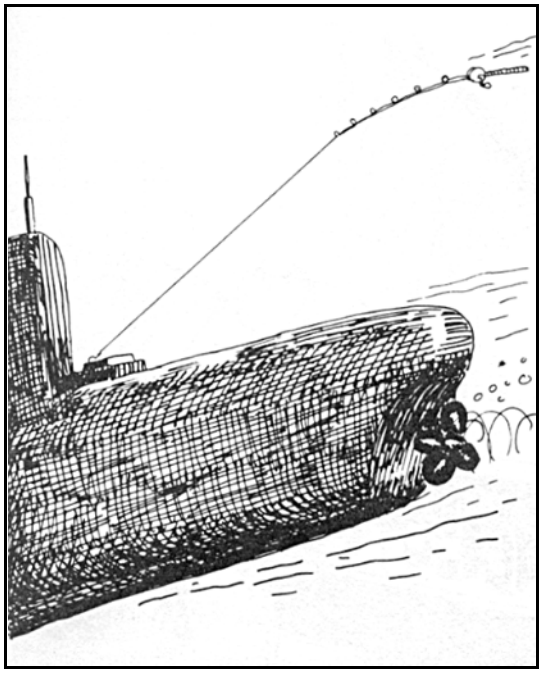
Section 12 — Supervise Wet Bell Diving



Larson.[1]

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First Edition — December 2003; Revision (0)

REVISED BY: Active Learning Partners (Bronwen Campbell), Ian A. Milliner, and Paul Bulter **DATE & TIME:** 24-Feb-05 10:40
FILE REF: c:\documents and settings\ian milliner\my documents\data-1\milly\adas\text books\supervisor\a-dive supervisor - section 12.doc
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1 CHAPTER 1 – SUPERVISE WET BELL DIVING

INTRODUCTION

ADAS COMPETENCY

Supervise wet bell diving.

Supervise the application and use of all wet bell diving equipment and procedures utilised in a wet bell dive operation.

Keep up to date with developments of new wet bell dive equipment and procedures.

Ensure appropriate qualifications and/or training of personnel prior to use of any wet bell dive equipment or procedures.

Apply wet bell emergency procedures in a simulation of an emergency during a dive operation.

As a supervisor for wet bell diving, you are responsible for very complex operations. You will need to:

- ✔ Supervise the application and use of all wet bell diving equipment and procedures utilised in a wet bell dive operation.
- ✔ Keep up to date with any developments in wet bell diving.
- ✔ Ensure appropriate qualifications and/or training of personnel prior to use of any wet bell dive equipment or procedures.
- ✔ Apply wet bell emergency procedures in a simulation of an emergency during a dive operation.

WET BELL EQUIPMENT

WET BELLS

A typical wet diving bell is constructed of steel or marine treated aluminium, with a flat base weighted with ballast or concrete to give it some stability in water.

Either around the sides of the platform or fitted in a horizontal position beneath the basic platform is a bank of cylinders, which carry the appropriate breathing gas for the depth involved. These cylinders are linked by some form of stainless steel or copper tube manifold, leading to an oil filled contents gauge within the bell and a basic control panel within the diving bell itself. The gas cylinders should be marked clearly or numbered in such a way that there will be no confusion as to which is full and empty when in use.

The actual bell is an upturned chamber within which is fitted the necessary gas valves and gauges, BIBS units (built in breathing system) and usually some form of communication with the surface, which may be an integral part of the main lifting cable or a separate cable completely. Other often-standard fittings will include fold-up seats on which the diver can sit, racks for holding tools and other equipment associated with the work in hand.

When the bell chamber is fitted with air, it will give a considerable lifting force to the unit, and hence the need for ballast and stability previously mentioned.

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USES OF A WET BELL

The uses to which a wet bell can be put include the following:

- ✔ a means of transporting one or more divers from the surface to an underwater site, or bringing them back from depth
- ✔ a safe and convenient platform on which to conduct decompression stops
- ✔ a refuge whilst the divers are underwater, in the event of equipment failure, physical exhaustion, the need to hold a clear conversation between divers and/or the surface, or in the remote situation of a shark attack
- ✔ a workbench to perform basic engineering tasks whilst underwater, since a range of hand or power tools can be carried within the wet-bell

Current UK regulations limit the use of such bells to 50m (165ft) or 70m as an emergency back up to an SDC (submersible decompression chamber), but special dispensation will be required.

SAFE WORKING PROCEDURES

Typical safe working procedures include ensuring that:

- ✔ all members of the dive team are ready and safety chain in place before lowering wet bell into the water
- ✔ surface crew members responsible for handling the bell should be wearing safety helmets and life jackets or safety lines
- ✔ the umbilical is monitored for length and tension
- ✔ there is a system for preventing the wet bell falling below the maximum dive depth if the winch fails (eg a guide wire system or a snubber line)
- ✔ divers' umbilicals are tied off in the bell
- ✔ contact is maintained with the diver and the bellman
- ✔ all umbilicals are stowed and the safety chain is in place before retrieving bell at end of dive

EMERGENCY PROCEDURES

LOSS OF COMMUNICATIONS

If voice communication is lost:

- ✔ to the diver – use flashing bell lights or line signals, if no response, send bellman in to recover diver
- ✔ to the bellman – ask diver to return to bell
- ✔ to bell – use flashing bell lights and divers signal back by operating blow-down valve, use ROB or on-board video if available

If all else fails, send standby diver in.

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LOSS OF HOT WATER

If there is loss of hot water to the diver, and it cannot be rapidly fixed, terminate the dive. Put a back up heating system on line as quickly as possible.

LOSS OF GAS SUPPLY

Inform diver to use his bail-out to return to the bell and bellman to turn on on-board supply. Terminate the dive.

SNAGGED UMBILICAL

This is potentially extremely hazardous – if the diver is unable to deal with the situation, the standby diver should be sent in to assist the diver.

DIVER RECOVERY

Bellman recovers diver to the bell and carries out resuscitation inside the canopy of the bell.

The diver's and bellman's umbilicals MUST be safely stowed before lifting the bell. A trailing umbilical could snag and turn an incident into a serious accident.

LIFT SYSTEM FAILURES

The main winch should have a back-up power supply. If the wet bell main cable fails, it can be recovered using the guide wires.

EMERGENCY DRILLS

The best way to prepare the team for emergencies is to provide thorough training in emergency procedures and regular emergency drills.

SUMMARY

Wet bell diving allows for safer diving to depths of up to 50m.

Wet bells are a means of transport, a platform for conducting decompression stops, a refuge for the divers, and a workbench.

Possible emergencies include; loss of communications, loss of hot water, loss of gas supply, snagged umbilical, diver recovery, and lift system failures.

The dive team should be thoroughly trained and drilled in emergency procedures.

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