



---

# British Sub-Aqua Club

# Risk Assessment

# Guidelines for Technical Courses

February 2006



## Contents

INTRODUCTION .....	3
HOW TO USE THE GUIDELINES .....	3
EXISTING PRACTICES .....	4
BASIC SEQUENCE .....	4
PROJECT PLAN .....	4
RISK ASSESSMENT – OPEN WATER.....	4
RISK ASSESSMENT – TECHNICAL COURSES .....	5
REFERENCE DOCUMENTS .....	5
WHAT IS RISK ASSESSMENT?.....	7
CONDUCTING A RISK ASSESSMENT .....	7
DEFINITIONS .....	7
CREATING A RISK ASSESSMENT DOCUMENT .....	8
SPECIFIC GUIDANCE FOR TECHNICAL COURSES .....	8
GENERIC RISK ASSESSMENT – DIVE .....	9
GENERIC RISK ASSESSMENT – MEDICAL .....	10
SPECIFIC RISK ASSESSMENT – TECHNICAL.....	11
SPECIFIC RISK ASSESSMENT – CCR/SCR .....	12
SPECIFIC RISK ASSESSMENT – CCR OXYGEN RISK.....	13
REBREATHER OPERATING PROCEDURES.....	14
BSAC PROJECT PLAN.....	16
BSAC PROJECT PLAN - DIVE TEAM.....	16
BSAC PROJECT PLAN - EQUIPMENT ISSUE .....	17
BSAC DIVE LOG .....	18
BSAC DIVE MARSHAL SLATE .....	19



### Introduction

For some sheltered water and inland dive sites, it is necessary to submit a RISK ASSESSMENT of diving activities as part of the admission policy of the owner. Equally, it is a recommendation that such a document is created for all sites when amateur (not for reward) instruction is to be undertaken. In addition, it is a requirement of The Diving at Work Regulations 1997 that a risk assessment document, project plan and dive log be created when professional instruction is to take place.

The purpose of the Risk Assessment Plan is to have evidence that the Instructor is aware of the potential hazards on site and have contingency plans to implement in the event that these hazards occur and possible litigation ensues.

The writing of a Risk Assessment does not require any specialist knowledge or qualifications. Recreational divers are already in the habit of assessing hazards associated with the sport and dive sites that are visited. These assessments may be referred to by another name, such as Dive Plan and/or Dive Marshal Slate.

The format of this Risk Assessment document is more in line with an industry standard and will be more readily recognised by operators of facilities.

Technical Instructors within BSAC may be deemed to be “at work” and hence the Approved Code of Practice for Recreational Diving Projects (ACOP) will apply. “At work” means that the Instructor is being financially rewarded for their time; this does not apply to Coaching Scheme courses where only limited expenses are paid.

For subsequent applications where you have already submitted a full risk assessment generic plan there is no need to re-submit a further full plan. This previously submitted plan only needs to be reviewed and updated. In your application, inform the facility operators of any amendments that need to be applied to the risk assessment plan that is already on file.

### How to use the guidelines

This document has been prepared by the British Sub Aqua Club to give guidance to Technical Instructors on how to perform risk assessments appropriate to their diver training and diving activities for all open water locations. Specific example guidelines for Instructors teaching Technical Courses are included as there are additional hazards involved.

This document gives a brief explanation of the risk assessment process, provides some example risk assessments and includes an example project plan.



### Existing Practices

Risk assessment is in fact already inherent in the way in which BSAC Branches, BSAC Centres, Instructors and individual divers go about organising their training and diving. For example, for open water diving, Dive Planning and Marshalling includes many activities that are designed to assess and control risk. A risk assessment is nothing more than a structured way in which to address these activities so that they are performed most efficiently and safely.

The risk assessment process is therefore a model, which Technical Instructors can utilise as part of their normal diver training and diving organisational activities. This document gives a brief explanation of the risk assessment process, provides some example risk assessments and includes an example project plan. The examples are not an exhaustive list but should be used as a basis for producing a more concise list for the final document.

### Basic Sequence

In order to illustrate that risk assessments are conducted at several stages of normal diving practices the following list identifies a typical sequence. It is recommended that all diving should be conducted using this, or a similar structure.

### Project Plan

To be completed in advance of the event and conveyed to the group members on site. This will include all the Risk Assessment aspects listed in the 'generic' plan (see page 15).

