COMPARISON OF DP OPERATOR TRAINING SCHEMES IN OFFSHORE SECTOR

The paper describes two different schemes to become a Dynamic Positioning Operator. The main goal is the comparison and analysis of the current available training schemes as well as the introduction of some basic problems encountered by the Trainee DPOs on their way to become a certified operator. In the text there are some outcomes and possible solutions based on the interviews made among group of people willing to start the career in the offshore sector and in training phases.

The offshore sector is currently one of the most evolving sector in maritime industry. The higher demand for fuel resources and constant desire to know more made humans look further and deeper reaching for the underwater deposits of oil and gas by the use of the latest technologies. Operations carried out by the dynamically positioned units created in the same time the completely new hazards, not known before. Even the smallest mistake may, in some cases, put the people's life at risk, make severe damage to the environment and structures or equipment. Which brings us to the need for qualified and reliable personnel capable of dealing with different, often dangerous situations. Through the years the most experienced personnel in cooperation with institutions like AODC (Association of Offshore Drilling Contractors) and Nautical Institute developed the training scheme for DP Operators in order to train high quality personnel. On the job training – unpredictable and potentially dangerous for ship's crew and operations became useless.

Nowadays, DP Operator Certificate can be achieved in two ways: either as a training according to Nautical Institute Scheme or training proposed by Det Norske Veritas together with Ship Modelling and Simulation Centre. New ideas utilized by DNV & SMSC together with rise of Trainee DPO having problems gathering necessary seatime and need for already qualified created the necessity to revise previous solutions, to compare the schemes so that training of reliable personnel can still be an answer for the offshore sector demands.
1. NAUTICAL INSTITUTE DP OPERATOR TRAINING SCHEME

Scheme proposed by NI consists of 5 phases to be completed within previous 5 years from the date of documents submission to the Nautical Institute on completion of the scheme.

1\textsuperscript{st} phase: DP Basic/Induction Course – includes the introduction to dynamic positioning, its main principles and systems. Course participants are acquainted with the elements of a DP systems (including position reference systems, environment sensors, ancillary equipment, power generation) and DP operations. On completion of this part there is a compulsory online test to be taken.

2\textsuperscript{nd} phase: DP Familiarisation – is a period of 30 days on board a DP unit (bearing in mind that according to Nautical Institute's definition DP Day is any day when DP operations are undertaken by the vessel with the acceptance of minimum one hour), during this time Trainee DPO is getting familiar with the ships systems, operations and completes section C in DP logbook. Any time exceeding Familiarisation period counts towards 4\textsuperscript{th} phase (180 days of Watchkeeping Experience).

3\textsuperscript{rd} phase: DP Advanced Course – back in accredited training centre. It focuses on practical operation of a DP system and operations as well as possible DP alarms, warnings and emergency procedures. Comparing to the Basic/Induction Course, Advanced is more “hands on” than theoretical, what makes the course participants use the knowledge and experience gained during 1\textsuperscript{st} and 2\textsuperscript{nd} phase.

4\textsuperscript{th} phase: DP Watchkeeping Experience of total 180 days:
- either on board DP vessels class 2, 3 or
- on board DP vessels class 1, 2, 3 provided that 60 of them will be conducted on 2, 3 class units. Time spent on 1 class vessel counts as 0,5 real time or
- on board vessels class 1 (the certificate will be issued accordingly).

DP Watchkeeping Experience is a time period which reflects on the certificate’s type (either limited or full). TDPO must have appropriate time amount logged in the DP logbook. NI emphasizes that a DP unit must have a class notation, and not only be equipped with DP equipment.

5\textsuperscript{th} phase: comprises both:
- issue of the Statement of Suitability by the master of the last DP unit, on which watchkeeping experience period was completed and
- issue of the certificate: either Unlimited or Limited, depending on the types of the DP units from phase 4.

It is possible to upgrade from Limited to Unlimited by doing additional 60 days watchkeeping on vessels class 2, 3.

