International Diving Schools Association

INTERNATIONAL DIVER TRAINING CERTIFICATION

DIVER TRAINING STANDARDS

Revision 4

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Table of Changes

Note : The date on the original pages of Revision 4 is 29 October 2009

Change Number	Date of change	Pages affected	Date inserted

OTHER DOCUMENTS

The details of the Constitution, Types of Membership, the Recognition of Schools and other relevant information are contained in the Operational and Administrative Procedures which are published separately. They may be obtained from the Administrator at info@idsaworldwide.org

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The IDSA DIVER TRAINING STANDARDS

CONTENTS

SECTION 1 : The ASSOCIATION

The Association was formed in 1982 as a result of a meeting between Schools attending the American Diving Contractors Conference in New Orleans. The aims of the Association were then, and are now :

- To provide a means of effective communication between schools.
- To work towards common International Standards of Training.
- To improve the quality of commercial diving education.
- To work towards improved standards of safety, emergency drills and procedures.
- To provide a common and collective voice to Government & Industry on any matter affecting members.
- To co-operate on matters which may improve placement opportunities for graduates.
- To promote any activity, idea or subject which may improve the international operations of the Association.

The Association is concerned with all divers - Offshore, Inshore and Inland - and their training, as well as specialist non diving qualifications e.g. Supervisor, Diver Medic or DMT, LST etc. It has already established International Diver Training Standards based on the consensus opinion of its many members, and which are contained in this booklet, Specialist Qualifications are under consideration.

The Standards provide both a yardstick for those responsible for either administering existing National Standards or creating new ones, and a guide for Clients, Diving Contractors and Divers themselves. It is considered that the introduction of these Internationally agreed diver training standards will have the effect of :

- Improving Safety
- Providing Contractors with a direct input to the Diver Training Syllabus.
- Enabling Contractors to bid across National Borders on a more even playing field
- Improving Diver quality
- Providing Divers with greater Job Opportunities

The programme is not intended to conflict with either National Diving Standards or Legislation. Some governments have, and will continue to set their own National diver training requirements. The IDSA Programme system provides a means of equating National Standards by maintaining a Table of Equivalence - see Appendix 1.

SECTION 2 : A SUMMARY of the DIVER TRAINING STANDARDS

The IDSA Diver Training System is based on a modular approach. Each Standard, or Level of Competence, is made up from a combination of modules (see the Tables which follow). The modules may be taught in two ways :

Either : Combined as an integrated course

Modules may be combined to run a course leading to one of the IDSA Levels, for example, if modules A & B are combined, successful students would be eligible to receive the IDSA Level 1 (SCUBA) qualification.

Or : Individually

Courses may be run covering the requirements of one module only, e.g. a course may be run to the syllabus of Module ‘C’ for divers wishing to progress from Level 1 to Level 2.

Note It is not necessary to present each subject individually or in the order shown in these Standards. The order may be altered to suit the facilities, staff and equipment available, provided it is progressive. With good planning, a number of subjects can be covered during a single training operation. However, the whole content of the module must be covered and competence in each part displayed before the trainee is said to have completed it successfully.

TABLE 1 : The IDSA DIVER TRAINING MODULES			
	MODULE TYPE	**DETAIL**	
A	Preparatory	Diving principles and theory common to both SCUBA and Surface Supply. Must be combined with either the SCUBA or Surface Supply Modules.	Theory only
B	Commercial SCUBA Diver	Training and assessment in the use of SCUBA and simple work tasks.	30msw
C	Surface Supplied Inshore Air Diver	Training and assessment in the use of Surface Orientated Air Diving Equipment and common inland/inshore work tasks.	30msw
D	Surface Supplied Offshore Air Diver	Training and assessment in air diving operations using an open (wet) bell acting as Bellman and Diver and/or using a Hot Water suit.	50msw
E	Closed Bell/ Mixed Gas	Training and assessment in the use and operation of a closed bell - acting as Bellman and Diver using the appropriate breathing gas mixture.	100m

TABLE 2 : The IDSA DIVER TRAINING STANDARDS - DEFINITIONS LEVELS 1,2,3 AND 4			
IDSA STANDARDS	**MADE UP of MODULES**	**DETAIL**	**Note 1**
IDSA Level 1 (Commercial SCUBA Diver)	**A + B**	Competent to dive safely using open circuit self-contained air breathing equipment. Has a working knowledge of the following tasks : Elementary rigging, the Use of Lifting Bags, Diver Search Techniques, the Use of Hand Tools and Visual Inspection - see Note 2.	30msw
IDSA Level 2 Surface Supplied Inshore Air Diver	**A + B + C**	Competent to dive safely both inland & inshore using open circuit self-contained air breathing equipment and surface orientated air diving equipment. Has a working knowledge of the Level 1 tasks plus Chamber Operations, the use of Power Tools, thermal Arc Cutting equipment, Air Lifts and Jetting equipment, simple Underwater Construction tasks - see Note 2. The principles of the following subjects are also taught, but in-water experience is not mandatory -Bolt Guns, Explosives, Wet Welding, Diving in Polluted Waters.	30msw
IDSA Level 3 Surface Supplied Offshore Air Diver	**A + B+ C + D**	Competent to dive inland, inshore & offshore using, open circuit self-contained air breathing equipment, surface orientated air diving equipment, and from an open bell. Able to use a hot-water suit. Has a working knowledge of the work tasks listed in Levels 1 & 2.	50msw
IDSA Level 4 (Closed Bell/Mixed Gas Diver)	**A + B+ C + D+E** **Or** **A + C + D + E**	Competent to take part in closed bell operations, acting as Bellman and Diver, using the appropriate breathing gas mixture.	100msw

NOTES to Tables 1 & 2:

1. DEPTH LIMITS The depths shown in the right hand column of the tables above are those which a diver is competent to achieve on successful completion of training. He/she may go deeper with further experience and/or training as assessed by a Diving Contractor and allowed by National Legislation.

2. TASK TRAINING : The Task training will provide the trainee with a general appreciation of the techniques and problems involved in carrying out the specified underwater work. For the diver to be considered a competent worker it will generally be necessary for **further specialist training to be undertaken**, especially for cutting, welding, explosives, NDT and offshore air diving.

SECTION 3. LEVELS OF KNOWLEDGE

3.1. GENERAL

The contents of each section aim to develop a degree of competence in a particular aspect of diving or to develop a familiarity with a piece of equipment or a procedure. Students should be able to demonstrate their acquired knowledge by performance or be able to explain and/or describe specific procedures in accordance with the requirements of the module.

All candidates should meet the same standards regardless of disability or language. No allowances should be made.

The need for safe working practices should be particularly stressed as part of the training, along with the necessity to work as part of a team.

3.2 DESCRIPTION OF LEVELS (See also Section 6.3)

The levels of knowledge required by the diver are defined as follows :

Level A : Is practically competent in, and has a thorough theoretical knowledge of the subject.

Level B : Is practically competent to perform an operation under supervision, and has the appropriate theoretical knowledge (Level C below).

Level C : Has the appropriate theoretical knowledge of the subject, subdivided as follows :

C Plus	(C+)	Has a thorough knowledge
C	(C)	Has an understanding of
C Minus	(C-)	Is familiar with

SECTION 4. METHODS of ASSESSMENT (See also Section 8.3)

Methods of Assessment may be shown by the following abbreviations :

CA	Continuous Assessment throughout the course	PD	Practical ‘dry’ assessment
IO	Instructor Observation	PW	Practical in-water assessment
IW	Instructor Observation in-water	WE	Written exam
OP	Oral/Practical session		

SECTION 5. DEFINITIONS

a. SSDE = Surface Supplied Air Diving Equipment.

b. The word ‘he’ and ‘his’ are to be taken as either masculine or feminine

c. Personal diving equipment is the diving equipment and suit worn by a diver including underwater breathing apparatus.

d. Open water is defined as any large body of water, including harbours, lakes and rivers where the environment is affected by tides, currents surface wind, and other associated environmental factors.

e. Bottom Time is taken as the time of leaving surface to the time that a diver begins an ascent to the surface.

SECTION 6. MODULE & COURSE MINIMUM LENGTHS

The minimum recommended number of contact hours for modules and courses are :

When modules are taught independently :

Module A	80 hours
Module B	120 hours
Module C	200 hours
Module D	48 hours

When Modules are taught as a continuous course

Level 1	Modules A & B	200 hours
Level 2	Modules A, B & C	400 hours
Level 3	Modules A, B, C & D	448 hours

SECTION 7. BOTTOM TIME REQUIREMENTS

TABLE 4: BOTTOM TIMES REQUIRED DURING AN IDSA TRAINING COURSE

IDSA QUALIFICATION		Equipment	Depth in Metres of Sea Water	Total Bottom Time (Mins)	Minimum Number of Dives	Minimum Bottom Time for any dive
IDSA LEVEL 1		**SCUBA**	0 to 25	500	15	20
Commercial SCUBA DIVER			26 to 30	150	5	20
			TOTAL	650	20	
TOTAL BOTTOM TIME LEVEL 1 = 650 Minutes						
IDSA LEVEL 2	**LEVEL 1**	**SSDE**	0 to 9	650	12	30
SURFACE	**PLUS**		10 to 19	300	6	25
SUPPLIED INSHORE AIR DIVER			20 to 30	200	4	20
			TOTAL:	1150	22	
TOTAL BOTTOM TIME LEVEL 2 = LEVEL 1 (650 Minutes) + LEVEL 2 (1150 minutes) = 1800 minutes						
IDSA LEVEL 3	**LEVEL 2**	**SDDE**	30 to 39	150	5	20
	PLUS		40 to 50	160	5	15
SURFACE SUPPLIED		**Wet Bell**	0 t0 9	90	3	30
OFFSHORE AIR DIVER			10 to 20	60	2	30
			TOTAL	460	15	
TOTAL BOTTOM TIME LEVEL 3 = LEVEL 2 (1800 Minutes) + LEVEL 3 460 MINUTES) = 2260 minutes						

Notes : 1. The Hot Water suit training may take place during either Surface 0rientated or Wet Bell Dives. Each diver must make at least 3 dives of minimum duration 30 minutes using a Hot Water suit.