## Risk Assessment – Open Water

- **Dive Marshal Sheet** – filled in and used during diving activities to record circumstances on site at the time of diving. This is the 'specific' plan for the day identifying changes that are needed to the 'generic' plan
- **Dive Brief** – should be conducted by the instructor of each dive
- **Buddy Check** – should be conducted by each diving pair to familiarise each diver with buddy's equipment and configuration
- **Dive Debrief** – should be conducted by the Dive instructor of each dive
- **Dive Records** - completed by Dive Marshal



### Risk Assessment – Technical Courses

**Gas Analysis** – all gases should be analysed before diving and the cylinders marked in the appropriate manner, this should include the Maximum Operating Depth (MOD) that the cylinder should be used.

**Appropriate Alternative Gas Source** – should be carried for the dive to be conducted.

**Rebreather Pre-Dive Checks** – should be performed in accordance with the manufacturer Guidelines for the unit being used. It is recommended that a checklist is used for this Operation.

**Emergency Decompression Plans** – back up plans should be carried in the event that a required gas is not available for a decompression stop.

### Reference Documents

#### **‘Safe Diving’ Booklet**

This booklet is an alphabetical guide to safe practices of sports diving as recommended by the British Sub-Aqua Club (BSAC), the governing body of the sport of sub-aqua diving and snorkelling in the UK. The ideas expressed within reflect the current thinking of the National Diving Committee (NDC) and the advice on which it is acting. It also contains the Diver’s Code of Conduct and lists the current policies of the BSAC.

Available from BSAC HQ or [www.bsac.org/techserv/sdp.htm](http://www.bsac.org/techserv/sdp.htm)

#### **Instructor Manual 2002**

Also published by the BSAC, this manual takes into account the consideration of risks inherent in diver training, which has been a feature of the development of the BSAC’s recommended syllabus of training and its associated implementation. This includes risk control criteria such as training progression, maximum group sizes, appropriate instructor qualifications etc.

Available from the BSAC Mail shop or [www.bsac.org/shop/training.htm](http://www.bsac.org/shop/training.htm)



### Information Leaflets

**5 Steps to Risk Assessment HSE** leaflet INDG163 (rev 1).

Aimed to help employers and self-employed individuals to assess risks in the workplace.

HSE Books, PO Box 1999, Sudbury, Suffolk, CO10 2WA. Tel: 01787 881165  
Fax: 01787 313995

Website: [www.hsebooks.co.uk](http://www.hsebooks.co.uk)



## What is Risk Assessment?

Risk Assessment is nothing more than a structured method to the identification of significant hazards associated with diving and diver training activities. The process addresses these activities so that they can be performed more safely.

Risk assessment is a common sense approach process and consists of five simple steps that:

- identifying significant hazards;
- who or what is likely to be affected;
- the risks associated;
- the measures taken to control the risks and finally,
- recording what has been done.

## Conducting a Risk Assessment

A risk assessment is an assessment of the hazards that may exist when conducting diving and diver training activities. Its purpose is to evaluate whether sufficient precautions have been put in place to prevent harm befalling any of the persons taking part in those activities. The risk assessment should, however, be **reviewed on each occasion and throughout the day** to ensure that the risks identified are still valid. Any changes should be noted, signed and dated to show the changing situation has been assessed, that no further risks have arisen and that the appropriate controls are in place.

## Definitions

In any risk assessment guidance, there are standard terms used. The following is a list of the more commonly used terms:

- **'hazard'** – anything with the potential to cause harm
- **'risk'** – the likelihood that harm from the hazard will be realised

Many risks may be **'generic'**, with common factors while others are more **'specific'** that require individual consideration depending upon the diving activity or location.



### **Creating a Risk Assessment Document**

The risk assessment document shown is simply an example, which is not exhaustive for each situation. In each case a hazard is identified, an assessment as to who is at risk has been made followed by a risk evaluation based on the severity and frequency of that hazard. The final two columns record the controls that are normally put in place to avert this hazard followed by the actions to be taken in the event that the risk is not controlled.

### **Specific Guidance for Technical Courses**

Because of the nature of Technical Diving it is associated with more risk factors. Specific Risk Assessments are shown for Technical Open Circuit and CCR/SCR courses. These are by no means exhaustive for each situation and each Instructor should be prepared to specify more risks if they are present.

