

Regulations of 10 April 1984 No. 940 on the control of diving systems, etc. on Norwegian ships

Legal basis: Laid down by the Norwegian Maritime Authority on 10 April 1984 under the Act of 9 June 1903 relating to Public Control of the Seaworthiness of Ships, etc. Legal basis amended to Act of 16 February 2007 No. 9 relating to ship safety and security (Ship Safety and Security Act) sections 2, 9, 11, 13, 43, 45 and 47, cf. Formal Delegation of 16 February 2007 No. 171 and Formal Delegation of 31 May 2007 No. 590 and Act of 26 June 1998 No. 47 relating to Recreational and Small Craft sections 23 and 25, cf. Formal Delegation of 27 November 1998 No. 1095, Formal Delegation of 1 December 1998 No. 4532 and Formal Delegation of 31 May 2007 No. 591.

EEA references: EEA Agreement, Annex II, Chapter XIX point 1 (Directive 98/34/EC).

Amendments: Amended by Regulations of 11 October 1996 No. 978, 11 April 2003 No. 491 (including title, these Regulations being repealed for mobile offshore units from 1 July 2003), 4 February 2005 No. 101, 29 June 2007 No. 1006 (i.a. legal basis).

Chapter I General

Section 1 *Definitions*

1. “*Diving system*”: The plant and equipment necessary for performing diving operations in which a diving bell is used to transport divers under pressure between the work location and a surface compression chamber.
2. “*New diving system*”: Diving system the construction of which was started after the entry into force of these Regulations.
3. “*Existing diving system*”: Diving system which is not new.
4. “*Permanent diving system*”: Diving system which is to be installed on an installation for more than 12 months.
5. “*Temporary diving system*”: Diving system which is not permanent.

Amended by Regulation of 11 April 2003 No. 491 (in force on 1 July 2003).

Section 2 *Application*

1. These Regulations shall apply to diving systems, etc. located on board ships which are or will be entered in a Norwegian ship register.
2. To the extent deemed reasonable, the Regulations shall also apply to equipment used for diving without the use of a diving bell and for one-man and two-man submersibles with necessary auxiliary equipment.
3. The Norwegian Maritime Authority may also make the Regulations applicable to other equipment for use in diving operations where this is deemed reasonable and practicable.

Amended by Regulation of 11 April 2003 No. 491 (in force on 1 July 2003).

Section 3 *Approval and equipment*

1. The diving system is subject to approval and control in accordance with these Regulations.
2. Approval and control shall be carried out as follows:
 - 2.1. Diving systems certified by a recognized survey institution in accordance with approved regulations with respect to matters referred to in section 7, section 9, section 10 (1), (3) and (4) and section 12 (7) and (8), shall be considered to have been inspected and approved.
 - 2.2. Temporary diving systems approved by the authorities of foreign countries in accordance with the IMO’s “Code of Safety for Diving Systems”, Chapter 2, may be considered by the Norwegian Maritime Authority to be inspected and approved with respect to matters covered by the Code.
 - 2.3. The Norwegian Maritime Authority or whosoever it authorizes shall carry out surveys, approvals and inspections of uncertified diving systems and shall issue the necessary recommendations with respect to matters referred to in section 7, section 9, section 10 (1), (3) and (4) and section 12 (7) and (8).
 - 2.4. The rules of surveys, inspections and approvals contained in subsections 2.1. and 2.3 shall also apply to equipment referred to in section 2 (2).
 - 2.5. The Norwegian Maritime Authority shall carry out surveys, approvals and inspections with regard to other matters concerning the diving system covered by the Trading Certificate for ships, as well as matters mentioned in section 10 (2), section 11 and section 12 (1) to (6).

Amended by Regulation of 11 April 2003 No. 491 (in force on 1 July 2003).

