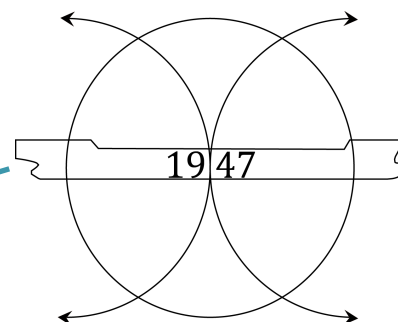


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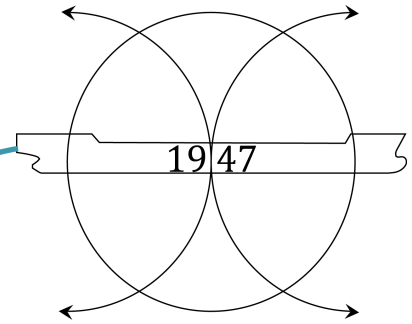
67th NTHS

Report

2014 Gothenburg

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Foreword

This year's Nordic Technical Universities Shipbuilders (NTHS) Congress took place in and around the beautiful city of Gothenburg. Although actual shipbuilding has not taken place in this part of Sweden for some years, it was apparent from the trip that many interesting maritime activities are still going on. We have thus been introduced to the challenges and technical solutions of loading ramps for RO-PAX and Ro-Ro vessels, design and production of controllable pitch mechanisms and propeller shafts and many other interesting topics as it will be shown in this report.

The last couple of years the Danish delegation has mainly consisted of familiar faces. This year, however, a lot of applications from newer members of Nul-Kryds were received and the final delegation consisted of a good mix. This is no doubt another sign of the growing interest in the field of maritime technology, which is experienced at DTU at the moment. It ensures social connections across the years as well as a means for consistency in the association and is therefore very welcome.

The NTHS congress, this year being held the 67th time, remains a valuable way to learn about the wider aspects of the maritime industry as well as a fantastic way to form both social and professional relationships across the Nordic countries. In my opinion, the importance of having a good network in the industry cannot be exaggerated.

It is my impression that the companies in the maritime industry also recognize the importance and value of student congresses like this. The generous financial support received by the association for participation in the congress is a clear testimony to this. For that, and our good cooperation in general, I would like to extend our greatest appreciation and thanks to the sponsoring companies.

This report summarizes the NTHS experience from the viewpoint of the Danish delegation. I hope you will find it interesting and as always questions, comments and requests of any kind are very welcome.

Lasse Normann de Boer

Chairman of the Board
Nul-Kryds

Nul-Kryds

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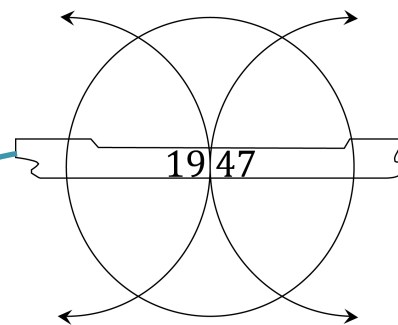
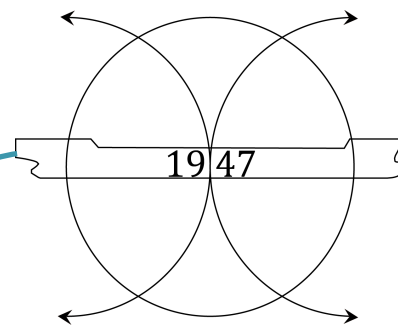


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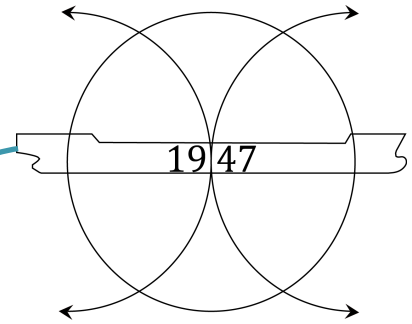
Schedule of the week

The schedule below lists the companies visited along with social events during the NTHS week.

