

Translation. Only the Danish document has legal validity.

Order no. 828 of 1 September 2000 issued by the Danish Maritime Authority

Order on the safe performance of diving operations

In pursuance of section 13, section 14(2), section 20 and section 24(6) in the Act on Diving Operations and Diving Equipment, etc., cf. consolidated Act no. 18 of 7 January 2000, section 3 and section 32(4) of the Act on Safety at Sea, cf. consolidated Act no. 554 of 21 June 2000, and by authority of the Minister of Economic and Business Affairs, the following provisions are laid down:

Application

Section 1. This Order shall, apart from offshore diving operations, apply to diving operations when performed on the Danish territory and continental shelf or from Danish ships and at diving depths of up to 50 metres.

Subsection 2. This Order shall not apply to crew members on a foreign ship carrying out diving operations on the ship in question and to persons under the Defence Command Denmark carrying out diving operations as part of their work.

Subsection 3. In connection with diving operations from Danish ships abroad, foreign divers not holding a professional diver's certificate may be used when they do not belong to the ship's crew.

Definitions

Section 2. For the purposes of this Order, the following definitions shall apply:

- 1) *Work record:* An overview where all relevant information about a specific diving operation is recorded.
- 2) *Treatment chamber:* A suitably equipped pressure chamber intended for planned surface decompression and for treating diver's palsy.
- 3) *Decompression chamber:* A suitably equipped pressure chamber located at the place of diving intended for planned surface decompression.
- 4) *Diving operation:* A task carried out under water for which the use of breathing devices is required and which is normally carried out against a remuneration. The performance of special diving operations, such as rescue operations or the like, including operations solved by municipal rescue services, shall be considered diving operations, regardless whether the work is carried out without any remuneration. Diving operations include all kinds of preparation at the place of diving from before the first diver enters the water until the last diver has left the water, chamber or any other environment and is no longer surrounded by a pressure greater than the atmospheric pressure. Diving operations shall not include operations carried out in connection with recreational diving.
- 5) *Diving doctor:* Doctor appointed by the Danish Maritime Authority to carry out medical examinations of divers.
- 6) *Diving equipment:* All equipment, including auxiliary equipment, used in connection with diving operations.
- 7) *Place of diving:* The platform, quay, ship, etc. from where diving operations take place.

- 8) *Diving training programme*: Diving training programme in accordance with the Order on the diving training programme.
- 9) *Diving equipment*: A composition of diving equipment making it possible to keep breathing during stays in water 0.4 metre or more below the surface.
- 10) *Basket*: Transport platform without any air pocket.
- 11) *Log*: An overview where all relevant information about the diving operations of each individual diver is recorded.
- 12) *Offshore diving operations*: Diving operations at fixed or mobile units used in connection with the exploration and recovery of hydrocarbons in the subsoil, at pipe lines or between such units as well as diving operations where it is, due to the nature, extent and safety and health aspects of the diving operation, is necessary to make similar stricter requirements.
- 13) *Surface-supplied diver*: Diver who, wearing diving equipment, is provided with a breathing gas from the surface through one or more tubes (umbilical).
- 14) *Recreational diving*: Diving for the sake of sport and pleasure as well as teaching in this connection.
- 15) *Open bell*: Bell with an air pocket where it is not possible to establish a greater pressure in the air pocket than that of the surrounding water.

Exemptions

Section 3. The Danish Maritime Authority may grant exemptions from the provisions of sections 4-26 when special work methods are used, including the use of alternative standards, the use of special diving equipment or diving systems, as well as when other special circumstances apply that the Danish Maritime Authority is satisfied will result in as safe a performance of the diving operations as otherwise.

Performance of the work

Section 4. All aspects of diving operations shall be planned and carried out properly in terms of health and safety.

Section 5. Diving operations shall be arranged so that the safety and health of the diver and any other diving and assisting personnel is ensured as well as possible in consideration of the nature, extent and place of diving, etc. of the diving operation.

