå

### Tuesday

- Bus to Gothenburg
- Lunch at SSPA
- Roundtrip at SSPA
- Dinner with DNV

### Wednesday

- Bus to Henån
- Lunch in Henån
- Roundtrip at Najad
- Bus back to Gothenburg
- Dinner at Chalmers sauna alt. Board meeting

### Thursday

- Bus to Campus Lindholmen
- Mini convention
- Lunch at Lindholmen
- Mini convention continues
- Banquett

### Friday

- Lunch and end of NTHS 2009

Thanks to our sponsors and partners



**MAERSK**

 **MAERSK DRILLING**



## Participants

### DTU - Denmark

Name	Nationality
Lars Peter Løvendahl Raun	Danish
Martin Frederik Rasmussen	Danish
Jesper Rosenkrantz Andersen	Danish
Nikolaj Peter Lemb Larsen	Danish
Frank Østrup Rasmussen	Danish
Jacob Frøhlich	Danish
Ignazio Diaz Huerta	Spannish
Richard Le Failler	French
Janus Joensen	Danish

### NTNU - Norway

Name	Nationality
Andreas Eios Haugstad	Norwegian
Ole Jørgen Aarvik	Norwegian
Per Erlend Voie	Norwegian
Henriette Flathaug Ramberg	Norwegian
Kjersti Strand	Norwegian
Solveig Mari Walsøe Pettersen	Norwegian
Magnus Valen	Norwegian
Jørgen Laake	Norwegian
Christian Bjanger Skjelbred	Norwegian
Tobias Edward King	Norwegian

### Chalmers - Sweden

Name	Nationality
Sophia Riisberg Jensen	Swedish
Luis Felipe Sanchez Heres	Mexican
Niclas Moen Gustavsson	Swedish
Daniel Knutsson	Swedish
Marcus Larsson	Swedish
Andre Sauer	German
Sujit Kumer Saha	Bangladeshi
Johan Asplund	Swedish
Christian Hallberg	Swedish
Benoît Simbelie	French

### HUT -Finland

Name	Nationality
Juho Ala-Peijari	Finnish
Mika Heiskanen	Finnish
Martin Bergström	Finnish
Veikko Kalevi Kymäläinen	Finnish
Olli Puustinen	Finnish
Jukka Ignatius	Finnish
Jonne Saarelainen	Finnish
Joel Nils Leonard Knif	Finnish
Tuomas Eerikki Helin	Finnish
Risto Ajanko	Finnish

### KTH - Sweden

Name	Nationality
Patrik Almqvist	Swedish
Erik Jerilgård	Swedish
Erik Ovegård	Swedish
Björn Windén	Swedish
Mårten Silvanus	Swedish
Fredrik Bender	Swedish
Miriam Fürth	Swedish
Markus Norberg	Swedish
Christian Lindeén	Swedish
Joacim Westlund	Swedish

## Account

Accounts for the Danish participation in the NTHS 2009 congress.

### **Balance (all amounts in DKR)**

#### Income

Sponsors	69000,00
Participants' payments	6000,00
	75000,00

#### Expenses

Participation fee	-20938,00
Transportation	-4695,93
Gift	-502,76
Provisioning and entertainment	-3390,71
	-29527,50

#### Revenue

45472,50

## Report from the congress

### **Monday 23<sup>rd</sup> – Visit at Kockums**

On the morning of this first day of the congress, the hosts from the Chalmers delegation bid everyone welcome with a taste of the delicate Finnish liquor: Minttu. After this interesting cultural experience, the programme for the week was presented and we got ourselves prepared for the company visit of the day: “Karlskronavarvet”, the ship yard in Karlskrona owned by Kockums AB.

#### **Kockums**

The visit was hosted by Henrik Johansson, a Naval Architect at the yard. He begun the visit with a thorough 1½ hour presentation of the history of the yard and a walkthrough of typical ships built by and building methods used at the yard. The following will be a short recap of the presentation.

#### **Presentation of the yard**

The yard was founded in 1680 by the Swedish King Karl XI as a naval shipyard – its location was chosen because the waters around Karlskrona had fewer days with ice blocking the harbour than the existing yard in Stockholm. To this day about 460 ships has been built at the yard and the main focus is still on naval vessels, which are delivered to a number of countries including Australia, Singapore and Denmark (Std. Flex class).

The Kockums Company is a part of the ThyssenKrupp group whose main activities are steel production, elevator building and marine building and design. Also under the Kockums Company is the Muskö yard which is a repair yard based inside a mountain allegedly able to resist the force of a nuclear bomb – and the Malmö yard which in its time (1873-1996) has built more than 600 ships but now only functions as a design centre.

