

IMCA Air Diving Supervisor Examination – Recommended Study Material

IMCA is frequently asked for a study guide to help candidates preparing to sit the IMCA Air Diving Supervisor certification examination.

As part of the recent revision of the IMCA exam system, all IMCA Supervisor and LST exams are now generated from a question bank, ensuring that no two exams are the same. In addition, the exam is now delivered electronically at a nominated exam centre with candidates only viewing one exam question at time. It would therefore be advantageous for anyone planning to sit the ADS exam to be comfortable with taking online tests and using online calculators. Where practicable, it would be useful for ADS candidates to practice taking online quizzes/tests and using online calculators before sitting the IMCA examination.

The Exam

It is made up of three sections as follows:

1. Diving Physics, 25 Questions
2. Diving Physiology, 25 Questions
3. Working Practices, 50 Questions

The IMCA ADS exam is primarily based around the content of the material contained in IMCA's guidance documents. A core text that should be used for study is [Guidance for diving supervisors](#) (IMCA D 022). It is essential that supervisor candidates are familiar with all the relevant material this document contains.

Chapter 2 *Diving Physics* is of particular importance. It contains a series of self-test physics questions. Candidates should be confident answering each of the relevant questions. Failure to do so means it is unlikely that candidates will pass the physics section of the final exam.

Study Guide

In preparation for the exam, in addition to [IMCA D 022](#), it is essential that candidates for the ADS exam have a sound working knowledge of all IMCA and DMAC guidance, and in particular the following documents:

- ♦ [Guidelines for oxy-arc cutting](#) (IMCA D 003)
- ♦ [Diving operations in the vicinity of pipelines](#) (IMCA D 006)
- ♦ [Overboard scaffolding operations and their effect on diving safety](#) (IMCA D 007)
- ♦ [Diving operations from vessels operating in dynamically positioned mode](#) (IMCA D 010)
- ♦ [IMCA international code of practice for offshore diving](#) (IMCA D 014)
- ♦ [Mobile/portable/daughtercraft surface supplied systems](#) (IMCA D 015)
- ♦ [Open parachute type underwater air lift bags](#) (IMCA D 016)
- ♦ [Diving in contaminated waters](#) (IMCA D 021)
- ♦ [DESIGN for surface orientated \(air\) diving systems](#) (IMCA D 023)
- ♦ [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)
- ♦ [DESIGN for surface supplied mixed gas diving operations](#) (IMCA D 030)

- ◆ Norway/UK regulatory guidance on offshore diving (NURGOD) (IMCA D 034)
- ◆ Neurological assessment of a diver (IMCA D 036)
- ◆ DESIGN for mobile/portable surface supplied systems (IMCA D 040)
- ◆ 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)
- ◆ Remotely operated vehicle intervention during diving operations (IMCA D 054)
- ◆ Diver attachment to structures by means of a weak link (IMCA D 058)
- ◆ 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)
- ◆ Flying after diving: Recommendation (DMAC 07)
- ◆ Safe diving distance from seismic surveying operations (DMAC 12)
- ◆ Medical equipment to be held at the site of an offshore diving operation (DMAC 15)
- ◆ Proximity to a recompression chamber after surfacing (DMAC 22)

Other relevant information

All published IMCA videos are available to stream online and it would be helpful for ADS candidates to review all relevant IMCA videos as part of their preparation for the IMCA examination. A link to the IMCA videos is shown below:

<https://www.youtube.com/user/IMCAint/videos>

Candidates should also be familiar with the latest revision of the US Navy Diving Manual and the use of US Navy Decompression Tables and procedures (currently see USN Manual Volume 2, Chapters 8 & 9). They should also be very familiar with the USN guidance on dealing with Hazardous Marine Creatures and the injuries they may cause (see Appendix 5C in the current USN Diving Manual).

