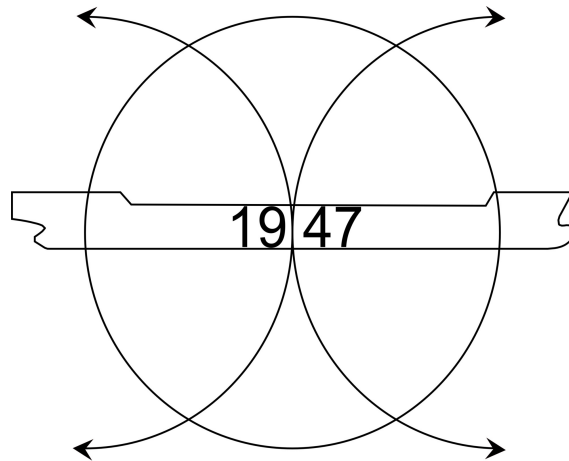


NUL-KRYDS

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# Annual Report 2014

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## Words from the President

In 2014 we have experienced the previous year's increasing interest in studying maritime technology at the Technical University of Denmark (DTU). This has been a great motivator and the board members of Nul-Kryds have been working hard in order to ensure that our new fellow students are maintaining that interest.

A goal for 2014 was to host introduction courses to the software package NAPA. In corporation with the maritime section, NAPA was therefore offered as a design tool in the course *Ship Design*. Though it took a great effort both by the maritime section at DTU, volunteering tutors from Nul-Kryds and people from the industry, the outcome was a success to such an extent that NAPA will be offered for the course again this year. We are confident that NAPA will be a valuable tool for the students in their future careers.

As per tradition, Nul-Kryds took part in the annual Nordic Technical Universities Shipbuilders' Congress (NTHS). It gave the Danish delegation the possibility to reunite with old, and meet new, friends from all of Scandinavia, while gaining an exciting insight in the maritime industry in and around Gothenburg. In Nul-Kryds we consider this annual event to be of considerable value for our members, as it presents the challenges they will meet when they become engineers and at the same time expands their global network.

Nul-Kryds once again had the pleasure of taking part in the planning and execution of the maritime student trip at DTU, which in 2014 took place in South Korea. We visited some of the world's largest shipyards and were invited to site offices and aboard ships by Danish companies. It was truly inspiring to visit a selection of the sophisticated vessels that we might take part in designing, building, maintaining or operating when we soon finish our studies, and once again we would like to express our gratitude to everyone who made this trip possible.

Another important thing which was initiated in 2014 was the *Oresund Maritime Talent Pool* (OMTP), a partnership between the student unions at the World Maritime University in Malmo, CBS Shipping, and Nul-Kryds. We plan on hosting networking sessions, giving the students insight in each student union's academic field. We are very pleased with this new partnership and hope that it will bring value to both our members and the maritime industry.

The board of Nul-Kryds has made a great effort in streamlining our IT platforms and documenting our procedures in the past year. Naturally, this type of work is hardly noticeable for others, but we believe that it was hours well spent, as it will ease the work of the Nul-Kryds board in the years to come. One outcome is very noticeable: our website [www.nul-kryds.dk](http://www.nul-kryds.dk) is now fully functional, showing both past and upcoming events, and both annual reports and NTHS reports. We encourage you to visit the website if you wish to gain more insight in our work.

Lastly I would like to thank all of you. It would not have been possible to reach so many of our goals without the support we have received from the maritime industry, the foundations as well as the maritime section at DTU. We hope the support will continue in the years to come.

Christian S. Nielsen  
President of Nul-Kryds

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# 1 Organization

## Resume of the General Assembly

The General Assembly was held at DTU September 30th 2014. Besides the election for the Board, where the candidates are shown in next section, a small change and a small addition of the by-laws was made. The first change was that the Board is obliged to arrange a maritime related competition instead of the usual paper boat competition. The second change is an addition that the Board are obliged during the general assembly to ask members that are going to graduate before next general assembly to give their contact information to the Board. This will improve the alumni-network and make it easier to invite alumni members to future events. Both changes were unanimously accepted.