2. At least one dive must be made to the maximum depth of 50 metres.

IDSA LEVEL 4 CLOSED BELL/MIXED GAS DIVER **Note** No specific bottom times are set for this standard.	**LEVEL 3 PLUS**	Divers must demonstrate their competence to dive in open water as a diver, rescue diver and bellman by completing : 1. 24 bell lockouts as a diver 2. 24 bell lockouts acting as bellman 3. 5 simulated rescues of an incapacitated diver 4. 12 bell runs from deck chamber to deck chamber with full transfer under pressure. 5. Four chamber pressurisation and TUP checks 6. Four pre-dive bell checks 7. Safely and competently three bell bounce dives to depths of 55, 75 and 100 msw respectively. 8. A saturation dive from a living depth greater than 50 msw from which the student must complete two bell runs to a depth greater than 50 msw. The lockout for these bell runs should be at least 15 minutes for each diver on each occasion. (See Note). A simulated incapacitated diver rescue should be made during one lockout.

SECTION 8 The LAYOUT of MODULES in these STANDARDS

8.1 Module Designation Letters

Each Module is prefixed by a designation letter :

A. Preparatory
B. Commercial SCUBA
C. surface Supplied Inshore Air
D. Surface Supplied Offshore Air
E. Closed Bell/Mixed Gas

8.2 Sections & Sub-Sections

The modules are divided into sections each concerned with a specific subject or topic, and its associated reference number, for example :

A1 THE HISTORY OF DIVING
A2 DIVING PHYSICS
A3 DIVING PHYSIOLOGY
And so on

Each subject may then be divided into subsections when necessary.

8.3 Column Headings

Each module page is divided in to 5 columns.

(i)	(ii)	(iii)	(iv)	(v)
A2 : DIVING PHYSICS **Aim :** Understand the properties of liquids and gases, the behaviour of light and sound and the principles of buoyancy as they affect the diver and diving operations, by explaining :				
(a)	The relationship between pressure and volume (Boyle's Law) and being able to calculate the volume changes with changing depths.	C+		
(b)	The relationship between volume and temperature (Charles' Law), and being able to calculate the pressure changes with changes in temperature.	C+		
(c)	Etc			

Column (i) : The IDSA Sub section reference. For example a subsection in the Diving Physics section of the Preparatory Module (as shown above) would be denoted as A2 (a), (b) as required. One in the SCUBA Module B as B5 (d) etc.

Column (ii) : Describes the enabling or training objective.

Column (iii) : The Level of Knowledge (LoK).

The 'Level of Knowledge' is described in Section 3.2. and indicates to the Instructor the knowledge level at which the enabling or training objective should be taught.

8.3 Column Headings (Continued)

Columns (iv) & (v) :

These columns have a number of possible uses, for example :

a. Indicating to the Instructor the Method of Assessment which is to be used in each sub section - See section 4 above.

b. When compiling a course programme : for example, the Week and Day of the Schools programme on which each subsection is taught can be entered so ensuring that all the sub sections of the module are included in the programme. This reference will also be of considerable assistance both to the Administration when an Application for Full Membership is first made and subsequently to auditors.

c. A second copy of the module might be used as part of the course records for each student. As each subsection is completed it could be either ticked and the date entered to show that the student has received the necessary instruction.

8.4 The Training Aims and Objectives

The Aim summarises the overall training requirements for the section.

Note : Each Aim is written as though it was pre-fixed by the words “A diver MUST be able to….”

Each lettered sub section then describes the Training or Enabling Objectives, that is, the practical competence and/or theoretical knowledge required to achieve the aim.

IDSA DIVER TRAINING STANDARDS

MODULE A : PREPARATORY

TRAINING DEFINITION

On successful completion of the Preparatory Training Module the diver will have the theoretical knowledge necessary to understand the principles of safe diving which are common to both SCUBA and Surface Supplied operations.

Note :

This module is NOT a Standard in its own right.

It must be combined as shown :

With Module B	for the IDSA Level 1	Commercial SCUBA Standard
With Modules B & C	for the IDSA Level 2	Surface Supplied Inshore Air Standard
With Modules B, C & D	for the IDSA Level 3	Surface Supplied Offshore Air Standard
With Modules C, D & E	for the IDSA Level 4	Closed Bell/Mixed Gas Standard

ENTRY REQUIREMENTS

All trainees should:

- be competent swimmers (e.g. Be able to swim 200 metres in a diving suit weighted to neutral buoyancy).
- be able to add, subtract, multiply and divide whole numbers, decimals or fractions, calculate percentages.
- transpose and solve simple formulae e.g. Gas Laws.
- be able to understand and make written and verbal communications and communicate easily with others. This is particularly important where trainees are of different nationalities.
- be willing/able to work as part of a team.

Note

It is strongly recommended that all entrants complete an Aptitude Test successfully - preferably in Open Water - before being accepted on course.

CONTENTS

A1 : The HISTORY of DIVING

Aim : Describe the origins and development of the major items of diving equipment and significant diving techniques, for example :

(a)	Diving Suits	C-		
(b)	Open & closed circuit self contained equipment	C-		
(c)	Diving Helmets and masks	C-		
(d)	Decompression Procedures	C-		
(e)	Saturation Diving	C-		

A2 : DIVING PHYSICS

Aim : Understand the properties of liquids and gases, the behaviour of light and sound and the principles of buoyancy as they affect the diver and diving operations, by explaining :

(a)	The relationship between pressure and volume (Boyle's Law) and being able to calculate the volume changes with changing depths.	C+		
(b)	The relationship between volume and temperature (Charles' Law), and being able to calculate pressure or volume changes with changes in temperature.	C+		
(c)	The partial pressure of gases (Dalton's Law), and being able to calculate the partial pressure of gasses at different depths.	C+		
(d)	The solubility of gases in solution (Henry's Law), and the need for decompression.	C+		
(e)	i. The principles of buoyancy (Archimedes' Principle). ii. The calculation of the buoyancy of an object, particularly with rergard to the use of lifting/buoyancy bags. iii. The difference in buoyancy between salt and fresh water.	C+		
(f)	The behaviour of light in water - refraction and turbidity.	C+		
(g)	The behaviour of sound in water - directionality and speed.	C+		
(h)	The imperial and metric systems of measurement, and being able to convert from one system to the other.	C+		

A3 : DIVING PHYSIOLOGY

Aim To understand the Structure and Function of the Human Body by :

(a)	Describing he Musculo/skeletal systems	C-		
(b)	Describing the Nervous system	C-		
(c)	Describing the Circulatory system	C		
(d)	Describing the Respiratory system	C		
(e)	Explaining the function of the ears, sinuses and vestibular organs	C+		
(f)	Explaining the effects of pressure on the body, and how it causes or relates to diving related illnesses	C+		

A4 : DIVING FIRST AID

Aim : Communicate with a medically trained person in the event of an injury or diving illness relating to himself or another diver, to render simple First Aid and to recognise the symptoms of diving related conditions in himself and others.

NOTES :

1. Many Countries have well established National and Private First Aid Courses, which cover some or all parts of this section. These courses may be taken into account when planning the training programme but, when they are, schools should ensure that all objectives have been taught, and if not include them in their training programme.
2. Where the Level of Knowledge is marked ***** it is recommended that a practical assessment is designed to check the students competence in all these subjects at the relevant level.

Sub Section : A4.1 General

Aim : Explain the general principles of First Aid at a dive site :

(a)	The principles of First Aid	C+		
(b)	The First Aid equipment generally available at a dive site	C+		
(c)	The principle causes of Respiratory and Cardiac Arrest	C+		
(d)	The care of a casualty on site.	C		

Sub Section : A4.2 Cardio Pulmonary Resuscitation

Aim : Explain and demonstrate practically :

(a)	Expired Air Resuscitation	A*		
(b)	The administration of Oxygen	A*		

A4 : DIVING FIRST AID (Continued)

Sub Section : A4.3 Non Diving Related Illnesses :

Aim : Understand the causes, be able to recognize the signs & symptoms, and be able to provide First Aid for the following Non Diving Related Illnesses, maintaining acceptable standards of hygiene and using the standard First Aid Equipment provided at a Dive Site.

(a)	Bleeding	B* Note 2		
(b)	Fractures, sprains and muscle trauma	B* Note 2		
(c)	Shock	C+		
(d)	Burns	C		
(e)	Electrocution	C		

Sub Section : A4.4 Diving Related Illnesses :

Aim : Understand the causes, be able to recognize the signs & symptoms, and be able to provide First Aid for the following Diving Related Illnesses, maintaining acceptable standards of hygiene and using the standard First Aid Equipment provided at a Dive Site.