Nautical Institute gives the opportunity to reduce the time of watchkeeping period by conducting reduction courses, which can be of a following type:
- Intensive DP simulator training;
- Shuttle tanker offshore loading courses;
- DP competence, assurance and Practice training (DPCAP).
There are some points to be remembered when participating in reduction courses:

- none of them can replace the minimum of required 60 days sea time on the DP units class 2 or 3 for the purpose of Full DP Certificate;
- the maximum allowable watchkeeping time reduction through courses when applying for a DP certificate is, from January 2013, 6 weeks;
- none of them may be used as a substitution for the DP familiarization time;
- between time reduction courses it is necessary to undertake at least 30 days of sea time on board of a DP unit;
- together with the rest of the elements belonging to the scheme reduction of DP time must have been completed within five year period.

![Diagram of DP Operator Training Scheme](image)

**Fig. 1.** Nautical Institute’s Training Scheme  

### 2. DP OPERATOR TRAINING SCHEME INTRODUCED BY DNV & SMSC

Training proposed by DNV&SMSC comprises 5 stages in total:

**0 DPO Preparation – Self-study** – gaining basic knowledge about principles of dynamic positioning such as DP history, position reference systems, DP operations etc. – either individually or as a part of Onboard Training System (while on board a vessel). This stage also includes an online test one must pass to participate in the next step. The TDPO has the access to the test results.
1 DPO Start – covers 40 hours exercises. To participate one needs to have the final test from the stage 0 passed. Like in the previous stage, on completion of DPO Start there is an online test with a feedback to the student.

2 DPO Experience – is a further development of a knowledge and practical skills of TDPO. It may be accomplished in three ways:
  - through Onboard Training System (practical DP exercises) or
  - by doing $20 \times 4$-hour DP watches on board a DP unit – confirmed via online reporting system or
  - by Intensive Simulator Training (5 days in a training centre).

DPO Specialization – the stage at which the students decide what type of certificate they receive. When fully available there will be 5 courses to choose from:
  - Course 1 Station keeping – relates to the following DP units: Supply, Standby, Anchor handling, Cruise, Well service, Accomodation, Diving support. It focuses on basic functions of DP system for station keeping;
  - Course 2 Shuttle Tanker – relates to Shuttle tankers. It puts emphasis on the DP system functions concerning approach mode and weather vane;
  - Course 3 Advanced Operations – relates to ROV operations, Cable and Pipe laying, Dredging and Rock-dumping. It focuses on follow target and autotrack modes. Available in 2013;
  - Course 4 Rigs – relates to Rigs. Apart from basic functionality it focuses on posmoor functions. Available in 2013;

DPO Examination and Certification is a part designed to take a test (theoretical and practical) covering the knowledge from a previously selected course. On positive completion of the test the appropriate certificate is issued. It is stated that candidates choosing:
  - Shuttle Tanker specialization are required to complete Offshore Loading Course phase III between DPO Start and DPO Specialization and
  - Advanced Operations specialization are required to complete APOS/HiPAP Course between DPO Start and DPO Specialization.

Those who started DP training with Nautical Institute and couldn't move forward throughout the scheme (due to lack of familiarization period or watchkeeping experience) may very easily convert into DNV&SMSC scheme:
  - students with DP Basic/Induction course may start with DPO Start after completing online test;
  - students holding DP Basic and Advanced Courses, after completing online test may start with DPO Experience;
  - for experienced personnel it is allowed go straight to the DPO Examination and certification level. On the basis of the exam results the certificate will be issued.
3. COMPARISON OF SOME SELECTED ELEMENTS OF THE SCHEMES

Table 1

<table>
<thead>
<tr>
<th>Who?</th>
<th>Nautical Institute Scheme</th>
<th>DNV&amp;SMSC Scheme</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• Officers in charge of a navigational watch on ships of more 500 grt or more</td>
<td>No entry requirements but the STCW certificate is required before issuing a certificate</td>
</tr>
<tr>
<td></td>
<td>• Officers in charge of a navigational watch and masters on ships of less than 500 grt</td>
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</tr>
<tr>
<td></td>
<td>• Master and chief mate on ships of 3,000 GRT or more.</td>
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<tr>
<td></td>
<td>• TDPOs in process of STCW training (only up to stage of familiarization time)</td>
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<tr>
<td>Where?</td>
<td>Accredited training centre – about 67 in the world</td>
<td>SMSC training centre in Trondheim, Norway – only 1 in the world</td>
</tr>
</tbody>
</table>
How long?

