Update on the Project to Revise the IMCA Bell Diving Supervisor (BDS) Examination

The development of an IMCA Bell Diving Supervisor examination consists of three distinct phases:

1. attending and passing one of IMCA's trainee bell diver supervisor training programmes;
2. developing and learning the necessary skills undertaken during the practical phase of the supervisor training under the auspices of a qualified IMCA supervisor; and
3. sitting and passing the IMCA Bell Diving supervisor's exam

IMCA would like to advise its members that as part of ongoing improvements to the IMCA examination system, the project to develop a question bank and revise the IMCA Bell Diving Supervisor (BDS) examination is now complete. The revised examination now consists of four sections:

- Physics;
- Physiology;
- Chamber Practices;
- Bell Diving Operations.

The BDS exam is based around the content of the material contained within IMCA's guidance documents. The most useful document for study is Guidance for Diving Supervisors (IMCA D 022); especially Chapter 2, Diving Physics. However, it is absolutely essential that candidates for this exam have a sound working knowledge of all the relevant IMCA and DMAC guidance documentation. It also should be pointed out that several questions within the diving and chamber practices section of the exam are based on the knowledge and experience gained whilst working as a supervisor.

Documents of particular relevance are:

- Guidelines for oxy-arc cutting (IMCA D 003)
- Diving operations in the vicinity of pipelines (IMCA D 006)
- Diving operations from vessels operating in dynamically positioned mode (IMCA D 010)
- IMCA international code of practice for offshore diving (IMCA D 014)
- Open parachute type underwater air lift bags (IMCA D 016)
- Lost bell survival (IMCA D 017)
- Diving in contaminated waters (IMCA D 021)
- Guidance for diving supervisors (IMCA D 022)
- DESIGN for surface orientated (air) diving systems (IMCA D 023)
- DESIGN for saturation (bell) diving systems (IMCA D 024)
- Installation based diving operations and the evacuation of divers from installations (IMCA D 025)
- Guidance on the use of chain lever hoists in the offshore subsea environment (IMCA D 028)
- Surface supplied mixed gas diving operations (IMCA D 030)
- Cross-hauling of bells (IMCA D 032)
- Norway/UK regulatory guidance on offshore diving (NURGOD) (IMCA D 034)
- Neurological assessment of a diver (IMCA D 036)

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- DESIGN for surface supplied mixed gas diving systems (IMCA D 037)
- Use of battery operated equipment in hyperbaric conditions (IMCA D 041)
- Diver and ROV based concrete mattress handling, deployment, installation, repositioning and decommissioning (IMCA D 042)
- Code of practice for the safe use of electricity under water (IMCA D 045)
- Guidance on surface supplied diving operations using nitrox (IMCA D 048)
- Guidance on hyperbaric evacuation systems (IMCA D 052)
- Remotely operated vehicle intervention during diving operations (IMCA D 054)
- Diver attachment to structures by means of a weak link (IMCA D 058)
- Guidelines for lifting operations (IMCA D 060)
- Guidance on health, fitness and medical issues in diving operations (IMCA D 061)
- Guidelines for the design and operation of dynamically positioned vessels (IMCA M 103)
- Aide mémoire for recording and transmission of medical data to shore (DMAC 01)
- Recommendations for flying after diving (DMAC 07)
- Safe diving distance from seismic surveying operations (DMAC12)
- Medical equipment to be held at the site of an offshore diving operation (DMAC 15)
- Proximity to a recompression chamber after surfacing (DMAC 22)
- Saturation diving chamber hygiene (DMAC 26)
- Provision of emergency medical care for divers in saturation (DMAC 28)

It is also advisable for candidates to have a working knowledge of the contents of the latest revision of the US Navy Diving Manual.

Candidates who do not prepare adequately will find it a challenge to pass the newly revised BDS examination, in particular the physics, physiology and bell diving operations sections.

The revised exam has been in use since the middle of April 2019.

Failure

The IMCA examination resit protocol for all exams has been changed. The posts of Air/Bell Diving Supervisors (ADS/BDS) and Lift Support Technician (LST) are safety critical and it is essential that candidates for these positions are able to demonstrate convincingly that they have the necessary aptitude, knowledge and skills to fulfil the roles. Candidates will only be allowed to sit the IMCA Diving Supervisor examinations three times: an initial exam and then two subsequent resits.