(a)	Decompression sickness and pulmonary barotraumas	C+		
(b)	Ear problems	C+		
(c)	Drowning : vomiting underwater	C+		
(d)	Carbon dioxide poisoning	C+		
(e)	Carbon monoxide poisoning	C+		
(f)	Oxygen toxicity	C+		
(g)	Anoxia and hypoxia	C+		
(h)	Nitrogen narcosis	C+		
(i)	Hypothermia and Hyperthermia	C+		
(j)	Hyperventilation	C		

A5 : STANDARD DECOMPRESSION TABLES

Aim Understand the need for standard & surface air decompression tables and the procedures used, and to be aware that there are a variety of tables and of the need for therapeutic tables and their use.

(a)	Understand that there are a variety of decompression tables available, and that they each have their own procedure and rules which govern their use.	C		
(b)	Is able to use the Schools tables to calculate the decompression required for single and multiple dives, and : i. Make allowances for environmental conditions and stress. ii. Take the corrective action which is applied for deviation from the decompression schedule.	C+		
(c)	Understands the reasons for, and procedures associated with, therapeutic treatments.	C		

A6 : DIVER COMMUNICATION SYSTEMS

Aim Understand the principles and use of all current diver communication systems.

(a)	The meaning and use of current Hand and Lifeline Signals. **Note :** It is recommended that the Rope signals shown in Appendix 2 are used whenever possible.	C+		
(b)	The principles and use of Hardwire communications and the associated voice procedures, including the phonetic alphabet.	C+		
(c)	The principles of Through Water communication equipment and its limitations.	C-		

A7 : UNDERWATER HAZARDS

Aim : Identify possible Hazards and be aware of the precautions needed to prevent or avoid them, by understanding :

(a)	The principles of Risk Assessment, and be able to carry one out.	B		
(b)	The possible trapping hazards for divers : • Gates, sluices and culverts • Intakes and outfalls • Marine piers and jetties • Others particular to the locality of the School •	C		
(c)	The precautions to be taken when diving around hazards, for e.g : • Taking in to account accelerated waterflow and pressure differentials • Keeping the lifeline free from snagging • Retracing the life line when returning to the surface	C		
(d)	That no lifting operation other than that connected to the dive takes place on a diving site	C		
(e)	The lights, flags and shape signals which warn other vessels of diving operations	C		
(f)	The problems associated with tying off to structures	C		
(g) ,	The hazards which exist when diving in the vicinity of : • Impressed current cathodic protection • Propellers and thrusters • Subsea electrical units • Dangerous Marine Life • Sonar transmissions • Nets and Cages • Diving from DP Vessels	C		
(h)	That a diving operation must be authorized by the person having control of the dive site i.e. Harbour Master, OIM, Master of Vessel etc.	C		

A8 : AIR DIVING CHAMBER OPERATIONS

Aim : Understand the uses and limitations of compression chambers, and be familiar with their layout and functions, by describing :

(a)	The advantages and disadvantages of using single compartment chambers, particularly those which are available for the transfer of divers under pressure	C-		
(b)	The uses and limitations of two compartment chambers with a maximum depth rating of 60 metres	C		
(c)	The layout of a typical two compartment Chamber	C		

A9 : UNDERWATER WORK

Aim : Demonstrate his knowledge of simple underwater work tasks

Sub Section A9.1 - Rigging

Aim : Demonstrate an elementary knowledge of rigging practices and safety procedures, by :

(a)	Tying the following knots (See examples at Appendix 3 : • Reef Knot • Bowline • Clove Hitch • Round Turn & 2 x ½ hitches • Sheet Bend • Rolling Hitch	A		
(b)	Understanding : i. The definition of, methods available to calculate the safe working loads, breaking strains etc of rigging equipment and 'mechanical advantage'. ii. The principles for the safe handling and operational use of cordage, wire, ropes, shackles, slings, blocks and tackles, chain hoists, winches on the surface and underwater. iii. The need for maintenance and testing.	C		

Sub Section : A9-2 Diver Search Methods

(a)	Describing the principles and limitations of at least 3 different types of diver seabed searches.	C+		

Sub Section : A9.3 Visual Inspection techniques

(a)	Describing the following Inspection techniques : • Visual • Still Photographic • Video • Non destructive testing	C		
(b)	Understanding the principles of writing and illustrating a simple report.	C		

Sub Section A9.4 The Use of Lifting Bags

(a)	Understanding the operational and safety procedures for the use of lifting bags.	C		

Sub Section : A9.5 Hand Tools

(a)	Understanding the use and safety requirements for hand tools, the need for pre and post dive checks and user maintenance.	C		

A10 : PLANT and EQUIPMENT

Aim : Demonstrate his knowledge of diving plant and equipment by :

Sub Section : A10.1 - Describing the principles of operation and safety requirements for :

(a)	Personal Equipment	C		
(b)	HP and LP compressors	C-		

Sub Section : A10.2 - Describing the regulations associated with the :

(a)	Use and marking of High Pressure Air Cylinders	C		
(b)	Handling of Oxygen under pressure	C		

A11 : MAINTENANCE and REPAIR

Aim : Understand the procedures used in the maintenance of Diving Plant & equipment, by :

(a)	Describing the need and function of planned maintenance schedules	C		
(b)	Describing the need for and use of Pre & Post dive Checks	C		
(c)	Understanding the relevant national regulations	C-		

A12 : SEAMANSHIP

Aim : Have sufficient knowledge of seamanship to act as a crewman in a small craft or Harbour/Coastal diving vessel, by :-

NOTE :

Many Countries have well established Centres which run Boat Handling Courses to recognised National Commercial or Recreational Standards. These courses may cover some or all parts of this section, and may be taken into account when planning the training programme, but, when they are, schools should ensure that all objectives have been taught, and if not, include them in the programme.

Sub Section : A12.1 - TIDES

Aim : Understanding the influence of Tides on diving operations by :

(a)	Being able to use Tide Tables and Charts to determine Tidal strength, height and direction, and the depth of water.	B		

Sub Section : A12.2 - Chartwork and Navigation

Aim : Understanding the use of charts and elementary navigation as they affect diving operations, by :

(a)	Being able to interpret a chart as necessary for Harbour/Coastal dives	B		
(b)	Describing principles of Harbour/Coastal Navigation	B		

Sub Section : A12.3 - Small Boat Handling

Aim : Understanding the methods of handling of Small Craft and the duties of the crew in a Harbour/Coastal Diving Vessel, by :

(a)	Describing the principles of handling a small boat in Open Water and in Harbour to carry out the following manoeuvres. • Coming alongside • Picking up a mooring • Picking up a Diver • Launching, starting/stopping	C		
(b)	Preparing a small boat for work with all safety and other necessary equipment.	C		
(c)	Describing the handling of wires and ropes and other duties required by a crewman of a Harbour/Coastal Diving Vessel.	C		

A13 : LEGISLATION

Aim : To understand the National and other Regulations of the Country in which training is being carried out :

(a)	As they are directly concerned with the diver as an individual.	C+		
(b)	As they affect diving operations.	C-		

NOTE **:** If no National Standards exist, the School must specify the standard of another Country which is used and taught during the course, and which must be specified in the Divers Logbook.

IDSA DIVER TRAINING STANDARDS

MODULE B : COMMERCIAL SCUBA

IDSA LEVEL 1 - SCUBA DIVER

To obtain the IDSA Level 1 (SCUBA Diver) Training Qualification this module MUST follow or be combined with Module A.

TRAINING DEFINITION

On successful completion of modules A & B a diver may be awarded the IDSA Level 1 Qualification, and will be :

Competent to dive safely using open circuit self-contained air breathing equipment to a depth of 30 metres, and have a working knowledge of the following tasks :

- Elementary rigging
- The Use of Lifting Bags
- Diver Search Techniques
- The Use of Hand Tools
- Visual Inspection

Notes :

1. The Task training will provide the trainee with a general appreciation of the techniques and problems involved in carrying out the specified underwater work. For the diver to be considered a competent worker it will generally be necessary for **further specialist training to be undertaken**.

2. Successful students are competent to dive to the depth shown. They may go deeper with further experience and/or training as assessed by a Diving Contractor and allowed by National Legislation.

3. In order to attend an IDSA Diver Training course a student MUST hold a certificate stating that he has undergone a medical **examination** and been found fit to dive by a doctor authorized to carry out the medical examination of commercial divers. This Certificate MUST be obtained before training commences, and its expiry date must be after the end date of the course.