Subsection 2. The diver shall ensure that the diving equipment is in order before being taken in use.

Subsection 3. The diver or the diving manager, if one has been appointed, shall instruct ancillary staff about their duties in connection with diving operations.

Subsection 4. The diver shall have the necessary time for rest and sleep. In connection with diving operations from a ship, the provisions of the Danish Seamen's Act on hours of rest shall apply. Otherwise, the provisions of the Danish Health and Safety at Work Act shall apply.

Subsection 5. A diver may not be ordered to dive if he feels unwell, unsafe or in any other way less suited for this.

Subsection 6. In case the holder of a diver's certificate has been incapacitated for one of the reasons below, he may not start diving again before a diving doctor's declaration of capacity for work has been presented to the employee:

- 1) Incapacity due to illness or injury for more than 20 days.
- 2) Hospitalization or sending to a clinic.
- 3) Pregnancy.
- 4) Any disease or condition involving the use of optical or mechanical means.
- 5) Any disease or condition involving regular or recurring medicinal treatment.
- 6) If any other doubt arises, during the health-related approval period, whether the diver meets the health requirements.

Subsection 7. In connection with any pressure-setting, the diver shall keep a log approved by the Danish Maritime Authority. Any entry about a dive or a pressure-setting shall be signed by the diver and by the diving manager. If there is no diving manager, the log shall be signed by the employee or by the master if the diver is employed by the shipping company.

Subsection 8. In connection with diving operations, a work record approved by the Danish Maritime Authority shall be kept. Filled logs and work records shall be kept by the diver and the employee, respectively, for a period of at least 5 years after the last entry. If an action has been brought before the court concerning the performance of diving operations in the period covered by the log or the work record, they shall be kept until the action has been finally settled.

Subsection 9. At least every 24 months, the diver shall complete a first aid refresher course approved by the Danish Maritime Authority.

Section 6. A diving manager shall be appointed if three or more divers carry out diving operations.

Subsection 2. The diving manager shall have passed the required tests and courses that entitle him to carry out diving operations with the equipment used for the operation in question. In addition, the diving manager shall be able to prove that he has at least 2 years' practical experience as a professional diver as well as experience with the relevant diving operation.

Subsection 3. The diving manager may not take part in dives when performing his duties as a diving manager or perform tasks irrelevant to the dive. Furthermore, the diving manager may not have been exposed to over-pressure within the past 12 hours.

Subsection 4. The diving manager shall see to the arrangement, carrying out, distribution and management of the work related to the diving operation in question and ensure that it is possible to carry out the diving operation properly in terms of health and safety. The diving manager shall see to it that all diving and auxiliary equipment used is in good condition in terms of health and safety and meet the provisions in force.

Subsection 5. If there is 1 or 2 divers and, consequently, no diving manager has been appointed, cf. subsection 1, it shall be the responsibility of the diver to ensure that the necessary auxiliary equipment, equipment and tools, etc. are in good condition and meet the provisions in force.

Section 7. The employee shall, in consultation with the diver or the diving manager if one has been appointed, appoint a diver's assistant. In case of diving from a ship, the diver's assistant shall be appointed in consultation with the master if the diver is employed by the shipping company.

Subsection 2. The diver's assistant shall be able to document the necessary knowledge of the work, either by holding a diver's certificate issued by the Danish Maritime Authority or by having completed a course for diver's assistants approved by the Danish Maritime Authority.

Subsection 3. At least every 24 months, the diver's assistant shall complete a first aid refresher course approved by the Danish Maritime Authority in order to function as a diver's assistant.

Subsection 4. During diving operations, the diver's assistant may not serve more than one diver or attend to other tasks of no concern to the safety of the diver.

Subsection 5. During diving operations, a diving team shall be adjusted to each individual operation, but shall however consist of at least one diver and one diver's assistant as well as one additional person who shall, at any time, be able to assist the diver and the diver's assistant.

Subsection 6. The diving team shall be able to communicate in a language that is understood by the entire team.