The following exam resit protocol will apply:

- Should a candidate be unsuccessful on the first occasion, he/she will be allowed an initial resit which can be booked 30-days after sitting the first exam. The delay is to allow the candidate sufficient time to study before resitting the exam.
- Should the candidate be unsuccessful following the first resit, he/she will not be permitted to re-sit the exam for a second time until a period of one-year elapses. This is to ensure that the candidate has plenty of time to improve his/her skills, and to learn and master all the required information before trying the exam again. In addition, in order to book for the second resit exam, candidates will also be required to provide a certificate of completion from an IMCA-approved trainee Bell Diving Supervisor (BDS) training programme undertaken within the previous year.
- Candidates who fail all three attempts will be required to wait for a period of at least two years from the date of the last failure to allow them to gain more experience before being allowed to re-enter the scheme.

Once the two-year waiting period has elapsed, candidates will then be required to re-take the full supervisor or LST training programme again, as detailed in the current version of IMCA offshore diving supervisor and life support technician certification schemes (IMCA D 013), including re-attending an IMCA-approved trainee Diving Supervisor/assistant Life Support Technician (ALST) training programme and fulfilling all the practical training requirements, before reapplying in full again for the examination.

Sample IMCA Bell Diving Supervisor exam questions have been included as Appendix 1 to this note for reference.

Sample IMCA Bell Diving Supervisor Exam Questions

Physics

Q: You have to treat a bend in a diver at 95 msw and will complete 4 cycles of 30 minutes duration, working on a consumption of 40 litres per minute measured at the surface, you will use:

a) 4.8 m3

b) 5.6 m3

c) 50.4 m3

d) 456.0 m3

Q: To administer a treatment gas to a diver at 600 fsw with a 2.5 PPO2 requires:

a) 10%

b) 13%

c) 17%

d) 20%

Physiology

Q: With which one of the following can vestibular decompression be associated?

a) Changing from breathing air to breathing mixed gas

b) Changing from breathing mixed gas to breathing air

c) Nitrox saturation

d) Prolonged exertion on low PPO2 mixes

Q: A diver in a chamber shows signs of respiratory distress which worsen with decompression. Recompression affords him immediate relief and this exact pattern is repeated on several occasions. From which one of the following is he suffering?

a) Embolism

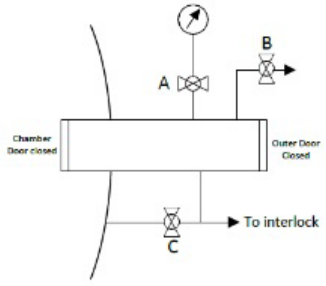
b) Lung oedema

c) Pneumothorax

d) Type I decompression sickness

Chamber Practices

Q: Which is the correct operating procedure for taking the medical lock to the surface, shown below (valves are shown closed)?



a) Open A, close C, open B

b) Open C, close A, open B

c) Open B, close C, open A

d) Open B, open C, close A

Q: You have been asked by the LSS to connect a new gas supply to the chamber control panel. What is the most important precaution to take?

a) Open all valves slowly

b) Check that the gas has been analysed

c) Check pressure

d) Check analysers have been calibrated

Bell Diving Operations

Q: What is the recommended minimum breaking load of a bell wince wire?

a) 1.1 times the safe working load

b) 1.5 times the safe working load

c) 5 times the safe working load

d) 8 times the safe working load

Q: In accordance with IMCA guidelines, which one of the following is the Common Emergency Reply Frequency on which a bell emergency location transponder operates?

a) 33.5 kHz

b) 34.5 kHz

c) 37.5 kHz

d) 42.5 kHz

Q: When working in the vicinity of an impressed current anode system operating at 24 volts DC:

a) A line insulation monitor should be fitted

b) The diver may go as close as he likes to the system when the power is on

c) The diver should remain at a minimum distance of 10 feet from the system

d) The power should be off

Q: What are the main requirements for a digital gauge?

a) It must read in feet of seawater, it must display the reading to one decimal point, it must be24v

b) It must read in metres of seawater, it must display the reading to one decimal point, it must be large and clear enough to be read easily and accurately

c) It must be large and clear enough to be read easily and accurately, it must display clearly on the unit whether it reads in feet or metres, it must be 24v

d) It must display clearly on the unit whether it reads in feet or metres, it must be large and clear enough to be read easily and accurately, it must display the reading to one decimal point