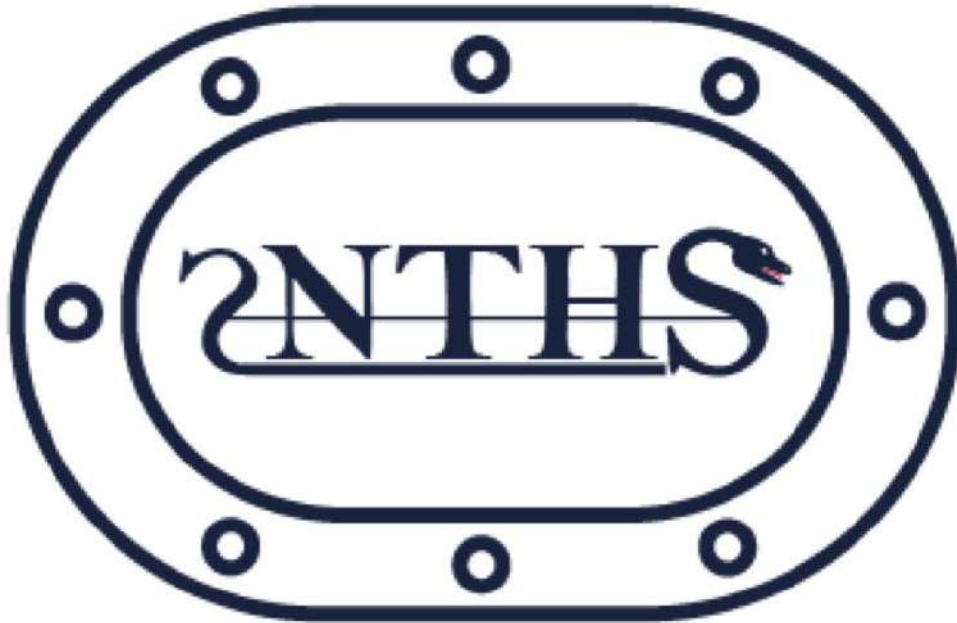


70th NTHS Congress, Norway 2017

Official report

70th NTHS



Norway 2017

The Norwegian Delegation



Words from the President

The 70th NTHS is now over. After a challenging start in August 2016, the Norwegian delegation is proud of the program of this year's congress. This March, 50 Nordic shipbuilding students gathered in Norway to learn about the Norwegian maritime industry and to exchange experiences and knowledge with likeminded. NTHS-70 has resulted in many new and hopefully long-lasting friendships.

Prior to the congress, a questionnaire was distributed to the participants to, among many factors, map their expectancies. The top three choices of most of the participants involved to learn about the Norwegian maritime industry, make new friends, and to see the Norwegian landscape.



During the congress, the participants were introduced to the variety of Norway's maritime industry. Throughout five days, there were six company-visits, eleven company presentations and two workshops. Some of the highlights were testing of the ship simulator at the Norwegian Maritime Competence Centre, the guided tour on board a diving vessel, the shipbuilding competition, and the great discussions during the workshop about the UN's sustainability goals resulting in creative solutions, not to forget the exciting lectures about fishing nots, heat exchangers and thrusters.

During the evenings, different social events were organized, showing the Nordic shipbuilding students the student life of Ålesund and Trondheim. This led to new friendships being made across the Nordic borders. The events involved pub crawls, anecdote night, basement parties and meeting the Old Timers.

The participants seemed amazed by the spectacular scenery at the west coast. With the view of snow-covered mountains, dinner at Alnes, bus ride from Ålesund to Trondheim, including several ferries, the Norwegian delegation made sure that the participants got to experience the fantastic Norwegian nature.

On behalf of the Norwegian delegation I want to thank all our sponsors, especially our main partner DNV GL, for making this year's congress possible. It would not have become such a great success without your contribution.

Based on the feedback from the participants, the 70th NTHS congress was a great success. With 50 Nordic shipbuilding students, there were no major injuries and everyone were very pleased with the program. I would like to thank this year's participants for all the memories we have created together and we look forward to seeing you in the future.

Lastly, this congress could not have been possible without the dedication and energy of the nine other members of this year's Norwegian delegation; Mildrid, Julie, Johanne, Peter, Sondre, Erlend, Live, Carl and Anders. Thank you for the great collaboration, it has been a blast working with you!

