

Future Tug Master Training

Does the training of Tug Masters meet the requirements of the maritime industry?

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Tugs are extremely important for a port; ensuring not just efficient throughput, but also the safety of ships and port infrastructure – and of equal importance for shipping companies whose ships call at the ports. However, this is only true if capable purpose-built tugs are used, and tug masters and crew are well-trained and experienced. Given the importance of tugs to the smooth operation of the maritime sector, one would expect the training of Tug Masters to be internationally regulated and well organised. Unfortunately this is not the case. It is past time that this situation was changed.

It has become clear that professionalisation of Tug Master training is needed; resulting in a uniform system allowing users to add port and towing company specific training items as necessary. Requirements for trainers and assessors alike are needed, too.

The STCW convention and tug master training

In terms of training, tugs fall under STCW (Standards of Training, Certification and Watchkeeping) Convention Regulation II/3, Mandatory minimum requirements for certification of officers in charge of a navigational watch and of Masters on ships of less than 500 gross tonnage. This regulation sets out the requirements for officers in charge of a navigational watch and for Masters, differentiating between ships ‘engaged on near-coastal voyages’ and those ‘not engaged on near-coastal voyages’.

However, there are no STCW regulations covering the specific work carried out by tugs – that is ship towing assistance.

This raises two crucial questions:

- If STCW does not address the specific training needs of a Tug Master, how are Tug Masters trained for their specific tasks?
- Does the present training of Tug Masters in general meet the requirements of the industry?

Training today

Tug Masters and candidates are generally trained on the job, hands-on. This training is always an essential part of a Tug Master’s education. In addition, some large towing companies have their own training simulator and instructor.

Overall, there is a large variety in training systems. There is no uniformity in what subjects and competencies are covered, and no uniformity in how training is carried out, as there are no internationally standardised requirements for curriculum or training delivery. Nor are there any such requirements for instructors and/or examiners of Tug Masters.

A straw poll among some Tug Masters/instructors in the Netherlands, Australia and the UK does not give a very optimistic view of the situation. For instance, one Tug Master says:

‘The problem is shore based management not understanding the skillset required to safely and effectively operate an omni-directional Tug. Made worse by a common trait of a ‘can do’ attitude of many Tug Masters.’

And another:

‘From [the] company side, they require trainee Tug Masters to start ever faster with the job. Sometimes after one day they already ask ‘how it is going with the trainee?’. It looks like they just want a body on the bridge to do the job.’ The drivers behind this behaviour may be having insufficient Tug Masters available.

Some more comments:

‘Many companies use their own Training Masters, which is positive so long as the training system is non-subjective and has defined criteria and standards in place. Training Masters must also be assessed.’

‘There should be one clear, defined, and uniform route to becoming a Tug Master, regardless of which company you join.’

Following this discussion, a more comprehensive review was considered. A brief article was published on websites and in the e-newsletter ‘TugeZine’ asking for comments:

The role of a Tug Master undertaking harbour towage activities is a very specific one. He/she has to, alone or in cooperation with other Tug Masters, assist a ship in a safe and efficient way using his/her tug to the best of its qualities. Not only during a smart sunny day, but also during night, reduced visibility, rain, snow, ice, stormy weather, and strong currents. Due to the fact that he/she is operating in very close proximity to a ship that is manoeuvring and will be making headway and/or sternway, the work includes many risks.

Furthermore, Tug Masters should keep pace with the developments in and near a port, such as new harbour basins, new jetties, the increase in ship size and/or draft, the highest speed on ‘Dead Slow Ahead’ of ships, lifting of current and/or wind restrictions and decreasing safety margins often forced by economical pressure, operating outside the breakwaters, etc.

In addition, they should familiarise themselves with industry developments, which may include various new tug types that are coming on the market and the new properties, technologies and handling characteristics that accompany them, including large increases of tug power and bollard pull, new winch and rope technologies, changes in type of fuel, sensors to track tug performance, decision support systems, etc.

The question is whether the variety in present systems in use for the training and assessing Tug Masters are sufficient, robust and relevant? Are they fit for the purpose of producing fully capable and competent Tug Masters who are required to take command of the modern, powerful and ever more complicated tugs that handle the still growing size of ships safely in, around and out of ports?

For the safety of ports, tug crews, ships and tugs, should there not come one clear, defined and uniform training system with capable and assessed instructors, preferable under the supervision of IMO? All parties involved will benefit from it and costs might well reduce.’

TugeZine



Risky situation near bow, tug preparing to pass towline.
Photo: Kenneth Karsten, *Tug Use in Port*, 2021

The article received over a hundred responses, of which not one disagreed with the premise. Almost half of the respondents were Tug Masters, Tug Master Instructors, Pilots and Master Mariners; one third were persons in one way or another directly involved in towing activities, and about one quarter were variously interested stakeholders.

Interesting suggestions were received from France and Australia. While the summary of comments below reflects the situation in only a few of the maritime countries of the world, it is reasonable to assume that the situation elsewhere will be similar. Overall opinions were:

- The development of a standard competency certificate will surely reduce the risk of having an unqualified crew.
- Towing companies must be able to set up a complete training program, which includes hiring a designated instructor, rather than employing the current Tug Master as sole trainer, as the Tug Master has to fully concentrate on the everyday tasks at hand.
- Dedicated Training Masters that can mentor a trainee through the majority, if not all of their training, would be welcomed too.
- Training must also include education, which includes learning from accidents, both those in the trainee's own company and others worldwide.
- A screening process in which new starters are tested on a simulator before commencing on water/on the job training would be welcome.
- Having a trainee jump between training with numerous Tug Masters who have not been 'trained to train' is a recipe for disaster.