- Minimum time span required to complete the training (the issue of the certificate not included) is 5 months 28 days (familiarization time and watchkeeping period, DP basic and advanced courses as well as reduction course included)
- Maximum time span is stated to be 5 years

- Minimum time span required to complete the training (including the issue of certificate but not including phase 0 as it doesn’t have to be dependent on the scheme) is about two weeks (15 days)
- Maximum time span is not defined

Certification

- Unlimited DPO certificate or
- Limited DPO certificate
  Depending on the type of DP units on which the watchkeeping period was conducted

Certificate issued in relation to the course chosen in the 3rd phase (specialization)

DNV&SMSC ⇔ NI

- No connection was found
  DPO candidate can change at any time and stage of NI scheme to DNV&SMSC scheme on certain conditions

Final assessment

- No final assessment (certificate issued on the grounds of the accomplished elements of the scheme)
- Final exam

Control of one's competencies

- Online test on completion of DP Basic/Induction course
  A test carried out after every stage, with the access to the results for the students

Cost

- 5371 Euro (DP basic plus DP advanced)
- 18611 Euro (for shuttle tank training and certification)
- 16194 Euro (for station keeping training and certification)


4. RECENT ACTIONS UNDERTAKEN BY NI

The scheme review conducted by Nautical Institute among DPTEG and other associated parties (also IDPOA) on March 2013 showed that amongst the actual and future DP Operators there is a belief that Nautical Institute instead of issuing certificate of competence for DP Operators should only provide them with “certificate of training” that would allow TDPOs to continue learning. According to the results of a review amongst their members, “competency” is something that can only be assessed on board a vessel or by DNV scheme.

Current situation in an offshore training is described as Catch22 effect, because employers only seek for fully certified personnel which is why unqualified personnel (TDPOs) has no access to the seetime required to become qualified and thereby – certified.

The conversations were carried on about possible changes in the scheme. It is highly probable that scheme would split in two ways: shuttle tank training and the rest of the offshore DP units. In the alternatives for those “rest of DP units” submitted to members’ verification the required seetime was evidently shortened.
(from 30 days familiarization plus about 180 watchkeeping which is 210) up to 90 days in total (60 days familiarization + 30 watchkeeping) or 120 in total (90 days familiarization + 30 watchkeeping), some with possibility of reduction by Seatime Reduction Courses. There were also some new solutions, like passive and active tasks to be performed when on board. Passive ones would be those without propulsion under the guidance by a certified DP Operator, like DP Health checks, training on a ship-based simulator, maintenance of DP and associated system to name only few. Active would cover tasks with propulsion, under the guidance of a certified DP Operator. This group would include amongst other: using DP system to control ship, setting up on DP, emergency ship handling training using manual controls having at disposal only the available, after the worst case failure, thrusters. Along with active and passive tasks would come new definition of a DP day, which would mean a minimum of 2 hours training either actively or passively. From all the seatime period maximum of passive sea days would be of 25%.

The changes that would reflect on DP training with Nautical Institute will be introduced on the at the fifth European Dynamic Positioning Conference being held in London on 20–21 June 2013. Ian Giddings, Technical Adviser (Marine) at the International Marine Contractors Association (IMCA), who will deliver a presentation ‘Guidance on the changes in regulation and legislation impacting on DP’ said: “I will look at some of these changes and their impact on the sector, in particular on people and equipment. (…) Firstly there are the changes to the dynamic positioning operator (DPO) training, experience and certification with now two systems available and a third likely in the near future.”

**BIBLIOGRAPHY**

7. www.smasc.no (20.05.2013).

**PORÓWNANIE SCHEMATÓW SZKOŁEŃ NA OPERATORÓW DYNAMICZNEGO POZYCJONOWANIA W SEKTORZE OFFSHORE**

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