Section 8. In connection with diving operations where decompression or treatment chambers are involved, a person who does not dive having completed a diving training programme or any other relevant training programme approved by the Danish Maritime Authority shall be present at the place of diving. The person shall be familiar with the operation of chambers and the use of diving, decompression and treatment tables and may not have been exposed to over-pressure within the past 12 hours.

Section 9. A risk and workplace assessment shall be made for each individual task. In case of especially risky tasks, this assessment shall be made in writing.

Subsection 2. In connection with diving operations under especially difficult or risky conditions, an extra diver as well as an extra diver's assistant shall be ready for immediate rescue or equally suitable safety measures shall be taken that shall be approved by the relevant diver. Difficult circumstances may, for example, be diving in covered canals, pipes, wreckages that are not very accessible or the like.

Section 10. Persons who are employed in connection with diving operations shall have been carefully instructed by the diving manager or, when one has not been appointed, by the diver about their duties and about conditions that may be of importance to the diver's safety.

Section 11. The employer shall report industrial accidents and cases of poisoning in connection with diving operations to the Danish Maritime Authority. However, when diving operations are carried out from a ship, the reporting shall be made by the master. Reporting shall be made if the accident or the poisoning has caused incapacity for one or more days in addition to the day of the accident.

Subsection 2. Furthermore, the Danish Maritime Authority shall be informed in case of:

- 1) all treatments in pressure tanks related to diving operations;
- 2) accidents that may have caused considerable personal injury;
- 3) fire;
- 4) environmental damage or damage to property; or
- 5) damage to the property of a third party.

Subsection 3. If a diving accident causing personal injury occurs, the remaining part of the breathing gas shall be cut off at the source and in the distribution system as soon as possible for the sake of later investigations. Breathing gas equipment may, insofar as possible, not be operated or

adjusted just as any other equipment used during the diving operation may not be removed until the Danish Maritime Authority has carried out a control survey.

Section 12. Diving operations may be carried out only by persons holding a valid certificate as a surface-supplied professional diver.

Subsection 2. Diving operations for which mixed gas is used as well as diving operations at depth of more than 50 metres may be carried out only by professional divers who have passed a test in diving operations using mixed gas.

Section 13. Notwithstanding the provisions of section 12, persons holding a valid certificate as a scuba diver may carry out diving operations at depths of up to 25 metres with equipment that is not surface-supplied and using atmospheric air as breathing gas. Such work is, however, limited to lighter diving operations,

- 1) arranged in a proper way in terms of health and safety;
- 2) not requiring the use of anything besides hand tools; and
- 3) where no planned decompression is being made in connection with the diving operation.

Section 14. Diving operations including cutting, welding, high-pressure washing (30 bare or more) or blasting may be carried out only by persons holding a valid certificate as a surface-supplied professional diver after having completed a course in such work.

Subsection 2. Professional diving operations may be carried out only by persons holding a certificate as a scuba diver or a surface-supplied professional diver, respectively, after these persons have completed a course in such work.

Subsection 3. The courses mentioned in subsections 1 and 2 shall have been approved by the Danish Maritime Authority. The diver's certificate shall have been endorsed to this effect by the Danish Maritime Authority or the one authorised by the Danish Maritime Authority to do so.

Subsection 4. Anyone using divers for work as mentioned under subsections 1 and 2 shall ensure that the divers hold a diver's certificate with the endorsement required under subsection 3.

General

Section 15. Over or in the area where diving operations are being carried out, work that may impair the safety of the divers may not be carried out.

Subsection 2. Before initiating spark-producing or penetrating work, it shall be ensured that no corrosive and/or explosive material in solid, liquid or gaseous form is confined in the object on which work is to be carried out.

Subsection 2. Before initiating work during which auxiliary equipment, special tools or explosives are used, the diver shall study the working instructions provided by the manufacturer carefully.