### Generic Risk Assessment – Dive

Hazard	Who	Risk evaluation	Controls	Immediate measures to deal with consequences if risk does occur
Trips/Slips & Tumbles	All	Low	Careful selection of dive site Instructor supervision Dive Marshal to advise all divers of no running on site and of any trip hazards.	Remove casualty from danger and provide appropriate first aid. Hospitalise, as required.
Impact with boat/shore	All	Low	Careful selection of dive site Instructor supervision. Jump clear of obstructions Swim clear of boat after entry. Exit up ladder only on request of coxswain/skipper	Remove casualty from danger and provide appropriate first aid. Hospitalise, as required.
Contact with dive boat / propeller	All	Medium	Instructor supervision Only trained cox'ns/skippers allowed to operate boats. Trainees receive specific instruction in boat exit/entry techniques. All exit from and entry to boats controlled by cox'n or delegated crew.	First Aid kit on boat. Boat crew trained in First Aid. Remove casualty from danger and provide appropriate first aid. Hospitalise, as required.
Injury from other boats	All	Low	Careful selection of dive site Instructor supervision Flag 'Alpha' flown while divers are underwater. Monitoring of other surface traffic by boat cover. Divers marked by SMBs or ascend up marked line	First Aid kit on boat. Boat crew trained in First Aid. Remove casualty from danger and provide appropriate first aid. Hospitalise, as required.
Diver Separation	All	High	Careful selection of dive site Instructor supervision Divers to dive in buddy pairs at all times. Contact to be maintained throughout the dive. Strokes or buddy lines to be carried. Separation drill if loss of contact, i.e., look and ascent to surface.	Divers to surface immediately. Re-establish contact. Render assistance as required. Hospitalise, as required.
Surface entanglement	All	Medium	Check equipment stowage Check entry/exit clear	Boat crew/buddy assistance to remove/clear obstacle Boat crew trained in First Aid. First Aid kit on boat.
Entanglement in nets/lines/underwater obstructions	All	High	Careful selection of dive site Instructor supervision All divers carry appropriate cutting implement, such as filament line cutter, wire snips, diving knife, etc. Instructor control.	Assistance from buddy
Reduced underwater visibility	All	High	Careful selection of dive site Instructor supervision Diver numbers in water to be controlled and monitored. Strokes or buddy lines to be carried.	Strokes & buddy lines items to be used in the event of the onset of reduced visibility. Dive to be abandoned in the event of adverse reduced visibility. Divers to surface and exit. Dive Marshal to abort diving.
Running out of gas	All	High	All SCUBA sets fitted with cylinder pressure gauges. Monitoring by Instructor. Instructor / trainee ratios in accordance with BSAC recommendations	All divers carry AAS.
Separation from boat while drift diving	All	High	Careful selection of dive site Instructor supervision Dive plan agreed with boat Cox'n. All dive pairs follow same plan. All dive pairs marked by Surface Buoy Attempt to keep shore/boat in view Dive team try and keep together	Each diver carries aids to visual detection – e.g. flags, sausage buoys, strobes, flares, whistles, EPRIB etc.
Deteriorating weather	All	High	Diving planned using latest weather information. Alternative site planned. Weather conditions constantly monitored by Dive Marshal / cox'n / Instr. during diving. Diver recall mechanism available Throw lines prepared for high winds	Diving cancelled or changed to back-up site by Dive Marshal. Diving in progress terminated using diver recall mechanism. Boat intentions and appropriate times notified to Coastguard prior to departure. Updated if plans are changed.
SMB Failure	All	Medium	Spare DSMB	Let go of reel. Use backup or partners. Use neutral buoyancy to ascend without one.
Dive time exceeded	All	High	Use backup tables/computer	Ascend with buddy
Equipment damaged during transport	All	Low	Equipment secured down during transit. Protect vital parts in containers.	Spares/abort dive
Equipment failure	All	Low	Equipment checks beforehand.	Spares/abort dive