The US Navy Manual is available as a free download from:

https://www.navsea.navy.mil/Portals/103/Documents/SUPSALV/Diving/US%20DIVING%20MANUAL_REV7.pdf?ver=2017-01-11-102354-39

Legislation

Candidates who wish to sit the optional legislation modules should be familiar with the following:

- ◆ UK legislation – Reporting of Injuries, Diseases and Dangerous Occurrences Regulations 2013 (RIDDOR 2013) (see INDG 453 <https://www.hse.gov.uk/pubns/indg453.pdf>)
- ◆ HSE Commercial Diving Projects Offshore Approved Code of Practice L103 (<https://www.hse.gov.uk/pubns/books/l103.htm>)
- ◆ The Health and Safety at Work etc Act 1974: Sections 2-9 http://www.legislation.gov.uk/ukpga/1974/37/pdfs/ukpga_19740037_en.pdf

HSE documents are available as free downloads at:

<https://www.hse.gov.uk/pubns/books/index-catalogue.htm#>

- ◆ Norwegian legislation – NORSOK U – 100 Manned Underwater Operations available to purchase [here](#).

Preparation

In preparation for the exam it is recommended that candidates who wish to achieve any IMCA supervisor certification should start a programme of disciplined self-study long before they apply to sit the exam.

This is to ensure that they have the best chance of passing the exam at the first attempt, but it is also to ensure that every candidate has a thorough understanding of all the documents and procedures that a supervisory position demands. In addition, consideration should be given to undertaking a review session in the run-up to the exam at one of the IMCA approved training establishments offering the ADS training programme. A list of establishments currently offering IMCA-approved trainee ADS training is available on IMCA's website at:

<https://www.imca-int.com/divisions/diving/personnel/diving-supervisor/air-courses/>

Supervisor candidates who do not prepare adequately will find the exam a challenge to pass, in particularly the physics and diving operations sections.

Sample questions indicative of the type of questions contained within the IMCA ADS exam are contained in Appendix 1 of this Information Note.

The time allowed to sit the ADS and legislation exams are:

- ◆ IMCA Air Diving Supervisor – 2.5 hours
- ◆ Legislation Modules UK/NOR – 30 minutes each

Candidates who do not speak English as a first language or who are not familiar with online examinations and calculators should ensure they are adequately prepared before sitting the exam. In addition, an allowance has been made within the exam timings for candidates working in a second language.

IMCA ADS Sample Exam Questions

Please find detailed below a number of sample questions indicative of the type of questions contained within the IMCA ADS Exam.

Physics Examples

1. How much air does a 6-litre cylinder contain if it is pressurised to 200 bars?
 - a. 1000 litres
 - b. 1100 litres
 - c. 1200 litres
 - d. 1300 litres
2. A wet bell receives an up thrust of 16,095 lbs when totally submerged and it weighs 7.5 tons. How much extra buoyancy is needed to make it 500 lbs positive?
 - a. 435 lbs
 - b. 705 lbs
 - c. 935 lbs
 - d. 1205 lbs

Physiology Examples.

1. Anoxia is defined as:
 - a. Too little oxygen
 - b. Too much carbon dioxide
 - c. Too much oxygen
 - d. Total absence of oxygen
2. Tunnel vision, dizziness, earache, nausea, irritability and muscular twitching around the lips and eyelids are the combined symptoms of:
 - a. Arterial gas embolism
 - b. Hypercapnia
 - c. Acute central nervous system oxygen toxicity
 - d. Serious decompression illness

Working Practice Examples

1. Which one of the following excursion umbilical lengths is appropriate for a four-minute bail-out capacity?
 - a. 20 metres
 - b. 30 metres

- c. 40 metres
 - d. 50 metres
2. Which one of the following is the recommended minimum safe horizontal distance to be maintained between a scaffolding operation and a working diver at a depth of 30 metres?
- a. 30 metres
 - b. 39 metres
 - c. 45 metres
 - d. 1 mile
3. An imminent gale warning means that a gale is expected within:
- a. 0-6 hours
 - b. 6-12 hours
 - c. 12-24 hours
 - d. 24-36 hours
4. Why should extra care be taken when using water-jetting equipment from a vessel operating in the DP mode?
- a. Communications to the supervisor may be interrupted
 - b. The diver may be exposed to unusual sound wave patterns
 - c. The operating noise may interfere with the acoustic transponder
 - d. The pump may interfere with the navigational system