CONTENTS

B1 : PRACTICAL DIVING

Aim : Demonstrate his competence to dive in Open Water using SCUBA to a maximum depth of 30m, by :

(a)	Understanding SCUBA safety and operating procedures				C+		
(b)	Diving safely and competently on air to a depth of 30 metres, having gained the following experience :				A		
	Depth in Metres of Sea Water (msw)	Total Bottom Time (Mins)	Minimum Number of Dives	Minimum Bottom Time for any Dive			
	0 to 25	500	15	20			
	26 to 30	150	5	20			
	Notes : 1. Divers must be working or carrying out training drills during all dives. 2. Deeper dive times may be counted towards shallow minute requirements. 3. Dry Compression Chamber dives may not be included in these times. 4. At least **80**% of the dives must be carried out in open water. 5. Some students may require more than the minimum times before they can be considered competent. 6. Students who graduate without achieving the bottom times required by IDSA will either be issued with a National Qualification card or a card from the School. They may be issued with an IDSA Qualification card once they have provided evidence for the bottom time they are lacking. This evidence may be either on-the-job experience – fully documented and certified in their Log Book, or successful completion of an appropriate module at an IDSA Approved School.						
(c)	Being able to follow the procedures necessary to carry out in-water stops for a simulated dive of 25 minutes at 30 msw.				A		
(d)	Being able to use basic diving equipment e.g. half mask, fins, weightbelt, dry or wet suit, suit inflation, knife, compass etc.				A		
(e)	Being able to use a Full face mask with an oral/nasal mask or mouthpiece.				A		
(f)	Operating the reserve system appropriate to the equipment in use.				A		
(g)	Using float lines and diver marker floats.				A		
(h)	Diving in nil visibility.				A		
(i)	Diving in mid water in moderate currents (about 0.5 knots).				A		
(j)	Diving in varying bottom conditions e.g. weed, mud, sand, shingle.				A		
(k)	Using the diving suit suitable for the environment i.e. temperature and depth, Including the use of suit inflation				A		
(l)	Using at least 2 devices to adjust buoyancy as required e.g. Suit inflation, BC.				A		
(m)	Clearing ears on descent as necessary.				A		
(n)	Ascending at the predetermined rate, breathing correctly.				A		
(o)	Entering and leaving the water safely in different situations.				A		
(p)	Dressing and undressing in his/her personal diving equipment.				A		
(q)	Being familiar with : • The operation of closed and semi-closed circuit breathing equipment using oxygen, enriched air or other gas mixtures. • The safety procedures used, and the potential hazards associated with the use of these techniques during SCUBA operations.				C-		
(r)	Maintaining a personal Logbook.				A		

B2 : SURFACE PROCEDURES

Aim : Demonstrate his competence to act as a member of the surface team by :

(a)	Assisting a diver to dress and undress in his personal diving equipment.	A		
(b)	Understanding the responsibilities of, and carrying out the duties of a Diver's tender/linesman, including the use of common diver communication systems.	A		
(c)	Carrying out pre-dive equipment checks.	A		
(d)	Carrying out post-dive equipment checks.	A		
(e)	Inspecting and maintaining personal diving equipment and reporting defects.	A		

B3 : AIR DIVING CHAMBER OPERATIONS

Aim : **C**omplete a chamber dive to at least 40msw successfully, and understand the duties of a chamber attendant by :

(a)	Diving to at least 30msw in a 2 compartment chamber and successfully completing a simple comprehension test while at the maximum depth.	A		
(b)	Describe and perform the duties of a chamber attendant.	B		

B4 : UNDERWATER EMERGENCIES

Aim : Understand and carry out the procedures necessary to deal with an emergency, both as a diver and as a member of the diving team :

Note : Team training drills should include the simulated rescue of an unconscious diver

Sub Section : B4.1 As a Diver he must be able to :

(a)	Shed weights, use Suit Inflation and operate a BC, understanding the limitations of these actions and any resulting dangers.	A		
(b)	Carry out the correct remedial actions in the event of loss of either his breathing supply or communications, or both.	A		
(c)	Understand the necessary remedial action(s), their limitations and any resulting dangers as a result of a severed or trapped lifeline.	C+		
(d)	Understand the principles of Free Ascent.	C+		

Sub Section : B4.2 As the In-Water Stand By Diver he must be able to :

(a)	Reach his Buddy diver in an emergency.	A		
(b)	Carry out rescue/emergency procedures according to the equipment, environment and the emergency situation.	A		
(c)	Recover the distressed diver to the surface and assist in his recovery.	A		

B4 : UNDERWATER EMERGENCIES (Continued)				
Sub Section : B4.3 As the Surface Stand By Diver he must be able to :				
(a)	Dress in the appropriate state of readiness, according to the dive site and environmental conditions.	A		
(b)	Enter the water promptly as authorised by the Supervisor.	A		
(c)	Follow a lifeline to the distressed diver.	A		
(d)	Carry out rescue/emergency procedures according to the equipment, environment and the emergency situation.	A		
(e)	Recover the distressed diver to the diving platform.	A		
Sub Section : B4.4 As a member of the Surface Team he must be able to :				
(a)	Assist in the recovery of a distressed diver from the water.	A		
(b)	Enter the water when authorised to assist with recovery.	A		
(c)	Assist with the removal of clothing and First Aid as may be appropriate.	A		

B5 : **COMMUNICATION SYSTEMS**

Aim : Use all current diver communication systems as they apply to SCUBA Operations, safely and efficiently, by sending and receiving :

(a)	Hand Signals.	A		
(b)	Lifeline Signals.	A		
(c)	Messages using recognised communication procedures via a hard wire communication system.	A		
(d)	And by : Understanding the use of recognised communication procedures via a through-water communication system.	**C**		

B6 : UNDERWATER WORK

Aim : Demonstrate his ability to carry out simple work tasks safely and efficiently by :

Note : In all areas of work the trainee should be aware of statutory testing and examination requirements for lifting equipment – including Safe Working Loads and their significance.

Sub Section : B6.1 Rigging					
(a)	Tying the following knots underwater : Reef Knot — Bowline — Clove Hitch Rolling Hitch — Sheet Bend — Round Turn & 2 x ½ hitches		A		
Sub Section : B6.2 Diver Search Methods					
(a)	Finding an object using two different types of seabed search – one in nil visibility.		A		
Sub Section : B6.3 Visual Inspection Techniques					
(a)	Producing a report based on a simple underwater inspection, measurement, or survey task.		A		
Sub Section : B6.4 The Use of Lifting Bags					
(a)	Using a lifting bag to move an object weighing at least 100Kg in water.		A		
Sub Section : B6.5 Hand Tools					
(a)	Completing a range of underwater tasks safely using at least 2 different hand tools.		A		

B7 : PLANT & EQUIPMENT

Aim : Understand the function and operation of SCUBA Equipment and of low and high pressure compressors, and be able to charge all types of diving cylinder either directly from a compressor or from a High Pressure air bank (Cascade system). by :

Sub Section : B7.1 SCUBA Equipment				
(a)	Explaining the function and operation of current SCUBA equipment.	C+		
Sub Section : B7.2 High & Low Pressure Compressors				
(a)	Carrying out pre-dive checks, starting procedures and running checks on compressors using either electrical or diesel prime movers.	B		
(b)	Carrying out post-dive checks and stopping procedures on compressors using either electrical or diesel prime movers.	B		
(c)	An Air purity/quality test in accordance with National Standards.	B		
Sub Section : B7.3 Cylinders				
(a)	Charging HP cylinders by decanting (cascading) from a bank of HP cylinders	A		
(b)	Charging HP cylinders directly from an HP Compressor	A		

B8 : MAINTENANCE AND REPAIR

Aim : Understand and carry out the User Maintenance of :

(a)	Diving suits	B		
(b)	Personal equipment	B		
(c)	Diver Communication Equipment	B		
(d)	LP and HP compressors and air filters	B		

B9 : **LEGISLATION**

Aim : Understand the National and relevant local Regulations of the Country in which training is being carried out, as they are relevant to SCUBA Diving Operations, by :

	Describing : i. The responsibilities of the Client, Contractor, Supervisor, diver and any other personnel who may be concerned with a diving operation. ii. The conduct of SCUBA diving operations. iii. Planning and Risk Assessment. iv. The composition of diving teams. v. The requirement for divers personal logbooks, operation logs and other relevant documentation. vi. The requirement for a compression chamber. vii. The operation, maintenance and safety requirements for diving plant and equipment. viii. The medical and training requirements for diving personnel.	C		

Note : If no National Standards exist, the School must state the standard which is used and taught during the course, and which must be specified in the Divers Logbook.

IDSA DIVER TRAINING STANDARDS

MODULE C : SURFACE SUPPLIED INSHORE AIR DIVER

IDSA LEVEL 2 - SURFACE SUPPLIED INSHORE AIR DIVER

To obtain the IDSA Level 2 (Surface Supplied Inshore Air Diver) Training Qualification this module **MUST** follow or be combined with Modules A and B.

On successful completion of modules A, B and C a diver may be awarded the IDSA Level 2 Qualification, and will be :

Competent to dive safely both inland & inshore using both open circuit self-contained air breathing equipment and surface supplied air diving equipment to a depth of 30 metres, and have a working knowledge of the following tasks :

- Elementary Rigging
- The Use of Lifting Bags
- Diver Search Techniques
- The use of Power Tools
- Thermal Arc Cutting equipment
- The Use of Hand Tools
- Visual Inspection
- Chamber Operations
- Simple Underwater Construction tasks
- Air Lifts and Jetting equipment

The principles and of the following subjects are also taught, but in-water experience is not mandatory : Bolt Guns, Explosives, Wet Welding and Diving in Polluted Waters.

Notes

1. The Task training will provide the trainee with a general appreciation of the techniques and problems involved in carrying out the specified underwater work. For the diver to be considered a competent worker it will generally be necessary for **further specialist training to be undertaken**.

2. Successful students are competent to dive to the depth shown. They may go deeper with further experience and/or training as assessed by a Diving Contractor and allowed by National Legislation.

3. In order to attend an IDSA Diver Training course a student MUST hold a certificate stating that he has undergone a medical **examination** and been found fit to dive by a doctor authorized to carry out the medical examination of commercial divers. This Certificate MUST be obtained before training commences, and its expiry date must be after the end date of the course.

4. Items marked with a star (*****) and hatched /////////// are also included in Module B, and need not be repeated by a diver holding the IDSA Level 1 qualification.