### Generic Risk Assessment – Medical

Hazard	Who	Risk evaluation	Controls	Immediate measures to deal with consequences if risk does occur
Heart attack	All	Medium	Medical self-declaration/referral to Medical Referee	CPR by Instructor. Emergency services plan activation
Ear Damage	All	Medium	Trainees receive specific instruction in 'ear clearing'. Part of safety briefing before every dive. Divers descend slowly to avoid/manage ear clearing. Inform instructor if painful. Divers do not dive when suffering from a cold	Assistance from Instructor or buddy. Stop and ascend.
Decompression Illness	All	Medium	Careful selection of dive site Instructor supervision Dives planned and conducted in accordance with appropriate decompression tables or decompression computer. Plan for worst case including just deeper/just longer All divers equipped with depth gauges and watches and/or decompression computer Ensure well hydrated before dive Avoid yo-yo diving Controlled ascents and buoyancy throughout Considered use of datum lines De-kit before exiting water	Oxygen Administration equipment and trained administrators on site. Emergency services plan activation.
Nitrogen Narcosis	All	Low	Careful selection of dive site Direct instructor supervision Progressive build up of depth experience for trainees to acclimatise. Progressive work-up dives for all divers who are going beyond their recent diving experience. Experience gained in company of Instructor / diver of greater experience at that depth. Clear dive plans. Relax student.	Assistance from Instructor or buddy
Hyperoxia	All	High	Instructor supervision Analyse gas before use. Mark cylinders with MOD. Avoid exceeding MOD or CNS or UPTD. Employ preventive measures to ensure oxygen rich gases cannot be deployed immediately	Assistance from Instructor or buddy. Bail out gas available.
Loss of decompression gas	All	Medium	Instructor supervision Decompression back up plans carried	Utilise back up plans Assistance from Instructor or buddy.
Hypoxia	All	Medium	Instructor supervision Analyse gas before use. Use normoxic mixes whenever possible. Ensure mandatory travel gas when using hypoxic mixes at depth.	Assistance from Instructor or buddy. Bail out gas available.
Hypercapnia	All	Low	Avoid skip breathing. Ensure gas fills well away from contaminating sources.	Assistance from Instructor or buddy. Bail out gas available.
Hypothermia	All	Low	Wear appropriate insulation for water temperatures. Dress warm before and after dives. Foetal position if longer than expected in-water. Wear hat, gloves, protect/shield body from direct exposure to the elements before/after the dive.	1st aid assistance from surface support
Hyperthermia	All	Low	Ensure fully hydrated. Wait as late as possible to done thermals. Sun cream Wear hat to shade from the sun.	1st Aid assistance from surface support.
Exhaustion	All	Medium	Dekit before exiting water Accept help from dive team	Assistance from Instructor or buddy.
Slipping/falling	All	Medium	Wait for assistance. Use rails, etc.	Assistance from Instructor or buddy.
Drowning	All	Medium	Personal Bailout Buddy Bailout Additional gas	Assistance from Instructor or buddy or surface support.

### Specific Risk Assessment – Technical

Hazzard	Who	Risk evaluation	Controls	Immediate measures to deal with consequences if risk does occur
Hyperoxia	All	High	Instructor supervision Analyse gas before use. Mark cylinders with MOD. Employ preventive measures to ensure oxygen rich gases cannot be deployed immediately	Assistance from Instructor or buddy. Bail out gas available.
Loss of decompression gas	All	Medium	Instructor supervision Decompression back up plans carried	Utilise back up plans Assistance from Instructor
Hypoxia	All	Medium	Instructor supervision Analyse gas before use. Use only normoxic mixes.	Assistance from Instructor or buddy. Bail out gas available.
Dive turn limit missed	All	Medium	Instructor Supervision. Planned gas management and dive plan Vigilant watching of dive instruments	Bailout gas available.
Silt	All	Medium	Use of guidelines, torches, etc. Exit slowly	Exit slowly and moe though above silt
Lines entangelment underwater	All	Medium	Instructor supervision. Cutting tools; additional reels with line.	Signal partner to assist. If alone, do not struggle. Apply positive buoyancy a little and deploy cutting equipment. Remove non life-support equipment as required to reduce entrapment.
Structural callapse	All	High	Instructor supervision. Preplanned layout of site and hazards. Predetermined signals using torch or sound.	Avoid features as directed by instructor. If trapped, signal and wait for assistance.
Loss of light	All	Low	Instructor supervision. Backup torch.	Assistance from Instructor or buddy using their auxillary equipment