The best of luck to Denmark and Nul-Kryds for NTHS-71 next year!

Best Regards



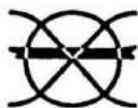
Andrea Aarseth Langli

President, NTHS 2017



Laivanrakentajain Kerho

Finland



Nul-kryds

Danmark



Mannhullet

Norge



Kungliga Skeppsällskapet

Sverige



Chalmers Skeppsbyggare

Sverige



Norges Rederiforbund Norwegian Shipowners' Association

The Norwegian Shipowners' Association is a trade and employment organization for Norwegian controlled companies within the shipping and offshore industry. The primary fields are national and international industry policies, employer issues, competence and recruitment, environmental issues and innovation in addition to safety at sea. Our members are the core and driving force in the Norwegian maritime cluster. NSA's members employ over 55,000 seafarers and offshore workers from more than 50 different nations.

The Norwegian Shipowners' Association's objective is to help Norwegian shipping companies in being frontrunners in the development of a safe, environmentally and socially responsible international maritime industry. It is important for us to support ambitious means of ensuring progress in safety and environmental protection in shipping.

The Norwegian maritime industry is a world leader across the entire spectrum of maritime activities: from shipyards and equipment manufacturers, to its authorities, finance and research communities.

In terms of competence and recruitment, NSA works at all levels of the value chain, from vocational training to research and innovation. In addition to working with the Norwegian maritime schools, the Norwegian shipping industry conducts numerous national and international initiatives to ensure access to high quality crews and officers for service on Norwegian-controlled ships.

The Norwegian Delegation



Andrea Aarseth Langli
President NTHS 70



Johanne Tomine Vartdal
Program Manager



Mildrid Sofie Haga
Vice President NTHS 70



Anders Habostad
Sponsor Coordinator



Julie Vadholm
Banquet Manager



Live Forfang Bjørnstad
Banquet Manager



Sondre Thygesen
Treasurer



Peter Slinning Tenfjord
IT & Equipment Manager



Carl Einar Bonnevie Rasmussen
Sponsor Coordinator



Erlend Torje Berg Lundby
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RASMUSSENGRUPPEN

RASMUSSENGRUPPEN AS history starts in 1936. At that time the first company got set up by the former shipowner Einar Rasmussen. In the period after World War II, Rasmussengruppen built a significant business around international shipping. In addition to investing in conventional tank- and bulk shipping, the Group also started investing in niche products like shuttle tankers, semisubmersible offshore accommodation and service platforms. At its peak, the Group owned an advanced fleet with approximately 20 units.

In the period from 1997-2003 the Group went through a strategic shift and changed its field of business to include financial investments, real estate development and indirect shipping investments.

Real estate is made through the fully owned subsidiary, AVANTOR AS. The Groups investments within shipping is concentrated around a strategic ownership of stocks in the Danish shipping company "Dampskibsselskapet NORDEN A/S".

Today, the Groups financial investments are mainly concentrated to stocks in solid quality companies with satisfying income and moderate gearing.



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Sperre Coolers AS was established to focus on the development, sale and production of heat exchangers. The product portfolio for Sperre Coolers AS consists of the existing shell and tube heat exchangers, as well as the newly developed Sperre Pleat cooler and Sperre Rack cooler.

Sperre consists of 8 companies in Norway, Singapore, Shanghai, Rotterdam and Riga and is also represented by a global network of agents in more than 20 important locations around the world. Sperre's head quarter is located in Norway at Ellingsøya in the municipality of Ålesund.