CONTENTS

C1 : PRACTICAL DIVING

Aim : Demonstrate his competence to dive in Open Water using two different sets of commonly used Surface Supplied Equipment to a maximum depth of 30msw, by :

(a)	Understanding • Standard surface supply safety and operating procedures • Surface decompression procedures	C+		
(b)	Diving safely and competently on air to a depth of 30 metres, having gained the following experience :	A		

Depth in Metres of Sea Water (msw)	Total Bottom Time (Mins)	Minimum Number of Dives	Minimum Bottom Time for any Dive
0 to 9	650	12	30
10 to 19	300	6	20
20 to 30	200	4	20

Notes :

1. Divers must be working or carrying out drills during all dives.
2. Deeper dive times may be counted towards shallow minute requirements.
3. Dry Compression Chamber dives may not be included in these times.
4. At least **80**% of the dives must be carried out in open water.
5. Some students may require more than these minimum times before they can be considered competent.
6. Students who graduate without achieving the bottom times required by IDSA will either be issued with a National Qualification card or a card from the School. They may be issued with an IDSA Qualification card once they have provided evidence for the bottom time they are lacking. This evidence may be either on-the-job experience – fully documented and certified in their Log Book, or successful completion of an appropriate module at an IDSA Approved School.

(c)	Following the procedures necessary to carry out in-water stops for a simulated dive for 25 minutes at 30 metres.	A		
(d)	Following the procedures necessary to carry out surface decompression stops for a simulated dive of 50 minutes at 30 msw, using air and oxygen.	A		
(e)	Being able to use a Full face mask, Bandmask, Demand and Freeflow Helmets.	A		
(f)	Diving in nil visibility.	A		
(g)	Diving in mid water in moderate currents (about 0.5 knots).	A		
(h)	Diving in varying bottom conditions.	A		
(i)	Using the diving suit suitable for the environment i.e. temperature and depth - Including the use of suit inflation.	A		
(j)	Clearing ears on descent as necessary.	A		
(k)	Ascending at the predetermined rate, breathing correctly.	A		
(l)	Entering and leaving the water safely in different situations.	A		
(m)	Dressing and undressing in his/her personal diving equipment.	A		
(n)*	Being familiar with : • The operation of closed and semi-closed circuit breathing equipment using oxygen, enriched air or other gas mixtures. • The safety procedures used, and the potential hazards associated with the use of these techniques during SCUBA operations.	C-		
(o)*	Maintaining a personal Logbook.	A		

C2 : SURFACE PROCEDURES

Aim : Demonstrate his competence to act as a member of the surface team by :

(a)	Assisting a diver to dress and undress in his personal diving equipment.	A		
(b)	Understanding the responsibilities, and carrying out the duties of a Diver's tender/linesman.	A		
(c)	Acting as a Panel Operator.	A		
(d)	Carrying out pre-dive equipment checks.	A		
(e)	Carrying out post-dive equipment checks.	A		
(f)	Inspecting and maintaining personal diving equipment and reporting defects .	A		

C3 : SURFACE DECOMPRESSION TABLES

Aim : Understand the use of Surface Decompression Tables, by :

(a)	Being able to use Surface Decompression Tables, and calculate the decompression stops required for single and multiple dives from the Tables generally used by the Training Organisation.	B		

C4 : AIR CHAMBER OPERATIONS

Aim : Understand the Safety procedures and be able to operate a two compartment Chamber under supervision, by

(a)	Knowing the safety procedures which apply to the operation of a two compartment Chamber.	C		
(b)*	Carrying out a Chamber dive to 40msw and successfully complete a simple comprehension test while at the maximum depth.	A		
(c)	Operating a two compartment chamber during routine diving operations under supervision.	A		

C5 : UNDERWATER EMERGENCIES

Aim : Understand and carry out the procedures necessary to deal with emergencies, both as a diver and a member of the surface team :

Note : Team training drills should include the simulated rescue of an unconscious diver.

Sub Section : C5.1 As a Diver :				
(a)	Being able to shed weights and use Suit Inflation understanding the limitations of these actions and any resulting dangers.	A		
(b)	Being able to carry out the correct remedial action in the event of loss of either his breathing supply or communications, or both	A		
(c)	Understanding the necessary remedial action(s), their limitations and any resulting dangers as a result of a severed or trapped umbilical, or a broken faceplate	C+		
(d)	Understanding the principles of Free Ascent	C+		
Sub Section : C5.2 As the In-Water Stand By Diver :				
(a)	Reaching his Buddy diver in an emergency.	A		
(b)	Carrying out rescue/emergency procedures according to the equipment, environment and the emergency situation.	A		
(c)	Recovering the distressed diver to the diving platform.	A		
Sub Section : C5.3 As the Surface Stand By Diver :				
(a)	Dressing in the appropriate state of readiness, according to the dive site and environmental conditions.	A		
(b)	Entering the water promptly as authorised by the Supervisor.	A		
(c)	Following the umbilical to the distressed diver.	A		
(d)	Carrying out rescue/emergency procedures according to the equipment, environment and the emergency situation.	A		
(e)	Recovering the distressed diver to the diving platform.	A		
Sub Section C5.4 As a member of the Surface Team :-				
(a)	Assisting in the recovery of a distressed diver from the water.	A		
(b)	Entering the water promptly when authorised to assist with recovery.	A		
(c)	Assisting with the removal of clothing and First Aid as may be appropriate.	A		

C6 : COMMUNICATION SYSTEMS

Aim : Use all current diver communication systems as they apply to Surface Supplied Operations safely and efficiently, by sending and receiving :

(a)	Lifeline Signals.	A		
(b)	Hard wire communications as a diver, panel operator and tender.	A		
(c)	Surface Crane Signals.	B		

C7 : UNDERWATER WORK

Aim : Demonstrate his ability to understand and carry out underwater work tasks using tools and equipment currently in use by :

Note In all areas of work the trainee should be aware of statutory testing and examination requirements for lifting equipment – including Safe Working Loads and their significance.

Sub Section : C7.1 Rigging

(a)	Tying the following knots underwater : Reef Knot — Bowline — Clove Hitch Rolling Hitch — Sheet Bend — Round Turn & 2 x ½ hitches	A		

Sub Section : C7.2 Diver Search Methods

(a)	Finding an object using two 2 different types of diver seabed search, one in nil visibility).	A		

Sub Section : 7.3 Visual Inspection Techniques

(a)	Producing a report based on a simple underwater visual inspection, measurement or survey task.	A		

Sub Section : C7.4 The Use of Lifting Bags

(a)	Carrying out a simple task using a lifting bag to move an object weighing at least 400Kgs in water.	A		

Sub Section : C7.5 The Use of Hand Tools

(a)	Complete a range of underwater tasks safely and efficiently using hand tools.	A		

Sub Section : C7.6 Power Tools

(a)	Understanding the use of and safety requirements for pneumatic and hydraulic power tools, the need for pre and post dive checks and user maintenance.	C		
(b)	Complete a range of underwater tasks safely & efficiently using a power tool.	A		
(c)	Complete at least one task at a depth greater than 10msw using a Power Tool.	A		

C7 : UNDERWATER WORK (Continued)				
Sub Section : C7.7 Water and airlifts, Jetting Equipment				
(a)	Understanding the operational and safety procedures, and user maintenance required when using ;: • HP Waterjets, • LP waterjets with & without grit entrainment • Airlifts • Waterlifts • The need for pre and post-dive checks and user maintenance	C		
(b)	Carrying out a simple task using an LP waterjet.	A		
(c)	Carrying out a simple task using an airlift.	A		
Sub Section : C7.8 Bolt Guns				
(a)	Understands the principles of operation, safety procedures for their use	C		
Sub Section : C7.9 Cutting Equipment				
(a)	Understanding : • The principles of operation of thermal oxy-arc cutting equipment and the necessary safety precautions. • The need for pre and post-dive checks and user maintenance.	C+		
(b)	Using thermal arc cutting equipment safely and efficiently to carry out a simple work task underwater.	A		
Sub Section C7.10 : Welding Equipment				
(a)	Understanding : • The principles of operation of underwater dry and wet underwater welding equipment and the necessary safety precautions. • The need for pre and post-dive checks and user maintenance.	C		
Sub Section C7.11 : Underwater Explosives				
(a)	Understanding : • The types of explosives available for underwater use and the various types of firing circuits, and the precautions which should be followed for their safe handling and use. • The operational uses of explosives underwater.	C-		

C7 : UNDERWATER WORK (Continued)				
Sub Section : C7.12 Underwater Construction Techniques				
(a)	Understanding : • The principles of construction methods used underwater including concreting, use of formwork and casting frames (shuttering), grouting and sand bagging. • The interpretation of engineering drawings relating to simple underwater construction tasks.	C		
(b)	Being able to work as a diver in a team engaged on a simple underwater construction task.	A		
Sub Section C7.13 : Polluted Waters				
(a)	Understands the dangers of diving in polluted waters and the procedures required to combat them.	C+		

C8 : **PLANT & EQUIPMENT**				
Aim :	Understand the function and operation of the Surface Supplied Equipment and of low and high pressure compressors, and be able to charge all types of diving cylinder either directly from a compressor or from a High Pressure air bank (Cascade system). by :			
Sub Section C8.1 : Surface Supplied Equipment				
(a)	Explaining the function and operation of current Surface Supplied Helmets and Masks, Diving Panels and other equipment associated with a Surface Supplied System.	B		
Sub Section : C8.2 Low and High Pressure compressors				
(a)*	Carrying out pre-dive checks and starting procedures with either electrical or Diesel prime movers.	B		
(b)*	Carrying out post-dive checks and stopping procedures with either electrical or Diesel prime movers.	B		
(c)*	Carrying out an air purity/quality test in accordance with National Standards.	B		
Sub Section C8.3 : Cylinders				
(a)*	Decanting from a bank of HP cylinders.	A		
(b)*	Directly from an HP Compressor.	A		
Sub section C8.4 : Surface Supplied Systems				
(a)	Explaining the layout of a currently used Surface Supplied System and the function and operation of it's components, and the safety features associated with it.	C		