Date:	Before Noon	Afternoon	Evening
Tuesday Mar 25	Meet-up and information at Chalmers	Company Visit: TTS	
Wednesday Mar 26	Chalmers visit	Company Visit: Stena	
Thursday Mar 27	Company presentations	Company Visit: Caterpillar Propulsion	
Friday Mar 28	City tour around Gothenburg in tram	Sport Event	Banquet

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Participants

Nul-Kryds (Copenhagen)

Lasse Normann de Boer
Arnbjørn Gunnar Vincenzo Maressa
Christian Simon Nielsen
Frey Gerner Callesen
Henrik Mikkelsen
Henrik Philipsen
Hongran Li
Jacob Rebién Johannesen
Kasper Fønss Bach
Nikolaj Skov Jespersen

Mannhullet (Trondheim)

Andreas Bergstad
Andreas Orsten
Jostein Follestad
Tine Louise Trøen
Yngvild Slettevold
Aleksander Vold Kristiansen
Hans Jakob Vik
Marte Shetelig
Jon Bjørnø
Jørgen Rørvik

Laivanrakentajain Kerho (Helsinki)

Esa Takkinen
Mira Honkanen
Ville Viitanen
Jani Kuniala
Jürgen Rosen
Santeri Ihalainen
Justin Champion
Aleksi Airinen
Martti Loponen
Petter Öhman

Chalmers Skeppsbyggare (Gothenburg)

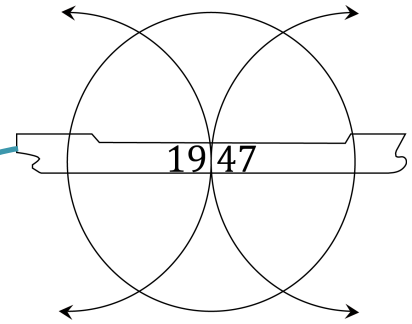
Patrik Molander
Johanna Lennmalm
Lisa Kilsmark
Lisa Dahlström
Jennifer Ringsby
Matej Prevc
Niklas Blomgren
Surya Peravali
Ola Lindahl
Ivar Jakobsen

Kungliga Skeppsällskapet (Stockholm)

Johan Fridström
Sebastian Thuné
Adam Häggqvist
Erik Nordgren
Mårten Kreiss Amberg
Niklas Svenningsson
Johan Olsson
Urban Andréén
Linus Olin
Anders Sjule

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Tuesday 25th March 2014

Chalmers

On the first day of the NTHS-congress, we were picked up by the Chalmers delegation at Gothenburg Central Station. From there, we walked to the bus that was going to take us around the Gothenburg area for the next four days.

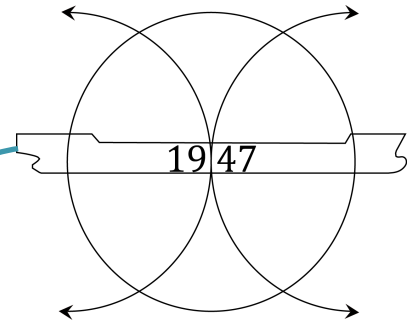
After boarding the bus and getting rid of our luggage, we drove off to Chalmers University of Technology. During this trip, we also saw some of the beautiful features of Gothenburg city.

At Chalmers, we were introduced to the congress schedule, which had a lot of exciting companies and places we had to visit. Furthermore, there was lunch and we got to know some of the people from the other delegations.



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TTS

After finishing lunch at Chalmers we went back to the bus. The bus took us to the company TTS. At TTS we were presented with the core businesses of the company, which included a wide range of loading equipment. Especially heavy lifting equipment and loading ramps used when loading and unloading Ro-Ro and cargo vessels were major topics for the company.

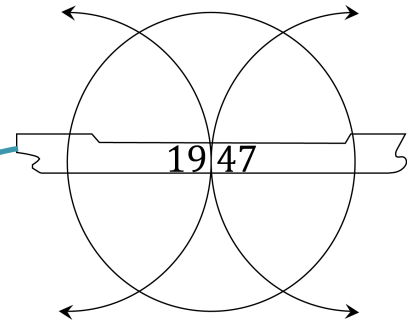


After a lot of presentations and technical discussions about the company's vessel solutions we had dinner and drinks. This gave each and everyone of us a good opportunity to talk with the employees of TTS and get an understanding of the challenges which lie within working there as an engineer.



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Wednesday 26th March 2014

GVA

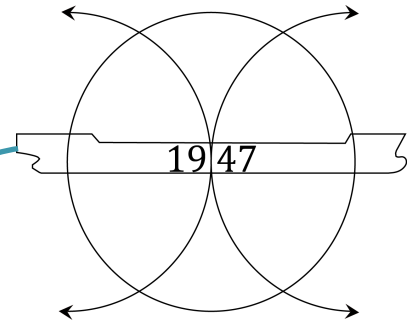


We started early Wednesday by getting a good and solid breakfast at our Hostel. Thereafter a bus took us to the harbor of Gothenburg, where we were picked up by a ferry that took us on a 7 minutes sailing tour to the other side of the river. Afterwards we walked to Svea Building in Chalmers University, Lindeholm Campus. After some interaction with the other delegations, we were given a presentation by GVA, about the history of the company and the offshore products they are working on. GVA gave an interesting inside view of the offshore industry, especially about their semi submersibles and gave the impression, that they need Naval Architects in the industry.