WÄRTSILÄ

Official Program 70th NTHS

Time	Monday, March 20	Time	Tuesday, March 21	Time	Wednesday, March 22	Time	Thursday, March 23	Time	Friday, March 24
08:00	Wake up	07:30	Wake up	07:00	Wake up	07:30	Wake up	09:00	Wake up
10:00	Seminar with Norwegian Maritime Competence Center, Rolls Royce, Offshore Simulation Center and AKP	09:00	Company presentation at Spere	08:00	Bus to Molde	08:30	Leave for MTS	10:00	Leave for MTS
12:45	Company presentation by Norwegian Shipowners' Association	12:30	Company presentation at Morenot	10:00	Company presentation at Brunvoll	09:30	Presentation of the Department of Marine Technology, NTNU, and boat building	10:30	Company presentation by DNV GL
14:00	Company presentation at Kystverket	14:00	Vard Shipyard	12:45	Bus to Trondheim	12:00	Guided tour at MTS	13:30	Lunch at Tyholt tower/Chairman's lunch
17:00	Dinner at Hoffmann	17:00	Dinner at Alnes	18:00	Arrival at Thon hotel	13:00	Testing of boats	15:00	Rest and prepare for banquet
19:00	Pub Crawl	21:00	Afterparty at Keiseren	19:00	Dinner and party at the Basement	18:00	Presentation by Mannhullet and dinner	18:30	Banquet at Thon hotel Prinsen
						19:00	Anecdote night		
						21:00	Meet oldtimers at Samfundet		



MØRENØT
AQUACULTURE



SINTEF

The Congress – Day by Day

Monday 20th of March

The 70th NTHS congress started in Ålesund at Sunday March 19th. The first night was all about getting to know each other.

We started Monday morning at the Norwegian Maritime Competence Center(NMCC). This center is a meeting place for business and academia and focuses on the marine and maritime sector. Some of the most influential companies in the area have their offices here, such as Rolls Royce and Offshore Simulator Center(OSC).

At NMCC we got three short presentations and a guided tour. The first presentation was given by Kaj Westre who is the managing director of NMCC. He gave us a very inspiring talk about how his family company, Westregruppen, and Rolls Royce got together in 2008, and decided to build the Norwegian Maritime Competence Center. The building was opened by His Royal Highness Crownprince Haakon in 2010. The name of the building was not decided by politicians, but by the founders themselves, and it has lived up to the name ever since. Kaj inspired us by telling us that nothing is impossible and that if you are willing to take risks, you can accomplish whatever you want.

The next presentation was held by Frank Støyva Emblem. He talked about the blue maritime cluster at Sunnmøre and how the companies in this region has become a world leader in design, construction, equipment, and operation of advanced offshore vessels for the global oil and gas industry. Jørgen Drønnen from OSC held the last presentation about how they are making the world's most advanced simulators for Anchor Handling and Platform Supply Vessel operations.

After the presentations, we got a guided tour by OSC and Rolls Royce. We got to experience their simulators, and this impressed all of us; the graphic was incredible and you actually felt like you were moving on the waves while being inside the biggest simulator.

After NMCC, we crossed the street and visited NTNU Ålesund. Here, we ate lunch and Jostein Vaagland gave a presentation about the Norwegian Shipowners Association, their role within the maritime industry and shared some thoughts about the future. The students were really excited about the presentation, so much that we almost lost the bus to next presentation.

Kystverket (the Norwegian coastal administration) was the last company presentation of the day. It started with the second lunch of the day in their backyard with great view towards the majestic mountains of Sunnmøre. Kystverket talked about how they are responsible for making the coastline of Norway safe for traffic. They are producing aids to navigation (atons) that are placed along the coastline. After the presentation, we got a guided tour in their factory where the lights and buoys are made.

After a long day, we had dinner at Hoffmann in the center of Ålesund where we got delicious burgers and beer. As a perfect ending of a great day, we joined the local students from Ålesund to a pub crawl arranged by their student festival U.-K.A.



Tuesday 21st of March

The first company visit of the day were at Sperre. The visit started with a delicious breakfast at Gløsholmen consisting of baguettes, while we got a presentation from the CEO, Erik Langseth. He talked about the compressors and heat exchanges, and we got to learn that every fifth ship in the world has a Sperre compressor! We also got a presentation about conversion, digitization, technology and lean. He talked about going from compressor suppliers to life cycle partners, how to create more value for the customer by elimination of waste within a manufacturing system, and ended his presentation by saying that "the unmanned vessel needs a digital compressor". Our visit ended with a very interesting guided tour in their facilities.

After the visit at Sperre, we took the bus to Mørenot where we got a presentation about the different designs of nets for fish farms. We were lucky and got to see the production hall and how the nets were made, and they showed us the different designs and talked about the usage of these.