C9 : MAINTENANCE AND REPAIR

Aim ; Carry out User Maintenance on the following items of equipment :

(a)	Surface Supply Panels.	B		
(b)	Demand and Free Flow Helmets.	B		
(c)	2 Compartment Air Chamber.	B		
(d)	Umbilicals.	B		
(e*)	Diver Communication Equipment.	B		
(f)*	Is able to carry out User Maintenance on Diving suits.	B		
(g)*	Is able to carry out user maintenance of LP and HP compressors and air filters.	B		

C10 : LEGISLATION

Aim : Understand the National and relevant local Regulations of the Country in which training is being carried out, as they are relevant to Surface Supplied Diving Operations, by :

	Describing : i. The responsibilities of the Client, Contractor, Supervisor, diver and any other personnel who may be concerned with a diving operation. ii. The conduct of Surface Supplied diving operations. iii. Planning and Risk Assessment. iv. The composition of diving teams. v. The requirement for divers personal logbooks, operation logs and other relevant documentation. vi. The requirement for a compression chamber. vii. The operation, maintenance and safety requirements for diving plant and equipment. viii. The medical and training requirements for diving personnel.	C		

NOTE **:** If no National Standards exist, the School must specify the standard of another Country which is used and taught during the course, and which must be specified in the Divers Logbook.

IDSA DIVER TRAINING STANDARDS

MODULE D : SURFACE SUPPLIED OFSHORE AIR DIVER

IDSA LEVEL 3 - SURFACE SUPPLIED OFFSHORE AIR DIVER

To obtain the IDSA Level 3 (Surface Supplied Offshore Air Diver) Training Qualification this module **MUST** follow or be combined with Modules A, B & C.

On successful completion of modules A, B, C and D a diver may be awarded the IDSA Level 3 Qualification, and will be :

Competent to dive inland, inshore & offshore using open circuit self-contained air breathing equipment, surface orientated air diving equipment, and from an open bell to a depth of 50 metres. He will be able to use a hot-water suit, and will have a working knowledge of the following tasks :

- Elementary Rigging
- The Use of Lifting Bags
- Diver Search Techniques
- The use of Power Tools,
- Thermal Arc Cutting equipment
- The Use of Hand Tools
- Visual Inspection
- Chamber Operations
- Simple Underwater Construction tasks
- Air Lifts and Jetting equipment

The principles of the following subjects are also taught, but in-water experience is not mandatory : Bolt Guns, Explosives, Wet Welding and Diving in Polluted Waters.

Notes

1. The Task training will provide the trainee with a general appreciation of the techniques and problems involved in carrying out the specified underwater work. For the diver to be considered a competent worker it will generally be necessary for **further specialist training to be undertaken**.

2. Successful students are competent to dive to the depth shown. They may go deeper with further experience and/or training as assessed by a Diving Contractor and allowed by National Legislation

3. In order to attend an IDSA Diver Training course a student MUST hold a certificate stating that he has undergone a medical **examination** and been found fit to dive by a doctor authorized to carry out the medical examination of commercial divers. This Certificate MUST be obtained before training commences, and its expiry date must be after the end date of the course.

CONTENTS

D1 : PRACTICAL DIVING

Aim : Demonstrate his competence to dive

1. From an Open or Wet Bell to a maximum depth of 20m using current surface supplied equipment.
2. To a maximum depth of 50msw using current surface supplied equipment.

By :

Sub Section : D1.1 Open or Wet Bell

(a)	Understanding Open Bell safety and operating procedures.	C+			
(b)	Diving safely and competently on air to a depth of 50msw, having gained the following experience :	A			

Depth in Metres of Sea water (msw)	Total Bottom Time (Mins)	Minimum Number of Dives	Minimum Bottom Time for any Dive
0 to 9	90	3	30
10 to 20	60	2	30

Notes :
1. Divers must be working or carrying out drills during all dives.
2. Deeper dive times may be counted towards shallow minute requirements.
3. All dives must be carried out in open water.
4. Some students may require more than these minimum times before they can be considered competent.
5. Students who graduate without achieving the bottom times required by IDSA will either be issued with a National Qualification card or a card from the School. They may be issued with an IDSA Qualification card once they have provided evidence for the bottom time they are lacking. This evidence may be either on-the-job experience – fully documented and certified in their Log Book, or successful completion of an appropriate module at an IDSA Approved School.

(c)	Act as a Divers Attendant (Bellman) in the Bell during an Open Bell diving operation.	A		
(d)	Act as the Surface Orientated Stand By Diver during an Open Bell diving operation.	A		

Sub Section : D1.2 Deep Surface Supply

(a)	Understanding the limitations of diving to 50 metres and the additional procedures required.	C+			
(b)	Demonstrating his competence to dive in surface orientated equipment by diving safely and competently on air to a maximum depth of 50 metres, having gained the following experience :	A			

Depth in Metres of Sea water (msw)	Total Bottom Time (Mins)	Minimum Number of Dives	Minimum Bottom for any Dive
30 to 39	150	5	20
40 to 50	160	5	15

(c)	Carry out one dive in excess of 35 metres using a power tool.	A		
	Notes : As in Section D1.1(b) above.			

D1	**PRACTICAL DIVING** (Continued)			
Sub Section : D1.3 Hot Water Systems				
(a)	Understand the operating and safety procedures necessary for diving in a Hot Water suit.	C+		
(b)	Dive safely and competently in a Hot water suit :	A		

Depth in Metres of Sea water (msw)	Total Bottom Time (Mins)	Minimum Number of Dives	Minimum Bottom Time for any Dive (Mins)
0 to 20	90	3	30

Note :

The Hot Water suit training may take place during either surface 0rientated or Wet Bell Dives. Each diver must make at least 3 dives of minimum duration 30 minutes using a Hot Water suit.

(c)	Act as the panel operator during a Hot Water suit diving operation	B		
Sub Section : D1.4 Diving from Dynamically Positioned Vessels .				
(a)	Understand the hazards associated with and the precautions to be taken when diving from a dynamically positioned Diving Support Vessel.	C		

D2 : SURFACE PROCEDURES

Aim : Demonstrate his competence to act as a member of the surface team by :

Sub Section : D2.1 Open or Wet bell System				
(a)	Acting as the Panel operator during an Open Bell operation.	A		
(b)	Carrying out Pre and Post Dive Checks on an Open Bell System.	A		
(c)	Understanding : The use of hydraulic winches, air motors etc used in deploying an Open Bell.	B		
Sub Section : D2.2 Hot Water System				
(a)	Acting as the Panel operator during a Hot Water Dive.	A		
(a)	Carrying out Pre and Post Dive Checks on a Hot Water System.	A		

D3 : UNDERWATER EMERGENCIES

Aim : Take the appropriate action in the event of an emergency or equipment failure as a member of the diving team (except the Supervisor), by :

Sub Section : D3.1 Diver Rescue

Aim : Carry out the simulated rescue of an unconscious diver from an open bell including emergency first aid in the bell.

(a)	As a diver.	A		
(b)	As the divers attendant in the Bell (Bellman).	A		
(c)	As the panel operator.	A		
(d)	As the surface stand by diver.	A		

Sub Section : D3.2 Equipment Failure

Aim : Complete drills which demonstrate the ability to deal with the following failures :

(a)	Loss of Communications.	A	
(b)	Loss of Breathing Supply.	A	
(c)	Loss of both Communications and Breathing Supply.	A	
(d)	Loss of power to the Bell lifting system.	A	

D4 : PLANT AND EQUIPMENT

Aim : Understand the function and operation of open bell and hot water systems, by :

Sub Section : D4.1 Open Bell System

	Explaining the layout of a currently used open bell system and the function and operation of it's components.	C		

Sub Section : D4.2 Hot Water System

	Explaining the layout of a currently used hot water system and the function and operation of it's components.	C		

D5 : LEGISLATION

Aim : Understand the National and relevant local Regulations of the Country in which training is being carried out, as they are relevant to Deep Offshore & Inshore Surface Supplied Diving Operations, by :

	Describing : i. The responsibilities of the Client, Contractor, Supervisor, diver and any other personnel who may be concerned with a diving operation. ii. The conduct of Deep Surface Supplied diving operations. iii. Planning and Risk Assessment. iv. The composition of diving teams. v. The requirement for divers personal logbooks, operation logs and other relevant documentation. vi. The requirement for a compression chamber. vii. The operation, maintenance and safety requirements for diving plant and equipment. viii. The medical and training requirements for diving personnel.	C		

NOTE **:** If no National Standards exist, the School must specify the standard of another Country which is used and taught during the course, and which must be specified in the Divers Logbook.

IDSA DIVER TRAINING STANDARDS

MODULE E : CLOSED BELL/MIXED GAS

IDSA LEVEL 4 - CLOSED BELL/MIXED GAS DIVER

To obtain the IDSA Level 4 (Closed Bell/Mixed Gas Diver) Training Qualification this module **MUST** follow or be combined with Modules A, C and D.