Section 4

Notification of diving system. Drawings/documentation

1. Before a diving system is installed on board or undergoes substantial repairs or alterations, the company shall, in good time, and if possible at least one month before the work is started, send a notification to the Norwegian Maritime Authority.
2. Before a temporary diving system as referred to in section 3 (2.2) is put into use, the owner shall submit a copy of the IMO Diving Systems Safety Certificate for the system together with information as to which standard has been used when approving the system, cf. paragraph 2.1.4 of the Code, to the Norwegian Maritime Authority.
3. For uncertified diving systems the following documentation shall be submitted at the same time as the notification referred to in subsection 1:
 - 3.1. to the Norwegian Maritime Authority or whoever it authorizes:
 - 3.1.1. One copy of the general arrangement drawings to show the diving system and its location on the ship. The drawings shall form the basis of, among other things, an evaluation of whether the requirements of section 10 (1), (3) and (4) have been complied with.
 - 3.1.2. A short description of the diving system.
 - 3.1.3. Documentation to show that section 7, section 9 and section 12 (7) and (8) are complied with.
 - 3.2. to the Norwegian Maritime Authority:
 - 3.2.1. One copy of the general arrangement drawings to show the diving system and its location on the ship. The drawing shall, among other things, form the basis of an evaluation of whether the requirements of section 10 (2) have been complied with.
 - 3.2.2. Three copies of the arrangement drawings for hyperbaric evacuation. The drawings shall show in particular whether the requirements of section 12 (1) to (6) have been complied with.
 - 3.2.3. Drawings of the hyperbaric lifeboat as well as limitations of and drawings of the launching arrangement of the hyperbaric lifeboat.
 - 3.2.4. Any documentation to show that the requirement of section 11 has been complied with.
 - 3.2.5. One copy of the standard operating manual of the diving system.
4. Further documentation may be required to be submitted.

Amended by Regulation of 11 April 2003 No. 491 (in force on 1 July 2003).

Section 5

Surveys

1. The diving system shall be surveyed before being taken into use. The survey shall include a thorough inspection of the diving system with associated components and equipment, etc.
2. The diving system shall be subject to an annual survey to ensure that the diving system with associated components and equipment is kept in proper condition. The time of the performed survey shall be stated in the Declaration of Approval or Certificate.
3. The diving system shall be subject to a periodic survey at least every five years for renewal of the Declaration of Approval or Certificate. The survey shall include a thorough inspection of the diving system with associated components and equipment.

Section 6

Certification

1. A diving system fully complying with the requirements of these Regulations shall be provided with an IMO Diving Systems Safety Certificate.
2. When equipment as referred to in section 2 (2) and (3) has been approved and inspected in accordance with these Regulations, the Norwegian Maritime Authority shall issue a Declaration of Approval for the equipment.
3. Where equipment has undergone modifications in accordance with section 9 or an exemption has been granted under section 14, the equipment being approved and inspected in accordance with these Regulations, the Norwegian Maritime Authority shall issue a Declaration of Approval for the equipment.
4. The validity of the Certificate or Declaration of Approval may be extended for a period of up to five months.
5. The Certificate or Declaration of Approval shall cease to be valid if the diving system undergoes substantial modification without the approval of the Norwegian Maritime Authority or whoever it authorizes.
6. Temporary diving systems will be approved for the period in question in the individual case.

Chapter II Requirements for diving systems

Section 7

Design and construction

Diving systems shall be designed and constructed to a standard which satisfies the IMO's "Code of Safety for Diving Systems",¹ Chapter 2, Design and Construction.

¹Resolution A 536 (13).

Section 8

Operating manual/instructions

There shall be a standard operating manual/instructions based on generally accepted practice, on board every Norwegian vessel from which commercial diving is performed. The manual shall describe all activities/procedures which are necessary for the operation and maintenance of the diving system with appurtenant installations in accordance with these Regulations.

Amended by Regulation of 11 October 1996 No. 978 (in force on 1 July 1997).

Section 9

Modifications

Existing diving systems which undergo alterations or modifications of an extensive nature shall satisfy the requirements for a new diving system to the extent reasonable and practicable.

Chapter III

Location of diving systems. Emergency power

Section 10

Special provisions on diving system location

1. Diving systems with associated gas cylinders shall not be installed in engine rooms.
2. Where the diving system is located on an open deck, the system shall be satisfactorily protected from the sea, ice, and damage which might arise from other activities on board.
3. The diving system with associated equipment shall be securely fastened to the structure of the ship. Proper regard must be paid to the relative movements of the components. Diving system fastenings shall withstand stresses resulting from the maximum heel and trim as defined for the damage stability condition.
4. Oxygen cylinders shall be installed in well-ventilated rooms, or on the open deck. Oxygen cylinders shall not be located near combustibles.

Amended by Regulation of 11 April 2003 No. 491 (in force on 1 July 2003).

Section 11

Emergency power

If the ordinary emergency power source of the ship also supplies the power for the diving system, the emergency power source shall be dimensioned for this extra load.