Vard was just a two-minute walk away from Sperre. When we got there, we were served a delicious lunch consisting of baguettes, and got a short presentation about safety instructions and the diving-support vessel we were going to see. After getting out safety gear we divided into three groups and got a detailed tour around the vessel which was very interesting for all visitors. A lot of questions were asked, and many photos taken.

The evening was spent at Alnes Besøkscenter, where we got served a good dinner in beautiful surroundings. Ålesund amazed the participants with its mountains and the great ocean! After dinner, we went back to the camping for further socialization.



Wednesday 22nd of March

The day started with a two-hour long bus ride from Ålesund to Molde. When we arrived at Brunvoll Competence Center, the staff gave us a warm welcome. They held an interesting presentation about the history of the company, their marked segments and products as well as some hardcore foil theory.

After the presentation, we visited the production facility. This was very interesting for the NTHS participants. We were guided through several stages of the production, and got some insight in the challenges of producing such large and advanced thrusters. Some stages of the production are autotomized. For example, is robotic grinding used to shape the propeller blades.

After the guided tour, we were served a delicious meal at the company's Canteen facilities. Probably the best meal of the week.

After the visit at Brunvoll, we were heading for Trondheim by bus. The participants got to see the beautiful nature of Norway, making this a memorable bus ride. At arrival in Trondheim, we ate pizza at Mannhullet's student bar and the participants got to meet the marine technology students at NTNU. This was a huge success and international networking was very central.

Thank you, Brunvoll, for your hospitality and for making this day both educational and interesting.



Thursday 23rd of March

The first day in Trondheim was spent at the Department of Marine Technology at NTNU Campus Tyholt. We were met by Sverre Steen, professor and the head of the Department. He gave us an interesting presentation about the department and their future plans. The participants, particularly the Danish, were especially interested in the upcoming Ocean Space Centre. The Ocean Space Centre is an upcoming expansion of MTS which will include an advanced laboratory cluster and "centres of excellence", like AMOS is today. Sverre also told us about the new centre's strategic areas of research; ultra-deep water, the arctic, renewable energy, seafood and energy efficiency.

The participants of NTHS consist of marine technology students from five different universities. So, we also had to test whether they could build a boat that could float with the right side up, by organising a ship building competition. Svein Aanond Aanondsen, university lecturer and responsible for the Marine Technology students' introductory course, explained the rules of the competition. Each team were given a similar block of gurit, four nails a wire and some tools. The boat was required to be carry a weight of 10 kilograms. The competition was intense, and it ended up being really close between the Norwegian and the Danish design. However, Norwegian design ended up winning.



After the competition, we ate lunch, followed up by a guided tour of some of the laboratories and facilities at the Department.

After the tour, we got a couple of hours to talk about the day and whether the Norwegians had cheated in the ship building competition or simply were better educated. The day ended with dinner at the basement, before walking down to Studentersamfundet to meet up with the Old Timers.

Friday 24th of March

The last day of the congress was dedicated to our main partner, DNV GL. The day started with a good breakfast at the hotel, before heading to the Department of Marine technology at Tyholt.

First, Mark Irvine, DNV GL's communication manager for strategic research and innovation, held a presentation about the global challenges in the future related to the UN sustainable development goals. This provided an interesting perspective on the global challenges we are facing today and in the future. Analysis presented in the DNV GL "Spaceship Earth" report suggest that none of the sustainability goals will be reached in all parts of the world, and no parts of the world will reach them all.

However, this day was all about turning risks into opportunities, and despite the negative predictions, there are many positive signs of development. For instance, new technologies are expected to contribute strongly to reaching many of the goals. This served as a starting point for the workshop that followed the lecture. The participants were divided into eight groups that could choose to focus on one of four tasks. All tasks revolved around how the shipping industry can change to contribute to reaching the UN sustainability goals. How can ships produce more energy they use and deliver energy to the market? How can shipping deliver pure water to the world? These were just two of the questions the participants could choose to focus on.



For almost an hour, the groups brainstormed, discussed, and developed their respective ideas. The results from the short session were in the end presented and followed up with questions from the audience. The groups had spent their time well, and could present many innovative ideas. Mark generously offered guidance to those of the participants who choose to participate on Nor-Shipping in June.

Thank you, DNV GL, for making this a really great day, both educational and exciting!