## Board members

**Christian Simon Nielsen:** Elected as President. Christian was a member of the board the previous year. Christian will write his master thesis in the spring 2015 and graduate in the summer 2015.

**Frey Callesen:** Elected as Treasurer. Frey is studying a B.Eng. in Naval Architecture. Frey had his internship in the fall 2014, but continued to work as treasurer and participate over Skype at the board meetings.

**Henrik Mikkelsen:** Elected as Vice President. Henrik is new in the Nul-Kryds board and studies a master degree in Naval Architecture on his 5th year.

**Jacob Johannesen:** Elected as first ordinary board member. Jacob studies a bachelor degree in Naval Architecture on his 3rd year.

**Matilde Andersen:** Elected as second ordinary board member. Matilde studies a master degree in Naval Architecture on her 4th year.

**Mads Martinsen:** Elected as first substitute board member. Mads study a master degree Naval Architecture on his 5th year.

**Drude Hundevadt:** Elected as second substitute board member. Last year Drude was first vice president and later interim president in the Nul-Kryds Board. Drude finalizes a master degree in Naval Architecture in the beginning of 2015.

## 2 X-Yachts and Elvstrøm Sails

The majority of the maritime courses taught at DTU deals with commercial ships. In order to provide a broader insight of the maritime business it was decided to make a field trip to X-Yachts and Elstrøm Sails in the southern Jutland for 14 students on a beautiful day in April.

### X-Yachts

The visit at X-Yachts started with a technical presentation given by the engineering department followed by a question session. A factory tour was given, where the students learned how parts were made all over Europe and assembled at the Danish site. The tour at the shipyard gave the opportunity to inspect the yachts internally and externally. The picture below shows the students on the deck of a new built yacht, where it was possible to discuss the rig and the deck arrangement.



Apart from seeing the part of the yacht which is above the waterline, the submerged part was inspected as seen in the picture below. As students at DTU we learn to design ship hulls based on computer simulations where minimising fuel consumption is the main focus. It was interesting to hear from X-yacht that ship comfort in many cases is more important compared to speed and efficiency.



### Elvstrøm Sails

In the afternoon, the trip went to Elvstrøm Sails, where a very skilled sail maker showed the whole production site. The biggest room at the production site was where Elvstrøm sews the conventional sails from sailcloth. It was incredible to see the huge table on which the cloth where laid out and transformed into sails at the built-in sewing stations (see image below).



### 3 Company Event

It has become a tradition to host a *Company Event* once a year. This gives the students a possibility to meet representatives from the industry in informal surroundings at the DTU campus.

In 2014 it was decided to invite a classification society, a consultancy and a ship owner. Our intention was to offer the students an insight in the three main fields of the maritime industry, and we definitely feel that we succeeded.

The companies were:

- OSK-Offshore
- American Bureau of Shipping
- Clipper

Kristian Agdrup from OSK-Offshore presented the company's work on the windfarm installation vessel *Pacific Osprey*. It was interesting to get an insight in a type of vessel not often encountered during the courses at DTU. The design challenges were significant: the deck layout is very important for the efficiency of the vessel and the seakeeping capabilities are very influential on the operational time window.

Mark Corsetti from ABS gave a thorough introduction to the difference between rule-based and goal-based standards, and the interaction between IMO and classification societies. He presented the prescriptive format of goal-based rules, which are separated into tiers describing goals, functional requirements and verifications criteria.

Kjeld Roar Jensen from Clipper concluded the session with a presentation on performance management. He showed us the fuel saving initiatives they are using at Clipper and presented bulb modifications and their effects.

We experienced high turnout and positive feedback from our members, and look forward to hosting a new Company Event in 2015.



## 4 NTHS

The 67th Nordic Technical Universities Shipbuilders (NTHS) congress was hosted by the student network *Chalmars Skeppsbyggare* and took place in and around Gothenburg in late March. The purpose of the congress is to improve the contact between the members and to act as a provider of knowledge in ship building in the Nordic countries. Although shipbuilding has been reduced in Sweden over the last years, the Danish delegation consisting of 10 students still got a good impression of the maritime activities in the area of Gothenburg.