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Stena Teknik



The delegation went back to the ferry port where we had a nice sailing back to the starting ferry port.

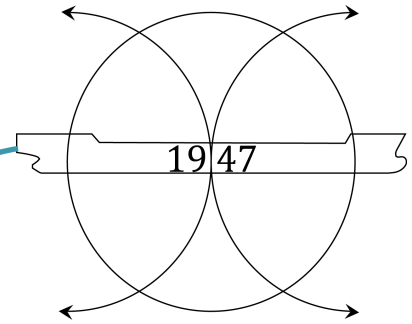
Afterwards we walked along the ocean side of Gothenburg to Stena Teknik. Before we had lunch, we had a social gathering in front of the magnificent ocean view of Gothenburg at Stena Teknik. After a good lunch, the representatives from Stena Teknik gave three presentations about the big family-owned company. They introduced the history of the company and the technical issues they are working on, such as hydrodynamics and natural gas as a replacement of fuel in order to reduce CO₂ emission and the environmental impact of their ferries. During the break and after the presentation, we had a good discussion time with the company and were offered a snack.

When our visit at Stena Teknik was over, we were picked up by a bus, which took us for a ride to the University owned recreational cabin in HÄrryda. The cabin was surrounded by a beautiful Swedish lake and forest, and had sleeping space for all of us. We ended the day with traditional Swedish potato soup and with a social party at the sauna in the cabin and were swimming in the cold lake.



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Thursday 27th March 2014

Company presentations

Thursday morning we were picked up by the bus and then drove to the headquarter of the Swedish Sea Rescue Society (SSRS). Here we were provided with a breakfast and thereafter we were ready for some company presentations. At first SSRS's maritime leader Andreas Arvidsson gave us insight in the organisation and its challenges, when operating a sea rescue service based on voluntary work. He also told about the types of boats they use in the rescue operations and specially pointed out their ice-gliding hovercraft for rescues in the wintertime.

Next presentation was from Volvo Penta. Here we were introduced to their Volvo Penta IPS, which is a complete propulsion system mainly for leisure boats. The compact system has twin counter-rotating propellers that drive the boat forward, and competes on low emissions and high efficiency.

Henrik Malm, Business-developing manager, presented the last company that morning, MAN Diesel & Turbo Sweden. He told about the MAN organisation in general, their force product wise and their market share. He also gave an interesting view at the needed skills of a naval architect, though he specified that in many jobs you should beyond having the technical knowledge also be a skilled salesman.

After the company presentations we were served a nice lunch, where we had the opportunity to have a more informal conversation with the company representatives. Next point at the schedule was a visit at Caterpillar Propulsion.



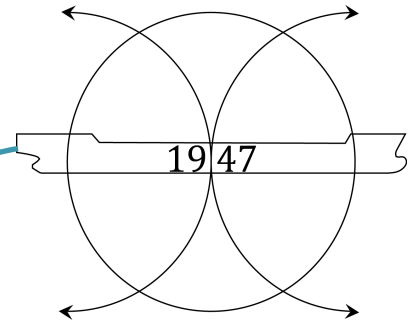
**VOLVO
PENTA**



MAN Diesel & Turbo

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Caterpillar Propulsion

At Caterpillar Propulsion the delegation were divided into two groups. One team got a guided tour at their production facilities and the other got a general



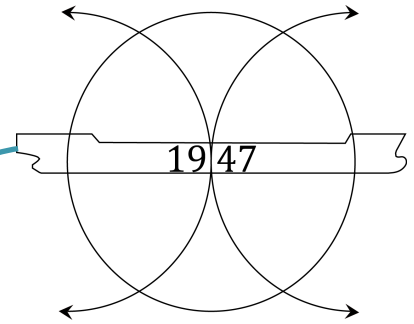
presentation about the company, and thereafter the teams switched. It was very nice to be shown how the manufacturing of a propulsion system with propeller and shaft operates. For example we got the chance to look inside a hub of a controllable pitch propeller and at the company presentation we got a technical insight of their CP-propellers. They presented a design with implemented possibility of feathering the blades. This concept is used when twin screwed ships must be able to be powered by only one propeller for lower speed. The feathering of the unused propeller then makes the propulsion more efficient.

After our visit at Caterpillar Propulsion the delegation went out for a nice meal at an Indian restaurant, while the chairmen of each delegation had their annual board meeting. Later that evening we all gathered at a music venue for a drink, where also the NTHS-oldtimers joined us and told old stories and jokes, which ended a great day.