Kockums expertise lies in their ability to build stealth ships – a skill at which they see themselves among the world leaders, if not the world leader. Their latest accomplishment is the rhinoceros-resembling Visby-class which is stealth – not only by the classic means of low radar reflectivity – but also due to small engine-, IR-, magnetic-, emission-, noise- and visual signatures.



*The Visby-class stealth naval vessel. The ship is barely seen in the centre of what seems to be an invisible force ploughing through the water.*



This is partly achieved by building as much of the ship in composite materials – another expertise of the yard which was presented in practical use at the following tour of the yard. The yard also makes use of composite materials in the building of mine sweeping and mine hunting vessels which can thereby avoid triggering magnetically sensitive mines. Finally, naval submarines are built at the yard but the main building material of these is still steel – mainly because a full carbon fibre submarine would not be able to submerge.

### **Lunch**

After the extensive presentation, a light lunch was served by the yard’s canteen. Given the choice of five different dishes the typical congress member chose the traditional Swedish “Kjötbullar” accompanied by a “Pripps lättöl”.

### **Tour of the yard**

The lunch well consumed, the congress members were supplied with hard-hats (the Danish delegation excelled by having brought their own) and the tour commenced. The tour included a view of the yard’s steel production facilities, a Visby-class corvette seen from the outside and a few submarines laying in dry-docks. Finally, a display was given of the process of making composite material shell plates; an interesting but dizzying experience due to the heavy use of epoxy in the process.



*Naturally no photos were allowed in the yard, but we given permission to take a group photo in front of an old building in the yard area not used for anything. Danish delegation in white hard-hats and partially holding pipes.*

### **The afternoon and evening**

Following the interesting but information-heavy visit to the yard was a two-hour meet-and-greet at a park in Karlskrona next to a naval museum which was unfortunately closed. The event was a chance for the congress members to have a good time together and learn to know each other. At the end of the two hours a bus drove the congress to “*Nivå Stekhus*” in Karlskrona, where a delicious meat-rich dinner was served, after which their selection of drinks was explored exhaustively.



*Naval architect students having a good time at Nivå Stekhus*

## ***Tuesday 24<sup>th</sup> – Visit at SSPA and Dinner with DNV***

The day started with breakfast at the hostel at 6.30 in Karskrona. After the breakfast the course was set towards Goteborg, this was a bus trip that took approx. 4 hours.

After this long bus trip we got a warm welcome at the SSPA "Statens Skeppsprovningens Anstalt" where they served a nice lunch.

After the lunch all the delegations were divided into three groups for practical reasons.

### **The roundtrip at SSPA**

A short description of the facilities, more than 6000 ship hull forms have been tested at SSPA, including both merchant, naval vessels and offshore structures.

SSPA has the capability to perform most kinds of model testing in its facilities: the towing tank, the large cavitation tunnel and the sea keeping and manoeuvring basin - Maritime Dynamics Laboratory, (MDL). Wind tunnel tests can be performed at external test facilities. These facilities are displayed with some technical data, and a picture, later in this capture.

All test facilities at SSPA are designed to perform tests with large models, which have many advantages, given that scale effects are reduced and more reliable measurements can be performed.

Methods for performing field (outdoor) model testing with fully equipped models have been developed at SSPA and can be used on a routine basis.

SSPA has, as part of maintaining a high quality in its services, applied for and been accepted as an Accredited Laboratory for performing resistance, self propulsion, and open water tests in the towing tank.

## Technical Data

### The towing tank



#### TECHNICAL DATA

<b>Basin</b>	L × B × D	260 × 10 × 5 m
<b>Carriage</b>	Speed	0 - 11 m/sec
	Speed accuracy	± 0.001 m/sec
<b>Waves</b>	Wave length	0.4 < lambda < inf. m
	Wave height	0 < H < 0.3 m
	Frequencies	0 < f < 2 Hz

### The large cavitation tunnel



#### TECHNICAL DATA

<b>Tunnel section</b>	1	2	3
<b>Length, metres</b>	2.5	9.6	8.0
<b>Test section, m<sup>2</sup></b>	diam 1 m	2.6 × 1.5	2.1 × 1.22
<b>Max speed, m/sec</b>	23	6.9	9.9
<b>Min cav number</b>	0.06*	1.45**	0.30**