Amended by Regulation of 11 April 2003 No. 491 (in force on 1 July 2003).

Chapter IV Evacuation systems

Section 12

Evacuation systems

1. On the ship there shall be arranged an evacuation system which is suitable for the safe evacuation of all divers under compression to a location where the ship represents no danger to the divers.
2. The evacuation system shall include a hyperbaric lifeboat or an evacuation unit which provides a corresponding standard of safety.
3. If a hyperbaric lifeboat is used, it shall be designed, constructed and equipped in accordance with the requirements for lifeboats in force at the time in question, as far as this is practicable considering the lifeboat's special function as an evacuation unit for divers under compression.
4. For temporary diving systems, other evacuation systems than those mentioned in subsection 2 may be approved in the individual case.
5. Launching arrangements shall as far as practicable satisfy the provisions in force at the time in question relating to launching arrangements for life-saving appliances and for boats which are lowered and hoisted with persons on board.
6. The time from the last diver enters the evacuation unit to it is 100 metres from the ship shall not exceed 15 minutes.
7. The evacuation unit shall be capable of supplying vital life-support functions until the divers have been brought into safety and shall be so equipped that its atmosphere can be monitored and regulated.
8. The evacuation unit shall have a medicine lock and shall be so equipped that the divers can breathe independently of its atmosphere.

Amended by Regulations of 11 October 1996 No. 978 (in force on 1 July 1997) and 11 April 2003 No. 491 (in force on 1 July 2003).

Chapter V Responsibility/exemptions/entry into force

Section 13

Duties

1. The company, master and other persons working on board shall perform their duties in accordance with the Ship Safety and Security Act and the supplementary provisions laid down in these Regulations.
2. For diving systems, the company which has undertaken to perform the diving operation (the diving contractor) is also responsible for ensuring that the Regulations are complied with as regards the material requirements for the diving system.

Amended by Regulations of 11 April 2003 No. 491 (in force on 1 July 2003) and 29 June 2007 No. 1006 (in force on 1 July 2007).

Section 14

Exemptions

The Norwegian Maritime Authority may grant exemption from the requirements of these Regulations if special grounds make this necessary or reasonable.

Section 15

Entry into force

1. These Regulations enter into force on 1 June 1984 for new diving systems, etc.
2. For existing diving systems, etc., section 3 concerning the provisions for control and section 7, with respect to paragraph 2.2.7 in Chapter 2 of the IMO's "Code of Safety for Diving Systems", enter into force on 1 June 1984.
3. Otherwise, these Regulations enter into force on 1 June 1986 for existing diving systems, etc.
4. As from the above dates, the Regulations of 21 February 1980 on control, etc. of diving systems cease to apply, and will be repealed on 1 June 1986.

APPENDIX I

Design and construction

2.1. General

- 2.1.1 As far as reasonable and practicable a diving system should be designed and constructed so that the failure of any single component should not lead to a dangerous situation.
- 2.1.2 Diving systems and components thereof should be designed for the conditions under which they are certified to operate.
- 2.1.3 Materials for diving system components should be suitable for their intended use.
- 2.1.4 All components in a diving system should be designed, constructed and tested in accordance with international standards¹ recognized by the Administration or proprietary specifications acceptable to the Administration, cf. section 7 of these Regulations.
- 2.1.5 In the design of pressure vessels including accessories such as doors, hinges, closing mechanisms and penetrators, the effects of rough handling and accidents should be considered in addition to design parameters such as pressure, temperature, vibration, operating and environmental conditions.
- 2.1.6 All components in a diving system shall be so designed, constructed and arranged as to permit easy cleaning, disinfection, inspection and maintenance.
- 2.1.7 A diving system should include the control equipment necessary for safe performance of diving operations.

¹Such as those of a recognized classification society which has rules for diving systems acceptable to the Administration.