The companies, which were visited or from whom we were given presentations during the week, were: TTS Marine, GVA, Stena Teknik, Swedish Sea Rescue Society, Volvo Penta, Man Diesel & Turbo and Caterpillar propulsion. Thereby the group has been introduced to the challenges and technical solution covering different aspects of maritime related engineering.

Some of the topics discussed with the companies were; Heavy lifting equipment and loading ramps used when loading and unloading Ro-Ro and cargo, semi-submersibles, LNG- and methanol-driven ferries, and design and production of controllable pitch mechanisms and propeller shafts by many other interesting topics.

The congress ended as the tradition prescribes with a festive banquet, which took place in the old military canteen at the Kviberg barracks. The students travelled back to Denmark with a lot of new friendships and the impression that Naval Architects are well needed in the industry.

The full overview of the experiences and company visits during NHTHS 2014 can be found in a separate report on our webpage for anyone with a deeper interest. The 2015 congress will take place in the beginning of March in Finland.



## 5 Martha Evening

Just like many other maritime institutions in Denmark, Nul-Kryds has the proud tradition to show the old classical movie 'SS Martha' once a year. This is one of the main social events of the association and it enables both current and former students to network. It also helps integrating the maritime exchange students in the student environment outside classes.

The evening started out with greeting both new and old faces. Afterwards everyone moved inside to watch the movie (with English subtitles so the exchange students could enjoy it as well) and drink some schnapps and beer. It was an enlightening experience for the new students who saw it for the first time. Then a barbeque followed with a whole nicely roasted lamb and some more beer and schnapps in the garden. The evening was completed with a hammer and nails competition. All in all a very successful evening where everybody had a chance to talk to each other in a casual atmosphere.



## 6 OMTP showcase - Danish Maritime Fair 2014

A new partnership was presented for the first time: Oresund Maritime Talent Pool. The academic partnership includes student associations across three core fields in the maritime industry; Covering technical, business, and legislative aspects. The three participating student associations are Nul-Kryds (Technical University of Denmark, Lyngby), CBS Shipping (Copenhagen Business School, Copenhagen) and WMU Student Council (World Maritime University, Malmö).

The OMTP showcase was meant as a presentation of this new academic partnership – for both associated students and the maritime industry. The newly started Danish Maritime Fair was chosen as a venue to attract both students and industry. The showcase was held Wednesday, 8 October 2014 16:15, and was expected to last two hours. It was free of charge.

Approximately 75 persons, mostly students, participated in the event. Student-to-student networking across the three universities were very well received, in spite of the room being nearly too full. Some students took the possibility to visit the Danish Maritime Fair and the many interesting stands as well.



The presentations were positively received, and a lot of in-depth questions were asked both after the presentations and during the networking event. A more focused line of presentations regarding theme should be considered in future events. The practical work resulted in a well-planned, successful event.



## 7 Student Trip to South Korea

A new tradition will hopefully be formed in these years as Nul-Kryds has helped with the preparation for the DTU student trips held in the autumn break for the last two years. In 2013 around 30 students from DTU headed to Singapore to get a general introduction to the maritime industry. This year 26 students went to South Korea with a focus on newbuilding projects and yards to get a much deeper understanding of the application of our field of study. Apart from the professional gains from the trip the students benefit greatly from the social network that is created during a trip like this.

The trip was generously sponsored by the following funds and institutions: Skibssingeniør Aage Petersen og Hustrus Fond; The Danish Society for Naval Architecture and Marine Engineering's Fund; The Danish Maritime Fund; Ib Moyells Fond; DTU Mechanical Engineering. The full overview of our experiences and learnings can be found in a separate report on our webpage so the following description should just be seen as a short summary of the events.

It was an amazing trip that really gave an insight in the newbuilding world and new networks across the different year groups of students.

### Monday

We were supposed to visit Busan Port Authority, with an accompanying port tour, to get an introduction to the port's activities. Unfortunately we arrived in the middle of the typhoon Vongfong, which made the wave height too large for a comfortable boat trip in the port. Instead we spent the morning visiting the local aquarium. The rest of the day we enjoyed the local foods and split in groups to experience different local attractions.