\* Empty tunnel

\*\* With the propeller in a position 0.2 m below the ceiling

### The seakeeping and manoeuvring basin



#### TECHNICAL DATA

<b>Basin</b>	Dimensions	88 × 39 × 3.5 m
	Water depth	0 - 3.2 m
	Rectangular pit	5 × 9 m, depth 8 m
<b>Waves</b>	Wave length	0.2 < lambda < inf. m
	Wave height	0 < H < 0.4 m
	Frequencies	0 < f < 3 Hz
<b>Wind</b>	Speed approx.	0 - 10 m/sec
<b>Current</b>	Towing up to	3.5 m/sec
	Pump system up to	1.0 m/sec
<b>Carriage</b>	<i>Motion</i>	
	X'°	Speed
	Y'°	± 3.50 m/sec
	psi'°	± 3.00 m/sec
		± 30 ° /sec



During the round trip, there were some very good discussions and questions, and some duels, because we had Martin, who works as a student helper at FORECE Technologies, who had the best facilities the Danes or the Swedish.

Today the research is user-oriented and focuses on efficient, environmentally friendly and safe ships and waterborne transport systems, including maritime technology, intermodal transport systems, ports, terminals, and coastal zone development.

After the round trip all the delegations were driven to the hostel in Goteborg for check inn and freshen up, afterwards there was arranged a dinner with DNV.

### **Dinner with DNV**

We arrived at the harbor where the skonart Gøteborg was moored, we got a fascinating introduction and a round trip at the ship Gøteborg. I could write many pages about the evening but I'll just add a link where you can read about the story about the Gøtenborg: <http://www.soic.se>



*Model of the Gøtenborg*



*Captain Jack at the wheel*

The dinner was served at the cannon deck, this gave an indescribable atmosphere that we will never forget, so the evening went on at local pub, so I can't not stand in for what happened after the first cocktail.

### ***Wednesday 25<sup>th</sup> march – Visit at Najad and board meeting***

We went by buss to see NAJAD Shipyard, and arrived after a nice lunch a beautiful location between Gothenborg and Henån. NAJAD build high-class luxury sailing yachts, at their headquarter in Henån just outside Gothenborg. They deliver yachts from 35 ft. up to over 50 ft. to costumers all around the world. Most of NAJAD's designs are done by the well known design company Judel /Vrojilk & Co.



At arrival we were welcomed with coffee and cake together with a short presentation, telling us all facts about the shipyard and their production. Even though, they are a modern company, they still have an eye for details, and their yachts are a mixture of old handcraft and modern technology.

After this short presentation, we went around the shipyard to see the boats. The quality was impressive.



*Production of a Najad boat*

After the visit at NAJAD, the bus took us to a beautiful hut for the night. We arrived around 17 o'clock for BBQ and sauna party. The hut was located close to a big lake, so it natural to take a swim in the icy lake after a stay in the sauna.



Part of the Danish delegation "warming up".



Monkey-party

## **Board meeting**

After a very interesting visit at the Najad yacht ship building the bus drove us to the next destination, an old Swedish hut. But halfway there the president and vice president from each delegation were dropped off. As a tradition a board meeting is held each year the day before the banquet. The board meeting is a tradition just as old as the NTHS congress, a meeting where important issues are discussed and decisions are taken. The tradition states that the host of the present congress arranges an evening filled with exciting events and a delicious dinner, a splendid evening with a nice and pleasant atmosphere.

This year board meeting was no exception at all. The board meeting started at the naval museum Maritiman in Göteborg harbor. Here the Chalmers delegations had arranged a tour around the museum with one of their members as tour guide. We ended the tour in the wheel house of one of the ships to a glass of champagne. A toast to the Chalmers delegation was given out for the work they had put in the arrangement of this year NTHS congress.

We were then followed to the officer mess onboard the ship, here the actual meeting was about to take place. Placed around the table, with the Chalmers president sitting head of the table of course, the board meeting of the NTHS congress 2009 began.

The first subject on the agenda was the evaluation of this year NTHS congress. With fully agreement between the board members it must be said that the Chalmers delegation had done an incredible job arranging this year congress. And there was a good balance between seeing the companies and the presentations. All though all members are new in the Chalmers delegation and had no experience, they did fantastic. The second subject on the agenda was the status of next year NTHS congress in Finland. But the Finish delegation had showed a great level of ambition, and all members of the board seem satisfied and had no doubt in the finish delegation. The third and very important subject on the agenda is financing the NTHS congress in the future. The Chalmers delegation has had some problems raising the money for this year congress. If this was because of the financial crises or another thing we don't know. But it was decided that if any money were left over at the present congress they should be given to the arrangement of the next year congress. And if the congress suffers a greater loss, the delegation can apply for help at the other delegations. Another toast was handed out to the Chalmers delegation and all board members were looking forward to enjoying the last couple of days at the congress. We left the museum and went to a nice restaurant called the BLISS. While waiting for the dinner, the budget for this year congress was approved by each delegation, and the board meeting ended with a toast.

