



Insight Article

Emergency towing arrangements for tankers

SOLAS 1974 Chapter V, regulation 15-1 requires all tankers of 20,000 tonnes deadweight and above, including oil, chemical and gas tankers, to be provided with an emergency towing arrangement at both ends of the ship. This requirement has been in force since 1st January 1996 for new vessels built after that date. For existing vessels, the deadline was set at their first scheduled docking after 1st January 1996, but not later than 1st January 1999. By the end of this year, all tankers above 20,000 tonnes deadweight must therefore have such arrangement in place.

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The requirement for towing facilities on board ships is nothing new. Sailors may remember that they used to store and grease a thick wire on a drum within the forecabin, the so-called "insurance cable" or "towing cable". The historical background to this cable is long forgotten; it probably dates back to the days of sailing vessels and steamers, a time when salvage vessels were few, and such a cable could prove its worth to both underwriters and owners. A "towline" was introduced in 1912 in Det norske Veritas' (DnV) rules for both sailing vessels and steamers. With vessels growing in size, so did the dimensions of the towing cable, and in the 1960's the steel wire was so thick and heavy that all sailors knew pretty well that they would hardly be able to move it out of the forecabin in case of need. There was no requirement for a strong point or how to fit the towing cable to the vessel, a fact that did not add to a seaman's conception of its usefulness. Class societies gradually relaxed the requirement for towing cables, and they eventually disappeared from larger vessels. In 1982 IACS 1 introduced a guidance note on mooring ropes and towing cables, with recommendations on strength, construction and size, but left its application to the member Class Societies. From 1994 DnV's rules concerning towings cables operated as a guidance only, and are only applicable to smaller vessels with a low equipment number.

While the "insurance cable" of the old days became obsolete, oil tanker accidents showed that there was a need for a permanently rigged and easy to handle hook-up arrangement to be installed on board the larger vessels. To fasten a towline to a disabled and abandoned vessel in bad weather has always been a very difficult and dangerous operation. On board a powerless vessel the vessel's own winches are of no use, and there may not be much time available before the vessel drifts ashore. When the fully loaded oil tanker "BRAER" foundered off the coast of Shetland in 1993, the process of drafting regulations for an emergency towing arrangement for tankers was accelerated and draft regulations were presented by IMO's Maritime Safety Committee in May 1994. Such arrangements had already been designed in the mid 1980's, and had been installed on board North Sea shuttle tankers in the Statfjord field, as a remedy to pull them away from the loading point in an emergency.

The IMO's guidelines MSC 35 (63), adopted on 20th May 1994, require an emergency towing arrangement to be fitted to the forward and aft end of the tanker. The aft arrangement must be possible to rig in 15 minutes under harbour conditions, while the forward one has a permitted deployment time of 60 minutes. The arrangements need to be kept simple, as the equipment may have to be employed in bad weather and in complete darkness if the vessel is powerless.

The emergency towing arrangement at the aft end of the vessel must consist of pick-up gear, a towing pennant, chafing gear, a fairlead, a strong point and a roller pedestal. There are strength requirements for most parts. Furthermore, it is a particular requirement for the aft arrangement that the pick-up gear can be released manually by one man only. At the forward end, the pick-up gear and the towing pennant are made optional, but there is to be a strong point, a fairlead and a chafing chain.

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The towing components need to have a working strength of at least 1,000 kN for tankers between 20,000 and 50,000 tonnes deadweight, and of at least 2,000 kN for vessels of greater tonnage. Working strength is defined as one half ultimate strength. The strength should be sufficient for all relevant angles of the towline, including a 90° pull to either side, and a 30° vertical pull downwards. Such requirements make it necessary not only to strengthen the vessel's hull at the strong point for the towing attachment, but also at the fairlead point. The towing pennant is required to have a length of at least twice the lightest seagoing ballast freeboard at the fairlead, plus 50 metres. The requirements for the chafing gear allow for different designs, but if a chain is used, it should be fixed to the strong point and reach at least three meters beyond the fairlead.

Before abandoning vessel, the crew is expected to drop the pick-up gear overboard at the stern of the vessel. Some manufacturers use only one buoy on the pick-up rope, others use two, claiming that it is much easier to get hold of a rope between two buoys, than the buoy itself. The buoys should be fitted with a light to facilitate detection at night. While the forward gear is installed in the vessel's centreline, the aft gear is often installed off centre, where space is available. The gear is therefore not meant for long tows, only emergency use. Some owners have preferred to install the gear under deck, where it is better protected.

1. International Association of Classification Societies.

2. kN = kilo Newtons.

Today emergency towing arrangements are in place on tankers above 20,000 tonnes deadweight, and it is believed that the equipment will prove its worth in years to come. Opinions have also been voiced in favour of fitting such gear to other large vessels, like bulk carriers and cruise vessels. The installations are relatively inexpensive to fit on new vessels, and represent an added safety and loss preventive factor for all large vessels.

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