Subsection 4. When working with cutting, welding or high-pressure washing or tools requiring energy supply from the surface, sufficient crew for operating the energy supply shall be available, in addition to a diver's assistant. The energy supply shall remain constantly manned during the work. If the diver's assistant cannot have direct contact with the one operating the energy supply, another direct means of communication shall be established between them.

Harmful substances

Section 16. During diving operations at discharge pipes and other places where harmful substances may be present in hazardous concentrations, the following measures shall have been taken:

- 1) Prior to the diving, the nature and extent of the pollution shall be examined, including any risk of explosion. Divers as well as assisting personnel shall be informed of this. Measures shall be taken so that persons who are taken ill or injured may be medically examined without any undue delay.
- 2) The diver shall be protected against skin contact with the surrounding by wearing a dry suit with either a helmet or a full-face mask as well as tightly fitting gloves.
- 3) At the workplace, clean water shall be available for washing off the diver and the equipment before taking off the diving equipment.
- 4) An eye rinsing bottle shall be available ready for use.

Material, equipment and tools, etc.

Section 17. The place of diving shall be marked with shapes, etc. in accordance with the International Regulations for Preventing Collisions in force as well as the provisions stipulated in Orders on special regulations on navigation in certain Danish waters.

Subsection 2. Safe means of communication shall be available between the ships, vessels, etc. taking part in the diving operation. If conditions so necessitate, a chase boat or vessels with means of communicating with other passing ships and vessels shall, furthermore, be present.

Section 18. Equipment of such nature and design that the diver may easily and safely get into and out of the water shall be available.

Subsection 2. If the launching arrangement is located more than 5 metres above the surface of the water, the diver shall use a basket or an open bell during the launching.

Section 19. During work on stages, during stays on diving ladders, during hauling as well as transportation on diving platforms or the like, the diver shall be secured against falling.

Subsection 2. When diving with scuba diving equipment, the diver may omit wearing an immersion suit suitable for diving if it is assessed, in accordance with the risk assessment stipulated in section 9(1), that it would involve a greater risk wearing an immersion suit than omitting this. The assessment shall be entered in the work record or be annexed to this.

Section 20. During diving operations, the diver shall be in contact with the diver's assistant or and/or the diving manager by means of a telephone connection and lifeline.

Subsection 2. During diving operations where the use of a lifeline involves an increased risk, the connection may, in exceptional cases, be omitted if it is assessed, in accordance with the risk assessment stipulated in section 9(1), that it would involve a greater risk using a lifeline than omitting this. Instead other, equally suitable safety measures shall be taken. The assessment shall be entered in the work record or be annexed to this.

Section 21. The diver or the diving manager, if appointed, shall ensure that propellers and the like on ships and vessels used in connection with diving operations or on the place of diving are not

started during diving operations unless shielded and unless such measure have been taken that the diver, lifeline, etc. may not be injured. The diver shall be informed before the propeller is started.

Section 22. During diving operations, auxiliary equipment and other equipment shall be suitably and solidly located or fixed.

Subsection 2. Tools and apparatuses brought along and used during diving operations shall be arranged, designed and shielded so that diving equipment and material are not damaged.

Subsection 3. Mechanically driven tools and apparatuses shall be arranged so that it is not possible to start them inadvertently and so that they stop automatically when released by the diver. If such tools and apparatuses are power-supplied from the surface, it shall be easy for the personnel designated for this to shut off the power supply, cf. section 15(4).

Subsection 4. When using noisy tools, pneumatic tools, high-pressure pistols and the like, suitable hearing protectors shall be available for the diver.

Section 23. A decompression or treatment chamber intended for the number of persons to be decompressed simultaneously shall be available at the place of diving when the conditions stipulated in section 5(1) so necessitates or in the circumstances mentioned in subsections 2 and 3 of this section.

Subsection 2. During diving operations, a decompression chamber shall be available at the place of diving if:

- 1) the dive, in accordance with approved tables, requires decompression of longer duration than 20 minutes; or
- 2) dives are being made to depths above 25 metres.

