THE NEW UK DIVING LEGISLATION AND PROBLEMS ENCOUNTERED WITH ITS INTRODUCTION

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From 1st July 1980 there has been just one set of diving legislation in the UK which covers all diving operations at work whether it be in docks, harbours, inland waterways or in the offshore industry.

The drafting of the new legislation has taken several years. After considerable discussion the regulations have been introduced and generally accepted as being good for the industry. Initially, there was considerable opposition from many of the scientific and semi-scientific groups. The least opposition came from the offshore industry. This was probably because the new legislation is to a certain extent based on the old offshore installations diving operations regulations. In fact we have found it possible to reduce the amount of legislation and detail in the new regulations. The philosophy has been to confine regulations to statements of principles about what should be achieved leaving much of the details to guidance notes, which have been developed in parallel with the regulations, so encouraging the diving industry to take more responsibility for regulating themselves.

The regulations are not a diving manual and they do not contain details of how a diver should carry out a dive. They lay down the duties of those planning, managing and supervising diving operations, qualifications and standards of fitness for divers taking part and the kind of equipment that should be provided. The regulations are intentionally flexible to allow different methods of operating and different techniques or equipment in a variety of circumstances. They do not restrict the introduction of new technology and techniques.

Persons subject to regulations

The regulations apply to diving operations at work but not to sport and amateur diving.

The regulations are intended to protect persons employed on diving operations. They apply to all diving operations at work within Great Britain, within territorial waters and all diving operations outside territorial waters in the UK designated areas in connection with offshore installations and pipelines. They cover all diving activities associated with oil and gas on the UK Continental Shelf regardless of the nationality of the diver or the flag of the vessel from which the diving is being conducted.

Persons responsible for safety

Everyone whose activity may effect the safety of a diving operation has responsibilities under the regulations. Not only the diving contractor and others directly involved but such people as Masters of vessels, pilots of submersibles, Harbour Masters, managers of offshore installations, pipelines, civil engineering sites, etc., all have responsibilities if any of their actions effect the safety of diving operations. Responsibilities are also placed on the owner of an offshore installation, pipeline or concession and on a proposed owner. The duties vary with every situation but everybody involved in the diving operation from the prime contractor down to the diver himself has responsibilities for the safety of the diver.

Enforcement

The duties of enforcement rest with the Health and Safety Executive and the Diving inspector of the Department of Energy. In general the Diving Inspectorate deals with all diving activities associated with the offshore oil and gas industry and the Factory Inspectorate of the Health and Safety Executive deal with diving inshore, docks and harbours and civil engineering sites.

This means that anyone participating in diving activities to do with offshore oil and gas deals with only one government department, the Diving Inspectorate of the Department of Energy. Even if the subject involves other government departments correspondence and communications should be channelled through the Department of Energy's Diving Inspectorate. All our inspectors are diving specialists in their own right with considerable experience and expertise. This specialist knowledge is made available to the Factory inspectorate as required.

Our job entails investigations into accidents, periodical inspections of diving sites and establishments, education and the introduction of any new legislation that may be necessary. From the legal standpoint our role ranges from advice and warnings to actual enforcement in the form of either improvement and prohibition notices or legal proceedings. We also have an important role in monitoring training standards and ensuring that those standards are implemented in training.

Diver Qualification

Before a person may dive at work he must have certain qualifications. There are four standards, Part I, to all intents and purposes the offshore "Air Diver", Part II is the offshore "Bell Diver", Part III is the docks and harbours, inland waterways and civil engineering diver, and Part IV is very broadly the SCUBA diver such as the diving scientist.

To obtain a training certificate a diver must have obtained a satisfactory standard of competence in matters which are relevant to the specific category. We restrict air diving to 50 metres and require a diving bell for all dives deeper than 50 metres. The UK standards for the offshore air diver and the offshore bell diver have been established as a result of nearly ten years experience of diving in the offshore industry in the North Sea. These standards have been agreed with Norway and France and discussions are taking place with Holland and Italy aimed at achieving mutual agreement.