2.2. Surface compression chambers

- 2.2.1 A diving system should, as a minimum, include either one surface compression chamber with two separate compartments, or two interconnected separate chambers so designed as to permit ingress or egress of personnel while one compartment or chamber remains pressurized. All doors should be designed so that locking mechanisms, if provided, can be operated from both sides.
- 2.2.2 Where a surface compression chamber is to be used in circumstances in which a person is intended to remain under pressure for a continuous period of more than 12 hours, it should be so arranged as to allow most divers to stand upright and to stretch out comfortably on their bunks. The smaller of the two compartments should be large enough for at least two persons. One of these compartments should be a living compartment.
- 2.2.3 The living compartment and other compartments intended to be used for decompression, should have a lock through which provisions, medicine and equipment may be passed into the chamber while its occupants remain under pressure.
- 2.2.4 Locks should be designed to prevent accidental opening under pressure and, where necessary, inter-locks should be provided for this purpose.
- 2.2.5 Each pressure compartment should have view ports to allow observation of all occupants from the outside.
- 2.2.6 A surface compression chamber should provide a suitable environment and facilities for the persons who use it, having regard to the type and duration of the diving operation. Where the chamber is intended to be occupied for more than 12 hours, toilet facilities should also be provided. Toilet facilities capable of discharging the waste to the outside should be fitted with suitable interlocks.
- 2.2.7 The diving system should be capable of allowing the safe transfer of a person under pressure from the diving bell to the surface compression chamber (and vice versa).

2.3. Diving bells

- 2.3.1 A diving bell should:
 - 2.3.1.1 be provided with adequate protection against mechanical damage during handling operation;
 - 2.3.1.2 be equipped with one extra lifting point designed to take the entire dry weight of the bell including ballast and equipment as well as the weight of the divers staying on in the bell;
 - 2.3.1.3 be equipped with means whereby each diver using the bell is able to enter and leave it safely as well as with means for taking an unconscious diver up into a dry bell.
- 2.3.2 Diving bell doors should be so designed as to prevent accidental opening during normal operations. All doors should be so designed that locking mechanisms, if provided, can be operated from both sides.
- 2.3.3 A diving bell should provide a suitable environment and facilities for the persons who use it, having regard to the type and duration of the diving operation.
- 2.3.4 Each diving bell should have view ports that as far as practicable allow an occupant to observe divers outside the bell.
- 2.3.5 Diving bells should be so designed as to provide adequate space for the number of occupants envisaged, together with the equipment.

2.4. Other pressure vessels not intended for human occupancy

- 2.4.1 Special attention should be paid to the design and choice of material for the construction of pressure vessels containing oxygen.
- 2.4.2 Oxygen and gases with an oxygen volume percentage higher than 25 per cent should be stored in bottles or pressure vessels exclusively intended for such gases.

2.5. Pipes, valves, fittings and hoses

- 2.5.1 Pipe systems should be so designed as to minimize the noise inside the diving bell and surface compression chamber during normal operation.
- 2.5.2 A surface compression chamber should be equipped with such valves, gauges and other fittings as are necessary to control and indicate the internal pressure and safe environment of each compartment from outside the chamber at a centralized position.
- 2.5.3 Valves, gauges and other fittings should be provided outside the bell as necessary to control and indicate the pressure and safe environment within the diving bell. The external pressure on the diving bell should also be indicated inside the bell.
- 2.5.4 All pipe penetrations on chambers should be fitted with two shut-off devices as close to the penetration as practicable. Where appropriate, one device should be a non-return valve.
- 2.5.5 All surface compression chambers and diving bells which may be pressurized separately should be fitted with overpressure alarms or pressure relief valve. If pressure relief valves are fitted, a quick-operating manual shut-off valve should be installed between the chamber and the pressure relief valve and should be wired opened with a frangible wire. This valve should be readily accessible to the attendant monitoring the operation of the chamber. All other pressure vessels and bottles should be fitted with a pressure relief device.
- 2.5.6 Piping systems which may be subjected to a higher pressure than designed for should be fitted with a pressure relief device.
- 2.5.7 All materials used in oxygen systems should be compatible with oxygen at the working pressure and flow rate.
- 2.5.8 The use of high-pressure oxygen piping should be minimized by the fitting of pressure reducing devices, as close as practicable to the storage bottles.
- 2.5.9 Flexible hoses, except for umbilicals, should be reduced to a minimum.
- 2.5.10 Hoses for oxygen should, as far as practicable, be of fireretardant construction.
- 2.5.11 Piping systems carrying mixed gas or oxygen under high pressure should not be arranged inside accommodation spaces, engine rooms or similar compartments.
- 2.5.12 Exhaust lines should be fitted with anti-suction device on the inlet side.
- 2.5.13 Gases vented from the diving system should be vented to the open air away from sources of ignition, personnel or any area where the presence of those gases could be hazardous.
- 2.5.14 All high-pressure piping should be well protected against mechanical damage.
- 2.5.15 Piping systems containing gases with more than 25 per cent oxygen should be treated as systems containing pure oxygen.
- 2.5.16 Oxygen systems with pressure greater than 1.72 bar must have slow opening shut-off valves except pressure boundary shut-off valves.

