



## Bell run and lock-out times, and bell run times in relation to habitats

### Diving Information Sheet No 7

#### Introduction

1 This information sheet is part of a series providing guidance on diving at work. It replaces diving safety memorandum DSM 2/1992. The remaining DSMs have either been replaced by other diving information sheets, or were cancelled when the Diving at Work Regulations came into force on 1 April 1998.

2 This information sheet sets down clear guidance on:

- bell run and bell lock-out times for two and three-man diving bells; and
- bell run times in relation to work carried out in habitats.

**It is important to recognise that the various bell run and lock-out times set out in this sheet are, unless stated otherwise, to be regarded as maxima and will need to be reduced for very heavy work.**

3 Bell run and bell lock-out times are interpreted as follows:

#### ■ Bell run times

The maximum bell run time is calculated from initial bell lock-off until the final lock-on to the diving system and the divers are ready to transfer. If, after the initial bell lock-off, the bell is returned to the system for any reason, no adjustment should be made to extend the bell run beyond 8 hours after the initial lock-off.

#### ■ Bell lock-out times

Lock-out time in the water is the elapsed time from when the diver is totally submerged after exiting the bell until the diver is back in the bell.

#### General

4 In order to ensure safe and efficient operations, it is important that diving personnel work with a time routine which allows them to develop a regular work and sleep pattern, and with a minimum rest period of 12 hours (ie not diving or carrying out pre or post-dive checks). Therefore, when bell diving operations are carried out around the clock, and on a continuous basis, they should be planned so that no diver takes part in a 6-hour lock-out operation or an 8-hour bell run more than once within a pre-planned 24-hour period.

**5 The practice of 'ratcheting', ie cycling the whole dive team in less than 24 hours, and then immediately recommencing the cycle to gain work time, should not be used.**

6 Reference is made in this information sheet to 'planned' bell run and lock-out times. This has deliberately been included, as diving operations should be organised in such a way that the time necessary to carry out certain tasks is assessed in advance by the project team. Diving supervisors should make a clear note in the diving operations record, before the operation starts, as to how long they feel the bell run and lock-outs will take. It will therefore serve as a guide to them, the divers, other members of the diving team, client representatives and others.

7 When divers are involved in tiring physical work, diving supervisors must appreciate that it may be appropriate for them to return to the bell for a short rest and to take refreshment before finishing their task. They should only do so with the consent of the diving supervisor, but such consent should be given in most, if not all, cases. This applies to all diving bell operations. The diving supervisor must ensure that the divers are offered a refreshment break of at least 15 minutes within 3 hours of the initial lock-out. If the diver agrees to forego such a break, then a timed entry should be made in the diving operations record and subsequently signed by the diver and diving supervisor.

#### Two-man bells

8 The total bell run time should be planned so it does not exceed 8 hours. The lock-out time in the water of divers from a two-man bell can be flexible within the total bell run time, up to a maximum of 4 hours. It may exceed this time, under exceptional circumstances, by a further maximum period of 30 minutes if it is necessary to complete a 'critical task', but then only with the agreement of the two divers and the diving supervisor. In this case their agreement should be recorded in the diving operations record.

#### Three-man bells

9 The total bell run time for a three-man bell (containing three divers) should be planned so it does not exceed 8 hours. If two divers lock-out simultaneously from the bell, then the lock-out shall be for a maximum of 6 hours (provided that the bell man remains in the bell, except in an emergency, throughout the bell run). They should be organised in such a way that each diver has a dry dive, acting as standby diver/tender in the bell every third bell run.

10 On occasions, in advance of a bell run, a diving supervisor may judge that three divers will need to lock-out during the course of the dive. In this situation, as part of the pre-planning, the supervisor may organise lock-outs

in the water on a flexible basis, within a maximum bell run time of 8 hours, so that each lock-out does not exceed 4 hours. Under exceptional circumstances, a 4-hour lock-out in the water may be extended by up to a maximum 30 minutes if it is necessary to complete a 'critical task', but then only with the agreement of the two divers and the diving supervisor. In this case their agreement should be recorded in the diving operations record.

## Habitats

11 The work carried out in the dry in a habitat is generally concerned with the welding of pipes or structural members, and is very different from the work carried out by divers in the water.

12 The total bell run time should be planned not to exceed 8 hours. Once in the habitat, the divers need to assess the work that has to be carried out, set it up, carry it out, and then leave the habitat in a suitable condition for the next team. Recent assessment of several dozen habitat dives has indicated that such work can usually be completed within the planned 8-hour bell run. However, it is appreciated that practical and technical problems can occur, eg the requirement, for technical reasons, for root and hot pass welds to be completed by a diver before passing on to the next team.

## Further reading

*Commercial diving projects offshore. Diving at Work Regulations 1997. Approved Code of Practice L103*  
HSE Books 1998 ISBN 978 0 7176 1494 3

*Commercial diving projects inland/inshore. Diving at Work Regulations 1997. Approved Code of Practice L104*  
HSE Books 1998 ISBN 978 0 7176 1495 0

*Recreational diving projects. Diving at Work Regulations 1997. Approved Code of Practice L105*  
HSE Books 1998 ISBN 978 0 7176 1496 7

*Media diving projects. Diving at Work Regulations 1997. Approved Code of Practice L106*  
HSE Books 1998 ISBN 978 0 7176 1497 4

*Scientific and archaeological diving projects. Diving at Work Regulations 1997. Approved Code of Practice L107*  
HSE Books 1998 ISBN 978 0 7176 1498 1

*Diving at Work Regulations 1997 SI 1997/2776*  
The Stationery Office 1997 ISBN 0 11 065170 7

*Are you involved in a diving project at work? A brief guide to complying with health and safety law* Leaflet  
HSE Books 2009 (single copy free or priced packs of 10  
ISBN 978 0 7176 6366 8)

## Further information

HSE priced and free publications can be viewed online or ordered from [www.hse.gov.uk](http://www.hse.gov.uk) or contact HSE Books, PO Box 1999, Sudbury, Suffolk CO10 2WA  
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**This leaflet contains notes on good practice which are not compulsory but which you may find helpful in considering what you need to do.**

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