The "offshore air diver" has to obtain a minimum time underwater at certain depths carrying out work. He has to be qualified and competent in all types of air breathing apparatus and must have exposure down to depths of 50 metres. The “bell diver” must have had at least 12 months operational experience as a Part I air diver before he can undertake the bell diver’s course. The standard for the bell diver includes a minimum number of bell lock-outs, successful completion of bounce dives down to at least 100 metres and a saturation dive preferably with a bell lock-out.

In addition to the four separate standards there are established training modules by which divers can progress from a lower to a higher standard. For six months after the introduction of the new legislation diving contractors were authorised to issue certificates of training for the appropriate part or standard providing that the diving contractor was satisfied that the diver’s experience during the two years immediately preceding the issue of the certificate was such that the diver was competent to take part in diving operations of the category stated. Such transitional certificates are valid without limitations of time.

From now on any foreign national or a UK citizen who has been working abroad will have to satisfy the Diving Inspectorate that he has reached the particular UK standard before he can obtain a certificate and be allowed to work in the UK or the UK sector. There are no restrictions on foreign divers operating in the offshore sectors of the United Kingdom providing they are trained to the necessary standard or that they have achieved that standard by experience. Any foreign diver wishing to work in the UK offshore industry who is not in possession of a UK certificate should apply through the Diving Inspectorate of the Department of Energy for the appropriate certificate. It will be necessary for the applicant to prove to the Inspectorate that he has achieved the standards required. This can be done by the production of certified log books and other such documentation. I have already issued guidance on the minimum operational diving time that is necessary for the various categories. Unfortunately the certificate will cost 30 dollars.

On occasions divers with special qualifications may be required to fly into the UK sector at very short notice. A rapid process scheme has been introduced whereby a certificate of training/or experience can be issued for a limited time. Such requests must come through the Department of Energy’s Diving Inspectorate and can be processed either by telephone or telex.

Certificate of Fitness

All divers operating in the UK must hold a valid certificate of medical fitness to dive. This can only be obtained through a doctor approved by the Department of Energy.

The medical examination will be comprehensive and may in some cases include radiographic examination of long bones, audiometry, electrocardiography and spirometry. Considerable flexibility is built into the guidance and standards of medical examinations since the shallower inshore divers will not generally be required to have certain tests appropriate to deep offshore diving.

Equipment

The regulations require the diving contractor to ensure that all plant and equipment which is necessary to the safe conduct of the diving operations be available for immediate use. It is necessary that the plant and equipment is maintained in a condition which will ensure it is safe while it is being used.

The regulations and plant and equipment are not intended to be comprehensive in scope, neither do they lay down in detail all the equipment which is necessary. They do, however, cover such requirements as reserves of breathing mixtures, that breathing equipment, communication systems, means of keeping the divers’ body temperature in safe thermal balance, illuminations, depth measuring devices and surface compression chamber support.

The legislation requires that the equipment and plant is properly designed, adequate strength and good construction. It also covers the requirements for periodical maintenance and examination and testing of plant and equipment.

Documentation

Diving contractors are required to issue diving rules for regulating the conduct of all persons engaged in the diving operations. Schedule I of the legislation provides a format covering matters for which provision is to be made in the diving rules. There is also a requirement to keep diving operations log books, maintenance schedules for equipment, divers’ personal log books, history sheets for pressure vessels etc.

Exemption certificates

Any diving operation, or class of diving operation, and plant and equipment, or class of plant and equipment, can be exempted from any requirement or prohibition imposed on the regulation. Any exemption would require adequate alternative arrangements to be made for the safety of the divers and may be subject to specific conditions.

The introduction of the new UK Diving Operations at Work Regulations has not been without some hiccups. It is an unfortunate fact that there are still some people in the industry who do not wish to be professional. It has always been appreciated that diving is a potentially more dangerous occupation than most since, in addition to the usual dangers at work, the diver operates in a hostile environment. In spite of the hiccups and some opposition the actual legislation for the offshore industry has been reduced and diving is becoming more professional.