2.6. Breathing gas supply, storage and temperature control

- 2.6.1. Each surface compression chamber and diving bell should be fitted with adequate equipment for supplying and maintaining the appropriate breathing mixtures to its occupants at all depths down to maximum operating depth. When adding pure oxygen to the chamber, a separate piping system should be provided.
- 2.6.2. In addition to the system mentioned in 2.6.1 each surface compression chamber and diving bell should contain a separately controlled built-in breathing system for oxygen, therapeutic gas or bottom mix gas with at least one mask per occupant stored inside each separately pressurized compartment and means should be provided to prevent any dangerous accumulation of gases.
- 2.6.3. The diving bell should be designed with a self-contained breathing gas system capable of maintaining a satisfactory concentration of breathing gas for the occupants for a period of at least 24 hours at its maximum operating depth.
- 2.6.4. Oxygen bottles should be installed in a well-ventilated location.
- 2.6.5. Oxygen bottles should not be stored near flammable substances.
- 2.6.6 The diving system and breathing gas storage facilities should not be sited in machinery spaces if the machinery is not associated with the diving system. Where, due to the requirements of diving operations, systems are sited in hazardous areas, the electrical equipment should comply with the requirements for such equipment in hazardous areas. Diving systems should not be permitted in hazardous areas designation as Zone 0.¹
- 2.6.7. A diving system should include adequate plant and equipment to maintain the divers in safe thermal balance during normal operations.

- 2.6.8. There should be means to maintain the divers within the diving bell in thermal balance in an emergency for at least 24 hours. Such requirements may be satisfied by the use of passive means carried in the bell.
- 2.6.9. For piping systems and gas storage bottles/pressure vessels the following colour code should be used:

Name:	Symbol:	Colour code:
Oxygen	(O ₂)	White
Nitrogen	(N ₂)	Black
Air	(Air)	White and Black
Carbon dioxide	(CO ₂)	Grey
Helium	(He)	Brown
Oxygen/Helium mix gas	(O ₂ He)	White and Brown

In addition, each bottle/pressure vessel should be marked with the name and symbol given above of the gases it contains. The marking and colour coding of the gas storage bottles should be visible from the valve end.

¹ See "Code of Safety for Diving Systems" item 1.3.11., and "Code for the Construction and Equipment of Mobile Offshore Drilling Units" (the MODU Code), Chapter 6, item 6.1.: "Zone 0: in which an explosive gas/air mixture is continuously present or present for long periods."

2.7. Handling system for diving bells

- 2.7.1. A diving system should be equipped with a main handling system to ensure safe transportation of the diving bell between the work location and the surface compression chamber.
- 2.7.2. The handling system should be designed with adequate safety factors considering the environmental and operating conditions, including the dynamic loads which are encountered while handling the diving bell through the airwater interface.
- 2.7.3. The handling system should enable smooth and easily controllable handling of the diving bell.
- 2.7.4. The lowering of diving bells under normal conditions should not be controlled by brakes, but by the drive system of the winches.
- 2.7.5. If the energy supply to the handling system fails, brakes should be engaged automatically.
- 2.7.6. In the event of single component failure of the main handling system, an alternative means should be provided whereby the bell can be returned to the surface compression chamber. In addition, provisions should be made for emergency retrieval of the bell if the main and alternative means fail. If this involves buoyant ascent the bell should have sufficient stability to maintain a substantially upright position and means should be provided to prevent accidental release of the ballast weights.
- 2.7.7. Handling systems and mating devices should enable easy and firm connexion or disconnection of a diving bell to a surface compression chamber, even under conditions where the support ship or floating structure is rolling, pitching or listing to predetermined degrees.
- 2.7.8. Where a power actuating system is used for mating operations, an auxiliary power actuating system or an appropriate means should be provided to connect a diving bell to a surface compression chamber, in the event of failure of the normal power actuating system.