Subsection 3. A treatment chamber shall be available at the place of diving if:

- 1) the dive, in accordance with approved tables, requires decompression of longer duration than 60 minutes; or
- 2) dives are being made to depths above 40 metres.

Subsection 4. In connection with major works, the Danish Maritime Authority may, irrespective of the provisions of subsections 2 and 3, require the availability of a treatment chamber at the place of diving.

Subsection 5. Persons being decompressed shall be surveyed and persons being treatment in a chamber shall be followed by an assistant in the chamber. The lock shall be blown-off to atmospheric pressure when only one person is present in the chamber.

Section 24. At all places of diving, first-aid and resuscitation equipment and diving, decompression and treatment tables shall be available approved by the Danish Maritime Authority.

Subsection 2. A safety helmet for use ashore and in the water shall be available if the conditions so necessitate.

The purity, composition, quantity, declaration, etc. of breathing gas

Section 25. As regards purity, composition, quantity, declaration, etc., breathing gases shall comply with the provisions of the Order on diving equipment.

Subsection 2. If atmospheric air is used as a breathing gas during diving operations, the source of the breathing gas at the start of the dive shall contain sufficient breathing gas in consideration of the duration and depth of the dive.

Subsection 3. Source of breathing gas not carried by the diver shall, irrespective of the composition of the breathing gas during the dive, at any time contain sufficient spare breathing gas for 5 minutes' stay at the diving depth unless it is possible to provide the diver with a similar quantity of breathing gas from a separate spare source. This shall have been connected and ready for use before the dive is initiated.

Subsection 4. Irrespective of the composition of the breathing gas, divers being provided with breathing gas through a pipe from the surface, from an open diving bell or the like shall, furthermore, carry an emergency quantity of breathing gas making it possible for the diver to stay at the maximum diving depth for 5 minutes.

Subsection 5. The quantities of spare and emergency breathing gas mentioned under subsections 3 and 4 of this section shall be calculated at a breathing gas consumption corresponding to 40 l/minute at the relevant depth.

The obligations of the employer, master and shipowner

Section 26. The employer shall ensure that diving operations are carried out in accordance with the provisions of this Order. When diving from ships, this obligation also applies to the master and the shipowner, cf. sections 9 and 10 of the Act on Safety at Sea.

Penalty and entry into force

Section 27. Unless a more severe punishment is applicable pursuant to other legislation, anyone contravening sections 4-26 shall be liable to punishment by fine, simple detention or imprisonment for a term not exceeding 1 year.

Subsection 2. The penalty may be increased to simple detention or imprisonment for a term not exceeding 2 years if the contravention has been committed deliberately or grossly negligently.

Subsection 3. When deciding on the sentence under subsections 1 and 2, it shall be considered especially aggravating circumstances that:

- 1) the violation has resulted in damage to life or health, or risk of such damage,
- 2) an injunction or order has previously been issued in connection with the same or equivalent situations under section 18, or
- 3) the violation has given or has been intended to give financial benefits to the transgressor or others.

Subsection 4. It shall be considered especially aggravating circumstances if the violation has resulted in damage to the life or health of young persons below the age of 18, or risk of such damage, cf. subsection 3, item 1.

Subsection 5. If financial benefit has been achieved or intended, this shall be confiscated in accordance with the provisions of chapter 9 of the Penal Code. If it is not possible to confiscate the financial benefit, special consideration shall be paid to this when determining the fine, including any supplementary fine.

Subsection 6. Companies etc. (legal personalities) may be liable to punishment according to the provisions of Chapter 5 of the Penal Code.

Section 28. This Order shall enter into force on 15 September 2000.

Subsection 2. Order no. 478 of 17 June 1999 on the safe performance of diving operations shall be repealed.

Subsection 3. Course certificates concerning cutting and welding, pressure washing as well as blasting issued pursuant to sections 12-14 of Order no. 30 of 15 January 1988 on safety during professional diving operations and on the safe performance of professional diving operations shall remain valid for the time being.

Danish Maritime Authority, 1 September 2000

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