I think that the UK has proved that, in spite of the many obstacles, it is possible to introduce one piece of legislation, covering every aspect of diving at work, acceptable and practicable in both operation and enforcement.

The North Sea 1981

At the beginning of 1981 offshore diving activity was at a low ebb but it picked up fairly quickly until, at the end of the season, there was no surplus of diving effort. 1981 has also seen considerably more trade union activity than hitherto.

The continuing saga of the UK Underwater Training Centre is at last reaching a conclusion. I am convinced that in the end the solution will be satisfactory to all concerned and it could well become the premier diving school in the world.

The North Sea Medical Transfer Under Pressure System was used in earnest for the first time during 1981. The operation went exceedingly well.

Diving Incidents

The number of diving incidents in the North Sea continue to decline.

During 1981 there were several "dangerous occurrences" with diving bells. One bell was dropped due to a hydraulic failure. Another dropped a fair distance due to a nine inch wire coming off the sheave. An umbilical parted in mid-water. An upper deck incident resulted in a diving bell being fouled by wire.

There were three occasions when dynamically positioned vessels failed to keep station whilst divers were operating. Two divers were rendered partially unconscious by the supply of the wrong gas. One a diver, in a top bunk, lost consciousness due to layering of helium during blowing down.

Twice a pipe from an oxygen cylinder to an installation burst and on one occasion caught fire.

The reporting of bends continues on the same pattern as hitherto, with surface decompression dives producing the highest number of decompression sickness cases.

I am delighted that for the second year running the North Sea has not had a fatality.

SUCCESSFUL RECOVERY OF A DIVER UNCONSCIOUS UNDER ICE

A short report in DIVER (February 1982) records the dramatic incident in which a diver became trapped, unconscious, under ice in a UK river in December, 1981.

The victim, aged 39, became separated from his two companions in a dive in the River Ribble just after Christmas. They immediately surfaced and raised the alarm. They saw him floating face up under the ice with his ABLJ (adjustable buoyancy life jacket, in Australia, BC, buoyancy compensator) inflated. One of them managed to make a small hole in the ice with his knife but as the body was drifting freely they were afraid left an injudicious jab might injure the victim beneath. Fortunately the dive party had a sledge-hammer with them and were able to break the 7 cm thick ice and reach the victim.

When removed from the water he was unconscious and "blue with cold". Expired Air Resuscitation (EAR) was immediately instituted. Spontaneous breathing efforts soon resumed though unconsciousness continued for an unspecified period. He was rushed to the Intensive Care Unit of the nearest hospital and kept under observation while he continued to recover. He was discharged from hospital after three days.

The divers were experienced in winter diving conditions and believe the incident occurred because the victim's lips became numb with cold. As a result he lost his regulator without being aware of what was occurring. It was estimated that only a couple of minutes elapsed between his disappearance and the rescue. No residual morbidity was recorded.

DIVING SAFETY MEMORANDA

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DIVING SAFETY MEMORANDUM 11/1981 DIVING BREATHING GASES

During the past years reports have been received of incidents in the North Sea where divers have suffered from the effects of hypoxia or anoxia. These incidents are possibly attributable to the divers being supplied with the wrong breathing gases. It is also known that fatalities have occurred outside the UK sector by divers being accidentally supplied with pure helium rather than a suitable oxy/helium mixture.

The attention of all diving companies is therefore drawn to the need to ensure that all breathing gas storage cylinders are correctly marked as to their contents. In addition to an accepted colour coding, storage cylinders should be marked in large discernible letters with the gas content, quoting the oxygen percentage first eg. 10% O_2 90% He.

Sound operational procedures should also be followed to ensure that all gases are tested before being put 'on line' and, in addition, all main breathing gas supplies to the diving bell and divers should be continuously monitored for the oxygen content. Monitoring devices should be