### Specific Risk Assessment – CCR/SCR

Hazard	Who	Risk evaluation	Controls	Immediate measures to deal with consequences if risk does occur
Hypoxia	All	High	Instructor supervision Calibrate unit according to manufacturers instructions. Pre-breathe unit before diving. Cell linearity check at start of dive. Monitor handsets at regular intervals. Use electronic monitoring system to measure PO2 and/or FO2. Use travel gases when hypoxic mixes planned for depth	Assistance from Instructor or buddy. Bail out gas available.
Hyperoxia	All	High	Instructor supervision Calibrate unit according to manufacturers instructions. Check unit for correct operation before diving. Cell linearity check at start of dive. Monitor handsets at regular intervals.	Assistance from Instructor or buddy. Bail out gas available.
Hypercapnea	All	High	Instructor supervision Correct packing procedure for absorbent. Absorbent change at recommended intervals. Pre-breathe unit before diving.	Assistance from Instructor or buddy Bail out gas available
Loop flood	All	Medium	Instructor supervision Pre-dive checks carried out correctly. Bubble check at start of dive.	Assistance from Instructor or buddy Bail out gas available
Caustic Cocktail	All	Low	Instructor supervision Pre-dive checks carried out correctly. Bubble check at start of dive.	Assistance from Instructor or buddy Bail out gas available



### Specific Risk Assessment – CCR Oxygen Risk

PHASE OF THE DIVE	NORMAL SOLENOID OPERATION	OXYGEN RISKS	POSSIBLE CAUSES	CONCLUSION
Surface Breathing	Closed 6 secs, Open < 1 sec when the PO2 is close to and below the setpoint	Hypoxia - HIGH risk Hyperoxia - NO risk	Hypoxia - oxygen cylinder valve closed, oxygen cylinder empty, solenoid jammed shut, oxygen controllers switched off.	Before the descent there is only one oxygen risk - Hypoxia or low oxygen pressure.  Hypoxia can occur within a minute or so when on the surface. Look often at the PO2 displays! Listen for the oxygen injecting.
Jumping In	Closed 6 secs, Open < 1 sec when the PO2 is close to and below the setpoint	Hypoxia - HIGH risk Hyperoxia - NO risk	Hypoxia - oxygen cylinder valve closed, oxygen cylinder empty, solenoid jammed shut, oxygen controllers switched off.	Before the descent there is only one oxygen risk - Hypoxia or low oxygen pressure.  Hypoxia can occur within a minute or so when on the surface. Look often at the PO2 displays! Listen for the oxygen injecting.
On the surface	Closed 6 secs, Open < 1 sec when the PO2 is close to and below the setpoint	Hypoxia - HIGH risk Hyperoxia - NO risk	Hypoxia - oxygen cylinder valve closed, oxygen cylinder empty, solenoid jammed shut, oxygen controllers switched off.	Before the descent there is only one oxygen risk - Hypoxia or low oxygen pressure.  Hypoxia can occur within a minute or so when on the surface. Look often at the PO2 displays! Listen for the oxygen injecting.
Descending	Closed	Hypoxia - NO risk* Hyperoxia - SLIGHT risk	*Hypoxia - NO risk, providing the oxygen content of the diluent is suitable for the shallows. Hyperoxia - manual addition of oxygen or solenoid jammed open.	The main risk during the descent is the diluent. Is the diluent switched on? - Check this before you get in the water!  Are you pressing the diluent button or the oxygen button? Left hand is diluent. (LEAN - left, RICH - right)  Listen for the solenoid, it shouldn't be opening. If it does, check the PO2 displays.
Bottom section of dive	Closed 6 secs, Open < 1 sec when the PO2 is close to and below the setpoint	Hypoxia - LOW risk Hyperoxia - HIGH risk	Hypoxia - oxygen cylinder valve closed, oxygen cylinder empty, solenoid jammed shut, oxygen controllers switched off. Hyperoxia - manual addition of oxygen or solenoid jammed open.	Hypoxia is a low risk simply because it takes so long to happen and you should be looking at the PO2 displays, ensuring your PO2 is close to the (HIGH) setpoint to ensure you don't suffer decompression sickness.  Listen for the solenoid, you expect short bursts with 6 second closed periods. If it is adding oxygen for longer than a fraction of a second then check your PO2 displays.
Ascending	Closed 6 secs Open > 1 sec	Hypoxia - HIGH risk Hyperoxia - MEDIUM risk	Hypoxia - oxygen cylinder valve closed, oxygen cylinder empty, solenoid jammed shut, oxygen controllers switched off. Hyperoxia - manual addition of oxygen or solenoid jammed open.	Hypoxia - the ascent is potentially a very dangerous time. Check your PO2 BEFORE the ascent and then often during.  Listen for the solenoid, you expect long bursts of oxygen addition - the opening time will vary with your ascent speed but at normal ascent speeds it will be approx. 4 or 5 seconds followed by 6 seconds closed. This can rise to 17 seconds open, 6 seconds closed!  Hyperoxia - there is a reducing risk of hyperoxia as you ascend
Decompression Stop	Closed 6 secs, Open < 1 sec when the PO2 is close to and below the setpoint	Hypoxia - LOW risk Hyperoxia - MEDIUM risk	Hypoxia - oxygen cylinder valve closed, oxygen cylinder empty, solenoid jammed shut, oxygen controllers switched off. Hyperoxia - manual addition of oxygen or solenoid jammed open.	Hypoxia is a low risk simply because it takes so long to happen and you should be looking at the PO2 displays, ensuring your PO2 is close to the (HIGH) setpoint to ensure you don't suffer decompression sickness.  The risk of O2 toxicity increases with the duration of the decompression stop - ensure you stay within the NO AA CNS guidelines.
Surface swimming	Closed 6 secs, Open < 1 sec when the PO2 is close to and below the setpoint	Hypoxia - HIGH risk Hyperoxia - NO risk	Hypoxia - oxygen cylinder valve closed, oxygen cylinder empty, solenoid jammed shut, oxygen controllers switched off.	Hypoxia can occur within a minute or so when on the surface. Look often at the PO2 displays! Listen for the oxygen injecting.