If ship uses the propeller, the tug will be in a dangerous position.
Optimum pilot – tug master communication needed.
Photo: Kees Torn, *Tug Use in Port*

All of these conclusions point in the same direction as the comments from the earlier survey. A structural improvement of the present situation is called for, while recognising that some companies already have suitable and specific training programs in place to one extent or another.

Existing regulations in UK and USA

These observations are nothing new. If we look at the training regimes currently in place in the UK and the USA, it can be assumed that the same problems have already been identified and that some effort has been made to tackle them. Both countries have schemes that focus on the specific work of a Tug Master in addition to the STCW requirements, with the caveat that participation in the UK scheme remains voluntary.

In the UK, a Voluntary Towing Endorsement (VTE) scheme was developed at the request of the UK Towing and Workboat industry, to help ensure that Masters engaged in towing operations have the necessary skills for such specialist activities. The VTEs are intended to be used in conjunction with an appropriate Certificate of Competence.

Three towing endorsements have been developed:

- a. 'General Towing' for towing and pushing in categorised waters or in limited coastal areas.
- b. 'Ship Assist Towing' for assisting with the berthing and un-berthing of vessels.
- c. 'Sea Towing' for towing of vessels or floating objects at sea.

In the MGM 468 (M) circular, the competence standards for all three endorsements are listed in detail. Persons applying for a towing endorsement must complete the training record book and show proof of relevant experience of towing tasks.

Assessment and endorsement are carried out by MCA (Maritime and Coast Guard Agency) Recognised Bodies. Assessors are expected to have a minimum of five years relevant experience in towing operations and the relevant assessment experience.

The Voluntary Towing Endorsement scheme does not replace or supersede the BTA (British Tugowners Association) and tug industry partners sponsored training or tug training route currently available through the MCA, leading to the issue of a specific Certificate of Competence under STCW.

Two important points to bear in mind about the British Voluntary Towing Endorsement; those are:

- 1) As the name indicates, it is not compulsory, and
- 2) it is not, by regulation, internationally applicable.

The USA has a more or less similar system, the 'Towing Officer Assessment Record' (TOAR), regulated by the Coast Guard in the Navigation and Vessel Inspection Circular (NVIC) 03-16. This document describes the policy for Merchant Mariners to qualify for and renew endorsements to Merchant Navy Certificates for service on Towing Vessels.

The Code of Federal Regulations (CFR) states in 46 CFR § 10.404 that 'each applicant for an endorsement as Master or Mate (Pilot) of Towing Vessels, and each Master or Mate of Self-propelled Vessels of 200 GRT or more, seeking an endorsement for Towing Vessels, must complete a TOAR approved by the Coast Guard.'

The NVIC includes among other things guidance on endorsements, which may be:

- restricted to near coast and oceans.
- restricted to local limited areas.
- restricted to harbour-assist vessels.

46 CFR § 10.405 specifies that 'to become a qualified Assessor or designated Examiner an applicant must have documentary evidence to establish experience, training, or instruction on assessment techniques. Required is furthermore a level of qualification equal or superior to the relevant level of knowledge, skills, and abilities described in the training objectives.'

Other effects

While national training standards are to be welcomed, we should also ask whether the specialised work of a Tug Master should be included in the STCW regulations – adding yet another specialism to the list.

The Tug Master's job is towage; getting vessels in and out of ports or offshore terminals, towing offshore constructions and floating assets, whether manned or unmanned, etc. This is a full time job. There is no supervision, no one who can correct the Master if things are going wrong, although sometimes a Pilot may be able to offer advice. Furthermore, it is a job full of risks – the book *Tug Stability* recounts that in a five year period (2010-2015) more than 45 people drowned due to capsizing of tugs. Furthermore, as ships increase in size, often resulting in smaller safety margins in ports and port approaches, tugs are becoming increasingly powerful in order to handle such vessels. They are also becoming more complicated.

Reasons enough to include a professional, uniform training system for Tug Masters in the STCW Convention.

A uniform training system also creates the possibility for trained Tug Masters to more easily move between towing companies and tug types – provided that the uniform training system has sufficient flexibility to include local and type-specific training requirements.

Development of a uniform training scheme needs the input of the towage industry. Their specific knowledge and experience is paramount if such a system is to become broadly accepted.

A uniform system may cover a much wider curriculum than Tug Master training generally does at present, including safety aspects, safe procedures, stability, lessons learned from accidents, emergency, maintenance, towline and winch characteristics, use of remote sensors, collision avoidance systems, etc.

Some extra costs may be involved to ensure a more appropriate and professional training system. Training of Tug Masters may take more time. Instructors and Assessors/Examiners will need to be trained and qualified, and training schemes and providers may need to be verified and audited. On the other hand, towage companies will not need to maintain their own in-house training systems, except for more local and tug-specific training.

Seeking a worldwide solution

The systems currently in place in the UK and USA answer many of the concerns raised in the original survey – although we should note that participation in the scheme is not as yet a compulsory requirement. Both countries have made large steps in such a way that they have largely compensated for the shortcomings of the STCW with respect to Tug Master specific training.

However, these measures apply to the USA and UK only. Further steps are needed to develop a uniform worldwide professional training system by amending the STCW convention to include requirements for the specific job-related training of Tug Masters to ensure safer tug and shiphandling in ports, port approaches and offshore terminals. This should also include requirements for trainers, assessors, and certificates of competence.

Hopefully this will minimise the number of fatal towage accidents that continue to take place around the world; the most recent in Greece and in India, with the combined loss of three crew members. 🌐