2.8. Interface between diving system and the ship or floating structure

- 2.8.1. The diving system and breathing gas facilities should be arranged in spaces or locations which are adequately ventilated and provided with suitable electric lighting.
- 2.8.2. When any part of the diving system is sited on deck, particular consideration should be given to providing reasonable protection from the sea, icing or any damage which may result from other activities on board the ship or floating structure.
- 2.8.3. Provision should be made to ensure that the diving system and auxiliary equipment is securely fastened to the ship or floating structure and that adjacent equipment should be similarly secured. Consideration should be given to the relative movement between the components of the system. In addition, the fastening arrangements should be able to meet any required survival conditions of the ship or floating structure.

2.9. Fire prevention, detection and extinction

- 2.9.1. All materials and equipment used in connexion with the diving system should be, as far as is reasonably practicable, of fire-retardant type in order to minimize the risk of fire and sources of ignition.
- 2.9.2. Spaces in the interior of ships or floating structures in which the diving system or its auxiliary equipment are carried should be provided with structural fire protection in a way similar to control stations¹ bounding main zones.
- 2.9.3. Interior spaces containing diving equipment such as surface compression chambers, diving bells, gas storage, compressors and control stands should be covered with an automatic fire detection and alarm system and a suitable fixed fire-extinguishing system.
- 2.9.4. Portable fire extinguishers of approved types and designs should be distributed throughout the space containing the diving system. One of the portable fire-extinguishers should be stowed near the entrance to that space.
- 2.9.5. When situated in enclosed spaces a manually actuated water spray system having an application rate of 10 litres/m²/min. of the horizontal projected area should be provided to cool and protect pressure vessels in the event of external fire. When situated on open deck fire hoses may be considered as providing the necessary protection.
- 2.9.6. Each compartment in a surface compression chamber should have a suitable means of extinguishing a fire in the interior which would provide rapid and efficient distribution of the extinguishing agent to any part of the chamber.

¹“Control Stations” as defined in Regulation 3 and referred to in regulation 20, Chapter II-2 of the International Convention for the Safety of Life at Sea, 1974.

2.10. Electrical system

- 2.10.1 All electrical equipment and installations, including power supply arrangements, should be designed for the environment in which they will operate to minimize the risk of fire, explosion, electrical shock and emission of toxic gases to personnel, and galvanic action of the surface compression chamber or diving bell.
- 2.10.2 In the event of failure of the main source of electrical power supply to the diving system an independent source of electrical power should be available for the safe termination of the diving operation. It is admissible to use the ship’s emergency source of electrical power as an emergency source of electrical power if it has sufficient electrical power capacity to supply the diving system and the emergency load for the vessel at the same time.
- 2.10.3 The alternative source of electrical power should be located outside the machinery casings to ensure its functioning in the event of fire or other casualty causing failure to the main electrical installation.
- 2.10.4 Each surface compression chamber and diving bell should have adequate means of normal and emergency lighting to allow an occupant to read gauges and operate the system within each compartment.

2.11. Control system

- 2.11.1 The diving system should be so arranged as to ensure that centralized control of the safe operation of the system can be maintained under all weather conditions.
- 2.11.2 As a minimum, facilities should be provided at the central control position to monitor the values of the following parameters for each occupied compartment:

Parameters	Compartments	
	Surface compression	Diving chamber bell
Pressure or depth ¹	0	0 ²
Temperature ¹	0	
Humidity ¹	0	
Oxygen partial pressure	0	0
CO ₂ partial pressure	0	0

¹ Those parameters should be indicated continuously.

² Pressure or depth both inside and outside bell should be indicated.

2.11.3 Provision should be made within the bell for an independent means of monitoring oxygen and carbon dioxide levels.

2.12. Communications and relaxation system

2.12.1 The communication system should be arranged for direct two-way communication between the control stand and:

- diver in water
- diving bell
- each compartment of the chambers
- diving system handling positions
- dynamic positioning room
- bridge, ship's command centre or drilling floor

2.12.2 Alternative means of communication with divers in the surface compression chamber and diving bell should be available in emergency.

2.12.3 Each surface compression chamber and diving bell should be connected to a speech unscrambler when used with gas systems, including helium.

2.12.4 A self-contained through-water communication system should be provided for emergency communication with diving bells when operating under water.

2.12.5 A diving bell should have an emergency locating device with a frequency of 37.5 kHz designed to assist personnel on the surface in establishing and maintaining contact with the submerged diving bell if the umbilical to the surface is severed.