After finishing the workshop, all delegation members, except the presidents, could enjoy the view over Trondheim city with a lunch in the Egon Tyholtårnet. The delegation presidents gathered for the Chairman's lunch. Here they evaluated this year's congress and discussed the future of NTHS.

In the evening, everyone gathered for the gala dinner at Thon Hotel Prinsen. Many alumni from all the Nordic countries had found their way to Trondheim, and many new relations formed during the dinner. The 70th NTHS congress was rounded off at the Basement with a concert by "Ship Happens", the student band for marine technology at NTNU. A perfect way to end an amazing week!





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DNV·GL



Mannhullet

Est. 1917

The Norwegian Delegation represents *Mannhullet*, the student association at the Department of Marine Technology at the Norwegian University of Science and Technology (NTNU) in Trondheim.

Mannhullet is a very central part of the student lives of those seeking marine engineering for the future. Leisure time can be spent on the sailing boat *Steinbiten III* or the motorboat *Havfruen V*. These boats also give the students experience with the sea – an element that every marine engineer must master.

Social gatherings, such as quizzes, company presentations, sports on TV and those crazy parties only marine students know how to make are situated in Mannhullet's basement *Skipslogen*. Every year there are festivals such as *Tyholt Rock Festival*, the *Regatta* or *RUKA*, and the cabaret of *Mannhullets Interne Teater (MiT)*, which are highlights of the semester.

But beer contains calories, and for those who want to burn it away Mannhullet has a gym at the Tyholt Campus called *Kraftgangen*. The sporty students of Mannhullet have access to a range of wildlife equipment, and annual trips to the woods and the mountains have become a tradition. Mannhullet also has two football clubs, *Marin FK* and *Marin FKK*, for women and men. The supporter club, *Bulben*, contributes to a good environment at the football matches.

There are constantly things going on in Mannhullet, and the choir *Tåkeluren (The Fog Horn)* makes every gathering unpredictable. Luckily, the marine students have the newspaper *Marina* to keep track of it all – especially the gossip.

Mannhullet consists of the following sub-groups:

Coma

This group is responsible for trips to the great outdoors. They arrange cabin trips and hiking trips to keep the marine technology students' active.

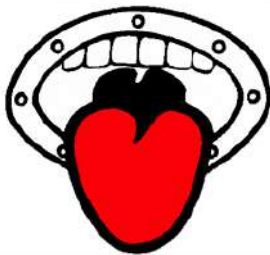


Skipslogen

Almost all student unions in Trondheim have their own bar, but our is indisputably the largest and the best.

MiT – Mannhullets interne Teater (Mannhullet's in-house Theater)

One show every year, always sold out and always a huge success! The members of the Mannhullet board are always part of the jokes...



Tåkeluren

Our own maritime choir. Highly energetic, not choreographed, not talented, but extremely charming. They managed some years ago to get thrown out of a choir festival, so now they participate in band camps instead.

Marina

The newspaper for the students, by the students. Gossip and rumors true or untrue, it's all in there. If your name is mentioned, it's never a good thing.



The Motorboat Committee

Havfruen V is our own motorboat, which was purchased new this year as a gift to ourselves for our 100th anniversary. It is used for maritime activities such as waterskiing, diving, fishing, swimming and tanning (when the weather in Trondheim allows for it).

The Sailboat Committee

Yes, we have our own sailboat, Steinbiten III. It is a Hanse 370, new in 2006, and we are very proud of her!



BK – Industry Contact

Bedriftskontakt, BK, arranges company presentations where companies present themselves for the marine technology students. They are also active in advertising summer internship, and occasionally arrange excursions.

Marin FK and Marin FKK

We have very good athletes in Mannhullet, which are represented by our two football teams for male and female students.



Transportation of chemicals and other bulk liquids

Utkilen is a fully integrated shipping company with headquarters in Bergen, Norway and offices in Riga and Manila. The company, with a history back to 1916, was founded in 1967 and owns and operates 18 chemical tankers ranging from 5,000 to 20,000 dwt. in size. Furthermore, Utkilen has 6 chemical tanker newbuildings on order from shipyards in China and Japan with deliveries in 2018 and 2019. About 450 Norwegian and international seagoing personnel work onboard our vessels and the shore organization totals about 45 employees. We have strong focus on safety and quality and our ISO 14001 safety and quality system is certified by Det Norske Veritas. Utkilen is one of the major seaway transporting companies of chemicals and other bulk liquid cargoes in Northern Europe.