The dinner was served and enjoyed at a pleasant atmosphere, with old stories and more casual discussions, in all a unique evening to remember. After dinner the bus picked us up and drove us to the Swedish hut, to join the rest of the congress participants.



## **Thursday 26<sup>th</sup> - Mini convention and Banquet**

### **Mini convention**

At Thursday we drove from the hut in Härryda back to Gothenburg, more specified Lindholmen, where the Chalmers delegation study. After a short break near the harbor, where we had a piece of air, we went to a convention. We had six small presentations and a delicious lunch.

The first presentation was given by two persons from TTS ship equipment, a part of Dry Cargo Handling, which is one of five divisions under the TTS group. They told about who they are and how they design equipment for different kinds of offshore constructions. That could be ramps, doors, decks, elevators etc.

After a short break with a cup of coffee and a cake we went back to listen to the next presentation. It was from Berg Propulsion, which is a company who manufactures propellers and equipment for various types of vessels and naval applications. We had an interesting lecture in propellers and how to study the risk of and avoid cavitation.

Then we had another coffee-break and next a presentation from a consultancy firm; FKAB Marine Design. FKAB delivers ship design for ship-owners and shipyards. In addition, they supply their customers with all types of marine design related engineering services such as conversion design, stability calculation, feasibility studies, project management, shipyard evaluation etc.

The last presentation before lunch came quickly after and was delivered by a guy from Bassoe Technology. Bassoe Technology is a quite young engineering company for marine and offshore unit design, started in September 2007. They have a special focus on mobile and floating offshore units and they develop and deliver concept solutions, basic designs as well as detail designs and construction assistance and commissioning. Although they are a quite new company they consist of senior engineers with a great experience so they are not to be confused with a green company.

After these four presentations we went to the canteen to have a tasty lunch, and then we continued with a presentation from Lighthouse maritime competence center. Lighthouse is a unique multidisciplinary maritime competence and research centre initiated by Chalmers, the School of Business, Economics and Law at Göteborg University and The Swedish Shipowners' Association. Lighthouse has the vision that they *will be a natural beacon for research projects, educational efforts and innovational activities within the Maritime sector.*

The last presentation was from Rolls Royce University Technology Centre Of Computational Hydrodimensionals, who had a lot of PhD students, and offered supervisors and themes for students interested in writing a PhD. After that last presentation we went upstairs and had a cup of coffee and the opportunity to mingle and talk with the speakers and discuss the convention with the other students. Then it was time to take the bus back to the hostel and prepare for the event of the week: The banquet.

## The Banquet

The last thing on this week's program was the banquet.

This year's banquet was held at the "Skansen Lejonet" in central Gothenburg, which is an old defense building completed in the year of 1694. It was designed to protect Gothenburg against the Danes, who was having the control in now-Swedish region Scania.



*"Skansen Lejonet", location of the banquet*

The beautiful surroundings of "Skansen Lejonet" made it ideal for holding the banquet, and when we arrived we were served very good champagne until all the guests had arrived.

Naval architecture student from Scandinavia mostly consist of people with XY chromosomes, this means a shortage of women, but luckily for the guys, an old rule says that the hosting delegation must invite "external" women, so the ratio between men at women is 1:1. We were all very glad to a lot of members from the local dance club showed up.

After the champagne we went upstairs where the dinner was served. The choice of menu was well received by many of the participants. During the dinner the host nation was presented gift from the participating delegation. The hosts from Chamlers University received a champagne cooler made from the forepart of an old wooden towing-tank model by the Norwegians, and from the other Swedish delegation from Stockholm they received a nice life jacket integrated "survivalkit". The Danish delegation handed over a lifebuoy with a moderate supply of "Gammel Dansk" – which was highly loved throughout the week. The delegation from Finland gave the hosting delegation a towing tank made of an old bathtub.



*Banquet dinner*

After the dinner was successfully completed this year chairman for the NTHS handed over the responsibly for conducting the next year NTHS to Jonne - the chairman from Finland.

We all went downstairs to the tunes from a local big band orchestra. Later in the evening a disc jockey was playing the music and the bar was free.

It was a great evening, with a superior dinner and a great performance from the band and DJ.



*Towing tank test*

## ***Next Year***

The NTHS congress in 2010 will take place in Finland. Finland is known, to us naval architect students at least, for building large cruise ships and icebreakers. The finish people got a well deserved reputation for drinking, partying, sauna and being good company. There is no doubt that next years NTHS (also) will be an unforgettable event.



*A picture from the shipyard in Turku, Finland*