On successful completion of modules A, C, D and E a diver may be awarded the IDSA Level 4 Qualification, and will be competent to :

Take part in closed bell operations, acting as Bellman and Diver, using the appropriate breathing gas mixture to a depth of 100m.

ENTRY REQUIREMENTS

1. Hold the IDSA Level 3 qualification.

2. Since gaining the IDSA Level 3 qualification or equivalent the diver must have completed at least 50 dives for a minimum bottom time of 50 hours.

Notes

a. All of the dives must be conducted in surface supplied equipment and in open water, i.e. not in compression chambers, pools or tanks.

b. No dive to 6 metres or shallower is to count either as one of the dives or towards the total dive time.

c. A minimum of 10 of the dives to have required a minimum decompression time of 15 minutes. Only decompression as required by the decompression table being used is to be counted. i.e. non mandatory safety stops are not to be counted as part of the 15 minutes.

d. Only bottom time is to be counted towards the 50 hours, i.e. ascent and decompression stop times are not to be included.

e. No dive shorter than 15 minutes bottom time is to be counted.

f. For a dive where the bottom time is longer than 2 hours only 2 hours is to be counted.

CONTENTS

E1 : DIVING THEORY - PROPERTIES OF LIQUIDS AND GASES

Aim : Explain the practical application of the following to mixed gas bell diving operations ;

(a)	• the relationship between pressure and volume (Boyle's Law) • the relationship between volume and temperature (Charles' Law) • partial pressure of gases (Dalton's Law) • solubility of gases (Henry's Law) • factors affecting buoyancy (Archimedes' Principle)	B		

E2 : DECK C0MPRESSION CHAMBER OPERATIONS

Aim : Understand the function, procedures and safety checks, required to operate a Deck Decompression Chamber, by :

Sub Section : E2.1 Built-in breathing and over board gas dump systems				
(a)	Explaining the working of the systems.	B		
(b)	Carrying out all procedures to ensure correct function and user maintenance.	A		
Sub Section : E2.2 Gas systems to the chamber				
(a)	Explaining the purpose and operation of the system including all component parts.	B		
(b)	Carrying out user maintenance.	A		
Sub Section : E2.3 Gas monitoring				
(a)	Explaining the operational control of gas (quality) monitoring on receipt and in use.	B		
(b)	Explaining the principles and use of carbon dioxide and oxygen monitors.	B		
(c)	Accurately calibrating monitors and interpret readings under working conditions.	A		
(d)	Explaining the principles and operation of environmental control units in relation to compression chambers.	B		
(e)	Explaining the methods of making up different gas mixtures.	B		
(f)	Analysing pure and mixed gases.	B		
Sub Section : E2.4 Carbon Dioxide absorption				
(a)	Explaining the principles of CO2 scrubber systems	B		
(b)	Checking the function of the system and perform user maintenance	A		

E2 DECK C0MPRESSION CHAMBER OPERATIONS (Continued)				
Sub Section : E2.5 Impurities in gas systems				
(a)	Explaining the effects of impurities in : • the environment of a diving system. • a diver's breather gas.	B		
(b)	Describing the possible points of contamination.	B		
Sub Section : E2.6 Oxygen cleanliness				
(a)	Explaining the effects of high pressure oxygen supply in contact with combustible material.	B		
(b)	Explaining the procedures necessary to prevent accidental contamination of oxygen.	B		
(c)	Explaining the effect of oil and grease in high pressure oxygen systems.	A		
Sub Section : E2.7 Cleaning of gas systems				
(a)	Explaining the need for strict observance of gas handling rules;	B		
(b)	Explaining the procedures and correct methods of cleaning to ensure that gas supply is not contaminated.	B		
Sub Section : E2.8 Operate the built-in breathing system (BIBS)				
(a)	Selecting the correct gas for the particular operation.	A		
(b)	Supplying the gas from the control panel to the built-in breathing system.	B		
(c)	Explaining the need for and the operation of the back pressure regulator protection.	B		
Sub Section : E2.9 Monitor chamber operations				
(a)	Monitoring the chamber for depth, temperature, humidity, oxygen and carbon dioxide levels during the diving operation.	B		
(b)	Explaining the normal maximum and minimum permissible limits of oxygen and carbon dioxide.	C		
Sub Section : E2.10 Fire fighting equipment				
(a)	Explaining the use of equipment required for fire fighting in a bell diving system and the necessary pre- and post-dive checks and safety precautions.	B		
(b)	Carrying out a chamber evacuation and isolation procedure and explain the role of the surface team.	A		
Sub Section : E2.11 Safety Checks				
(a)	Explaining the need for pre - and post-dive checks and user maintenance of a compression chamber.	C		
(b)	Carrying out for pre and post-dive checks and user maintenance of a compression chamber.	B		

E2 DECK C0MPRESSION CHAMBER OPERATIONS (Continued)				
Sub Section ; E2.12 Sanitary arrangements				
(a)	Explaining the importance of personal hygiene especially under hyperbaric conditions.	B		
(b)	Explaining the working and the necessary safety features of a hyperbaric sanitary system; operate it under working conditions.	A		
Sub Section : E2.13 Medical lock				
(a)	Explaining the operation and safety features of a medical lock.	A		
(b)	Operating a medical lock on a pressurised diving system.	A		
Sub Section : E2.14 Communications				
(a)	Operating primary and standby communications systems using a helium unscrambler;	A		
(b)	Carrying out emergency communication procedures.	A		
Sub Section : E2.15 Emergency procedures				
	Explaining the possible emergencies which may occur in chambers and the procedures to be followed	A		
Sub Section : E2.16 Compression and Decompression				
(a)	Operating a diving system under supervision; explain abort procedures and when they would be used.	B		
(b)	Following compression and decompression schedules under supervision.	B		
Sub Section : E2.17 Dive Log				
(a)	Maintaining an accurate record throughout bounce and saturation dives.	A		
Sub section : E2.18 Surface team				
(a)	Acting as an effective member of a surface support team.	A		
Sub Section : E2.19 Full diving operation				
(a)	Act as an effective member of a diving team.	A		
Sub Section : E2.20 Diving Tables				
	Understand the use of Mixed Gas Diving Tables and Therapeutic Schedules.	B		

E3 BELL DIVING OPERATIONS

Aim : Act safely and competently both as a Diver, Bellman and Rescue diver during Closed Bell/Mixed Gas Operations, by :

Sub Section : E3.1 Familiarisation Training

(a)	Completing the following Training :- 1. This training must be given at shallow depths. The instructor must be in the bell until satisfied that the trainee can act safely and competently as a bellman and as a lockout diver. The trainee must complete the following minimum number of training dives in water 5-10 msw deep : • 24 bell lockouts as a diver. • 24 bell runs acting as bellman. • 5 simulated rescues of an incapacitated diver. • 12 bell runs from deck chamber to deck chamber with full transfer under pressure. 2. The first two bell lockouts at least should be completed with the instructor in the bell and may be made from 'deck to deck' without 'transfer under pressure' (TUP). All subsequent bell runs should be made using full TUP procedures. 3. A simulated simultaneous gas loss and communication failure.	A		

Sub Section : E3.2 Practical Diving

(a)	A diver must demonstrate his competence to dive in open water as a diver, rescue diver and bellman by completing the following dives : 1. Four chamber pressurisation and TUP checks. 2. Four pre-dive bell checks. 3. Safely and competently three bell bounce dives to depths of 55, 75 and 100 msw respectively. 4. A saturation dive from a living depth greater than 50 metres from which the student must complete two bell runs to a depth greater than 50 msw. The lockout for these bell runs should be at least 15 minutes for each diver on each occasion. (See Note). A simulated incapacitated diver rescue should be made during one lockout. **Notes** 1 The first 2 bell lockouts at least should be completed with the Instructor in the bell and may be made from 'deck to deck' without 'transfer under pressure ' (TUP). All subsequent bell runs should be made using full TUP procedures. 2 The trainee diver may only make one lockout from the bell at any one depth during each bell run. However, the diver and bellman may change round so that each carries out one lockout at a particular depth. Further lockouts may be made on the same bell run provided the depth of the bell is changed and the full bottom door routine completed.	A		

E3 BELL DIVING OPERATIONS (Continued)				
Sub Section : E3.3 Hyperbaric monitors				
(a)	Explaining the principles of carbon dioxide and oxygen analysers.	B		
(b)	Using carbon dioxide and oxygen analysers under working conditions.	A		
Sub Section : E3.4 Bell Gas Systems				
(a)	Explaining the purpose and operation of the systems and all component parts.	B		
(b)	Putting diving gases on line to the diving bell and the diving breathing apparatus.	A		
Sub Section : E3.5 Bell Scrubber System				
(a)	Explaining the need for CO_2 extraction and how the scrubber system works;	B		
(b)	Carrying out canister replacement and user maintenance.	A		
Sub Section : E3.6 Heating Systems				
(a)	Explaining the need for and operation of heating systems.	B		
(b)	Explaining the action to be taken if a failure occurs in the heating system.	A		
Sub Section : E3.7 Communications				
(a)	Using main and back-up through water communications systems during bounce and saturation diving operations.	A		
Sub Section : E3.8 Emergency recovery of bell				
(a)	Explaining the various (secondary) recovery methods in common use.	A		
(b)	Explaining the purpose and methods of bell ballasting and ballast release systems.	A		
(c)	Explaining the procedures for slipping ballast in emergencies and the associated dangers.	A		
Sub Section : E3.9 The Bell Handling System				
(a)	Describing the working of the handling system and operate it.	A		
(b)	Explaining the safety precautions and back-up facilities available in case of main power system failure.	A		
(c)	Explaining and operating bell-mating interlock systems including procedures for connecting/disconnecting the mating trunk.	A		