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Tel: 5530 7800 | office@utkilen.no | www.utkilen.no





NCA's green flagship

In 2016, the Norwegian Coastal Administration (NCA) got their first hybrid ship. Early in 2017, the contract to build the next environmentally friendly ship was signed. With OV Ryvingen the environmental concept is taken even further.

NCA's first hybrid vessel, OV Bøkfjord, was built at Hvide Sande Shipyard in Denmark. Due to the innovative and environmentally friendly solutions, OV Bøkfjord was named Ship of the Year in Denmark in 2016.

Our hybrid solutions will be further developed with the next vessel, that is going to be built at Fitjar Mekaniske Verksted in Hordaland. The battery pack of the new vessel will be almost four times as large as the pack that is installed in Bøkfjord, and the solution facilitates high efficiency, reduced emissions and advanced power management.

Another innovative solution is that the excess heat from the vessels main engines during the working day is stored in a "thermos". When

alongside, the nested heat is used as energy for heating the crew area.

NCA's vision is to make our coast and waters the safest and purest in the world. OV Ryvingen will be a yet another key piece in this work, especially regarding two of the three main objectives of the NCA; ensuring safe travel, and to help prevent/limit environmental damage as a result of acute pollution. NCA third main objective is to contribute to efficient transport along the coast.



KYSTVERKET
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www.kystverket.no

Statutes of NTHS

Regulations of NTHS as approved by the board of the 70th NTHS congress hosted by Mannhullet, Norway in 2017

§1. The name of the association is "NORDENS TEKNISKA HÖGSKOLORS SKEPPSBYGGARE".

§2. The members of the association are composed of students from the following universities:

- Danmarks Tekniske Universitet (DTU), Copenhagen
- Chalmers Tekniska Högskola (CTH), Gothenburg
- Kungliga Tekniska Högskolan (KTH), Stockholm
- Norges Tekniske Naturvitenskaplige Universitet (NTNU), Trondheim
- Aalto University, Helsinki

§3. The purpose of the association is to improve the contacts between the members and to act as a provider of knowledge in ship building in the Nordic countries.

§4. The board of the association consists of 10 members. Two from each delegation, chosen by student unions.

§5. The congress

- Every year a congress is to be arranged in one of the four Nordic countries. Each university hosts the congress every fifth year.
- Each university is allowed a delegation of ten participants. The host university may allow more participants if desired.
- The congress must comprise of:
 - Presentations followed by discussion and excursions to laboratories, shipyards and other industrial enterprises.
 - A board meeting with the board consisting of the chairman and vice chairman of each delegation. The following issues will be on the agenda:
 - The President for the following year shall be introduced for the board.
 - Determination of place for the next congress.
 - Probable changes in the rules.
- Invitations must be sent no later than two months prior to the congress. A preliminary schedule should be attached.

§6. The official language of the congress is English.

§7. A member fee cannot be demanded. To cover costs for the congress it is however possible to collect a participant fee, which must be no more than € 300 per participants. The association may not take on economic responsibility.

§8. When electing a new chairman at one of the universities the other universities should be informed as soon as possible. The latter also applies for changes in names, addresses and/or telephone numbers.

Words from the next year's President

I want to start off with congratulating the Norwegian delegation on hosting an exceptional congress, a 70th anniversary worthy. Respectfully representing the students from Trondheim, exhibiting some of our industry and what maritime Norway may offer to our fellow Nordic students.

We are already looking forward to next year's NTHS congress in Copenhagen. Confident that our Danish hosts are planning an interesting and memorable week, providing insight to the local industries, and creating new bonds with our future Nordic colleagues.

The Norwegian delegation traditionally consists of 3rd and 5th year students. In the coming months five lucky 3rd graders are elected, from the many applicants to join next year's delegation. We are excited to see who the newcomers will be, and also hope to meet the graduate participants at next year's banquet among the returning Oldtimers.

Finally, I would like to show my gratitude to our partners over the years. Whom without the annual NTHS congress would not be possible, and hoping for future collaboration.

Best regards,

On behalf of next year's NTHS delegation

Amund D. Helvik
President NTHS 2018,
Mannhullet.