### Tuesday

We visited Hyundai Heavy Industries at Ulsan where we were given a tour of the museum, the shipyard and the research and development facilities. After a lunch in their canteen we went to a nearby park before we were shown around at one of the huge automobile assembly plants of Hyundai Motor Company. The visit at Hyundai Motor was rounded off by a stop at the their Ro Ro terminal, where we got a look at a huge Ro Ro carrier ready to transport around 4000 cars to Europe.

### Wednesday

Wednesday we visited Daewoo Shipbuilding and Marine Engineering (DSME) and got a guided tour of the showroom and the yard. After the tour we drove to the site office of Maersk Maritime Technology (MMT) where the site office manager had prepared a presentation about the process of constructing the Triple-E ships, which are being built at DSME. The day ended with a guided tour of 'Munkebo Maersk' (one of the Triple-E ships).

### Thursday

The second largest shipyard in Korea, Samsung Heavy Industries, was next in line. We were lucky to see the largest ship in the world, the FPSO 'The Prelude' during the tour of the yard. Maersk FPSO and Maersk Drilling gave us a very throughout tour of the drill ship 'Voyager', where we could ask questions to our tour guides from Maersk Drilling and National Oilwell Varco. We were even able to see a test of their riser transfer system



and their blackout recovery system while onboard. The visit was completed with dinner and drinks on the compliments of Maersk Drilling.

### **Friday**

This day started out with a nice traditional Korean lunch with representatives from DS Norden's site office and STX. Then we went on a tour of the yard by foot which enabled us to enter the welding shop and see the large sections close up.

## 8 Tech Event

In the autumn, Nul-Kryds once again assisted in *World Career's* annual recruitment campaign *Tech Event*. The purpose of the event is to increase interest and focus on the area of maritime technology among engineering students.

The event was held at DTU and consisted of two parts. The first was case sessions, where companies from the maritime industry presented some of their recent projects, thereby giving the students an insight in the challenges of the business. The latter, was a networking session where the students could interact with the companies.

A large selection of companies attended the event, and with great enthusiasm ensured that the students had a productive day.

## 9 Christmas Lunch

The annual Christmas lunch took place on November 8th. The Christmas lunch is one of the main social events of the year, which gathers both former and present members of Nul-Kryds. This event serves the purpose of establishing friendships and connection between the students and the graduated people, whom now work in the industry.

This year impressive 34, both former and present, members of the association participated in the festivity. A lot of new faces showed up which mirrors the increasing interest among students for maritime engineering. Also a couple of familiar Finns, whom had heard of the infamous Danish Christmas lunch at the latest NTHS congress, took all the way to Denmark to attend. They as well as the other participants could enjoy the feast consisting of roasted pork, herring of a broad variety, meatballs and Risalamande among others. The whole feast where enjoyed with good Danish beer and of course the mandatory schnapps.

The entertainment this year were kept in maritime manner. During the evening a competition in Battleships kept the atmosphere cheerful. At the end of the night when the last toast was proposed, the board of Nul-Kryds were sure that the future of the association and in addition the maritime engineering looks bright.



## 10 Plans for 2015

2015 will be a busy year for Nul-Kryds. Many events have already been planned and more are certain to come.

### March

- NTHS in Finland, where 10 members from Nul-Kryds will attend the congress.
- Visit to Mecklenburger Metalguss (MMG) in Germany for approx. 20 of Nul-Kryds' members. During this visit we see how MMG produces propellers and get an introduction to the research and development of propellers.

### April

- This month Nul-Kryds will be hosting Company Evening where engineers from the maritime industry will be telling about what you can expect and experience as an employee in their company.

### May

- Nul-Kryds will arrange an excursion to a cruise ship.

### June

- Martha and barbecue, where current and former members will see the movie "SS Martha" together and have a barbecue. This is a good event where it is possible to make new personal connections.

### October

- Nul-Kryds General Assembly

### November

- Christmas lunch, where people can make new personal connections during the night.



## Our Sponsors

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