E3 BELL DIVING OPERATIONS (Continued)				
Sub Section : E3.10 Safety Checks				
(a)	Explaining the need for pre and post-dive checks of the diving bell using a checklist.	B		
(b)	Carrying out pre and post-dive checks of the diving bell using a checklist.	A		
(d)	Explaining the action to be taken by the divers in a lost bell and by the surface team.	C		
(e)	Explaining how a wet transfer is achieved in cases where a bell is lost.	C		
Sub Section : E3.11 Emergency Routines				
(a)	Demonstrating emergency routines including the rescue of an incapacitated diver and the use of BIBS in a contaminated atmosphere.	A		
(b)	Explaining the preparation and operation of a hyperbaric lifeboat and evacuation by a diving bell.	C		
(c)	Explaining how and when a bell might be lost, the relocation procedure to be followed and various methods of bell recovery.	C		
Sub Section : E3.12 Breathing gas recovery systems				
(a)	Explaining and being familiar with the principles of such systems, their limitations and the action to be taken in the event of equipment failure.	B		
(b)	Being familiar with the potential hazards of such equipment including it's use with oxy-helium gas mixtures.	C		
Sub Section : E3.13 Survival Equipment				
(a)	Explaining the principles of and demonstrate the use of bell survival equipment.	C		
(b)	Practicing donning survival equipment.	B		
Sub Section : E3.14 Dynamically positioned vessel				
(a)	Explaining the principles of operation and potential hazards associated with diving from dynamically positioned diving support vessels.	B		
Sub Section : E3.15 Surface Team				
(a)	Acting as an effective member of the surface team in support of bell diving and transfer under pressure procedures.	A		

E4 DIVING MEDICINE

Aim : Understand the additional effects of diving in excess of 50 meters using mixed gas, by :

Sub Section : E4.1 Diving related illnesses				
(a**)**	Understanding the physiology of HNS and HPNS.	C		
(b)	Knowing the signs and symptoms of Decompression Illness in saturation.	C		
Sub Section : E4.2 First Aid during closed bell operations				
(a)	Understanding the administration of First Aid in Bell and Chamber.	B		

E5 : LEGISLATION

Aim : Understand the National and relevant local Regulations of the Country in which training is being carried out, as they are relevant to Closed bell/Mixed Gas Diving Operations, by :

	Describing : i. The responsibilities of the Client, Contractor, Supervisor, diver and any other personnel who may be concerned with a diving operation. ii. The conduct of Surface Supplied diving operations. iii. Planning and Risk Assessment. iv. The composition of diving teams. v. The requirement for divers personal logbooks, operation logs and other relevant documentation vi. The requirement for a compression chamber. vii. The operation, maintenance and safety requirements for diving plant and equipment. viii. The medical and training requirements for diving personnel.	C		

NOTE **:** If no National Standards exist, the School must specify the standard of another Country which is used and taught during the course, and which must be specified in the Divers Logbook.

APPENDIX 1 : IDSA TABLE OF EQUIVALENT DIVER TRAINING STANDARDS

References :
1. ADCI Consensus Standards – 5th Edition
2. IDSA Diver Training Standards - Revision 4 October 2009
2. HSE List of approved qualifications - April 1999
4 IMCA International Code of Practice for Offshore Diving - Rev 1 October 2007

	IDSA Level 1	**IDSA Level 2**	**IDSA Level 3**	**IDSA Level 4**
	COMMERCIALSCUBA	Surface Supplied Inshore Air Diver	Surface Supplied Offshore Air Diver	**Closed Bell**
Depth Competence During Training	**30m**	**30m**	**50m**	**100m**
Australia (Note 4)	Part 1		Part 3	Part 4
Canada	Unrestricted SCUBA	Unrestricted SCUBA **Plus** Restricted Surface Supplied Diver	• Surface Supplied Mixed Gas Diver to 70m • Unrestricted Surface Supplied Diver to 50m **+** Unrestricted SCUBA	Bell Diver
Belgium		OOW - SYNTRA or OTS - CFPME		
Denmark	National SCUBA Diver		Surface Supplied Diver to 50m	
Finland	National SCUBA Diver	National Surface Supply Diver – 50m		
France	Class 1 Mention A or B	Class 1 Mention A	Class 2 Mention A	Class 3 Mention A
Holland	Certificate A		Certificate B	
Italy	OSS		OTS.BF	OTS.AF
New Zealand (Note 4)			Part 1	Part 2
Norway			NPD Surface Diver	NPD Bell Diver
South Africa	Class 4	Class 3	Class 2	Class 1
Sweden	Diver Certificate A	Diver Certificate B	Diver Certificate C Wet Bell 60m	
UK – Pre April 1998	HSE Part 4	HSE Part 3 **Plus** Task Training module	HSE Part 1	HSE Part 2
UK – Post April 1998 (Note 3)	HSE SCUBA	HSE SCUBA **Plus** HSE Surface Supply **Plus** Tools Training module.	HSE SCUBA **Plus** HSE Surface Supply **Plus** Tools Training module **Plus** Surface Supplied Top Up	HSE Closed Bell
USA (Note 2)		American National Standard for Divers - ANSI/ACDE012009 (USA)		

Notes **:**

1. Generally the high standards cover all those below, i.e. the award of IDSA Level 3 is conditional upon the diver having qualified Levels 1 & 2 previously.
2. Currently the Training Programmes of the members of the Association of Commercial Diving Educators (ACDE) meet the ANSI Standards, and students are eligible for IDSA certification once they have achieved the necessary authenticated in-water experience.
3. The Task Training Module must cover the requirements for Task Training contained in the IDSA Level 2 Standard.
4. Subject to confirmation

APPENDIX 2 : ROPE OR LIFELINE SIGNALS

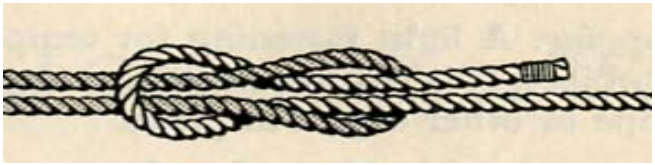
UNDER REVISION

APPENDIX 3 : KNOTS

The purpose of this appendix is to clarify the confusion which might arise because the names given to knots vary considerably from Country to Country, and often within a Country.

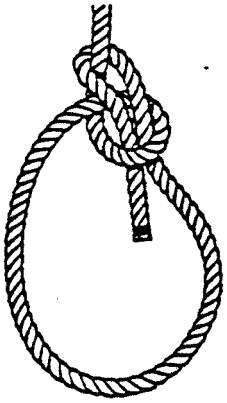
These illustrations show the knots which are considered mandatory in Module A, Section A9.1 (a).

Reef Knot



This knot is used for joining two ropes of approximately equal size. It is not liable to come undone when there is no strain on the knot, but it is not reliable if the ropes are of unequal size or very slippery.

Bowline

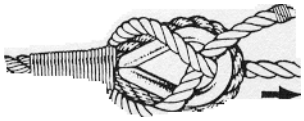


This is the most useful knot for making a temporary eye in ropes of all sizes.

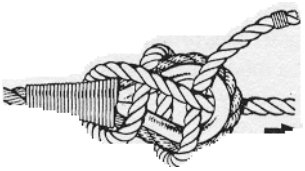
Sheet Bends

I

A Sheet Bend is used to bend a small rope to a larger one, and a Double Sheet Bend is used when greater security is required e.g. when a rope is wet or greasy.



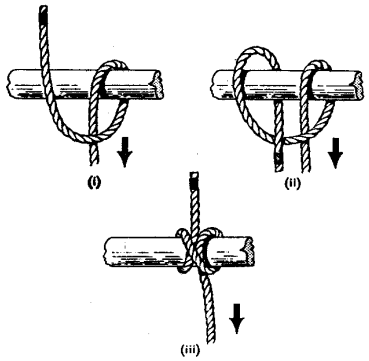
SINGLE



DOUBLE

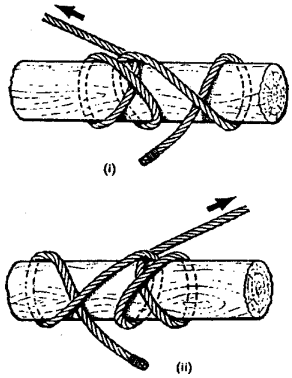
APPENDIX 3 : KNOTS

Clove Hitch



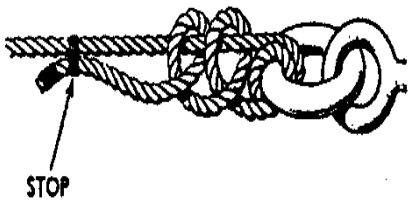
A clove hitch is used to secure a rope to a spar, rail or similar fitting, also for many other purposes. It will slip along the spar or rail if subjected to a sideways pull. It can be made with the end or with the bight of the rope.

Rolling Hitch



This hitch is used for securing a rope to a spar when the strain is expected to be from one side or the other.

Round Turn & Two Half Hitches



This combination can be used to secure a heavy load to a spar, ring or shackle such as the buoy shackle of a mooring. It will never jam and can be cast off quickly. It also has the considerable advantage that it can be undone when it is under stress. The end should be stopped to the standing part

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