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Friday 28th March 2014

City tour, volleyball and Banquet

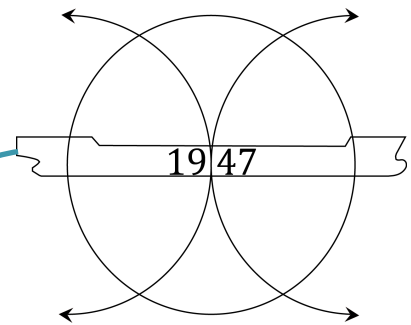
After checking out from Masthugget Terassen hostel, the whole conference boarded a tram that the Gothenburg delegation had hired exclusively for us. Brilliant concept, as the merry loud and festive crew would not cause any harassment to other commuters this beautiful morning with clear blue skies in Gothenburg. We toured the beautiful city of Gothenburg for a few hours.

After a nice lunch break, during which a delicious fish soup was served, the whole crew checked in at Kvibergs hostel situated in an old military barrack.



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Afterwards a beach volley tournament was held, with mixed teams, which we suspect the Swedes had planned to avoid too much rivalry between the countries. So in a socialist spirit, everyone was the winner of the volleyball tournament. The tournament was followed by the traditional anecdote event, which was a perfect opportunity for friendly rivalry, and especially the Norwegian and Danish delegation engaged in friendly battle and bonding, that will continue at future NTHS.

The banquet took place in the old military canteen at the Kviberg barracks. We met early in the evening for welcome drinks and socialization with the oldtimers who had shown up. Afterwards, a splendid three-course meal was served. We were continuously entertained by the numerous traditional speeches and events, customary for a proper NTHS banquet. When the fine dining had succeeded, a band came on stage and we danced the rest of the night.

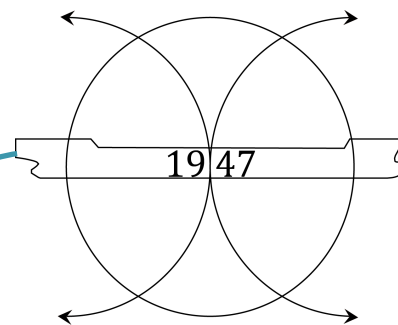


The Danish delegation along with a number of the honorable old-timers. From left to right; Drude Hargbøl Hundevadt, Frey Gerner Callesen, Kasper Fønss Bach, Christian Simon Nielsen, Arnbjørn Maressa, Hongran Li, Pablo Esquivel de Pablo, Mathias Rasmussen, Henrik Phillipsen, Lasse Normann de Boer, Jacob Johannesen, Aleksander Hamdan, Nikolaj Skov Jespersen and Thor Peter Andersen.

END

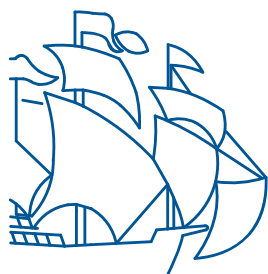
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Sponsors

Our sincerest gratitude towards the sponsors of this year's congress. Without this financial support, participation in the congress would be impossible.



OSK-ShipTech A/S

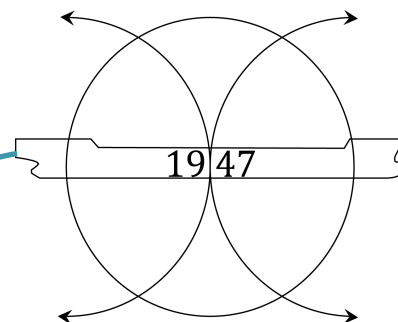
Danske  Maritime

KARSTENSENS SKIBSVÆRFT A/S



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Accounts

Income

	Budget	Accounts	Note
Student's payment (10 x DKK 600,00)		DKK 6,000.00	
Sponsorships:			
DANSKE MARITIME		DKK 3,000.00	
Karstensens Skibsværft A/S		DKK 2,500.00	
OSK-Shiptech A/S		DKK 5,000.00	
Skibsteknisk Selskabs Fond		DKK 25,000.00	1
Total income		DKK 41,500.00	

Expenses

	Budget	Accounts	Note
Meals during preparation meetings		DKK 612.24	
Transport (Gothenburg/Copenhagen)	9,000.00 DKK	DKK 7,943.87	
Congress fee (10 x EUR 300,00)	22,400.00 DKK	DKK 22,448.90	
Miscellaneous	1,000.00 DKK	DKK 219.86	2
Meals during the trip	1,500.00 DKK	DKK 3,745.62	3
Present for the host delegation		DKK 298.00	
Total expenses		DKK 35,268.49	

Result

DKK 6,231.51

Notes:

- [1] Acceptance to transfer sponsorship granted for the congress in 2013 to this year's budget was received.
- [2] Budgeted amount also includes expenses for the host present.
- [3] Two additional meals during the congress were not covered as expected.