## Rebreather Operating Procedures

### HYPOXIA/ANOXIA

#### CAUSES

- Insufficient oxygen in the breathing gas.
- Generally caused through wrongly prepared equipment or equipment failure.

#### PREVENTION

- Analyse gas
- Prepare rebreather and follow pre-dive check procedures
- Calibrate rebreather control and monitoring system correctly
- Monitor rebreather regularly. (Always know your PO<sub>2</sub>)
- Monitor pressure gauges throughout the dive
- Surface at the correct rate.
- Keep the equipment well maintained.

#### SYMPTOMS AND SIGNS

The diver usually experiences no symptoms and this fact is what makes this ailment so dangerous. However, the observer may notice some of the signs listed below:

- Change of behaviour: over-confidence and nonchalance.
- Loss of judgment and efficiency.
- Dullness of senses.
- Loss of memory.
- Pallor of skin.
- Blueness of extremities.
- Increase of pulse rate.
- Failure to respond to signals or stimuli
- Unconsciousness with anoxia, a very rapid onset.

#### TREATMENT

If the supply of gas has been interrupted treatment is to restore the supply or switch to an alternate supply. Oxygen deficiency due to low oxygen content in the breathing gas may have no warning symptoms and signs before unconsciousness ensues. It should be treated by:

- Switching to an alternate gas supply containing sufficient oxygen.
- If diver is unconscious or incoherent, administer 100% oxygen.
- Allow resting under medical supervision.



### **ACUTE CNS OXYGEN TOXICITY (ACUTE OXYGEN POISONING)**

#### **CAUSE**

- Breathing oxygen at too high a partial pressure for too long a time.
- During in-water diving operations the main form of oxygen toxicity, which is of importance, is that involving the central nervous system (CNS). Pulmonary oxygen toxicity occurs only during long oxygen exposures such as recompression therapy or repetitive, multi-day diving using high PO<sub>2</sub>.

#### **PREVENTION**

- Limit the partial pressure of oxygen in the mixture breathed to 1.4 bar.
- Track oxygen exposure and plan diving to comply with accepted safe limits.

#### **SYMPTOMS AND SIGNS**

Symptoms tend to vary from day to day and between individuals. Signs of CNS toxicity include:

#### **V.E.N.T.I.D**

**Vision:** any abnormality such as tunnel vision (a contraction of the normal field of vision, as if looking through a tube).

**Ears:** any abnormal sounds, especially ringing or roaring.

**Nausea:** this may be intermittent.

**Twitching:** usually appears first in the lips or other facial muscle. This is the most frequent and clearest warning of oxygen poisoning.

**Irritability:** any changes in behaviour including anxiety or confusion.

**Dizziness.**

Convulsions: There are three main phases of an oxygen convulsion:

- (1) The **TONIC** phase, which is transitory in nature and often goes unnoticed by buddy divers.
- (2) The **CLONIC** phase the true convulsion.
- (3) Unconsciousness

During the tonic phase which if present may last for up to 40 seconds, the diver will arch back in the water and become rigid owing to contraction of all the involuntary muscles in his body. If a diver in this condition is brought to the surface he is in danger of suffering an embolism due to the spasm in his larynx preventing expanding gas from escaping from the lungs.



### BSAC Project Plan

Course (Project) Plan				
Dive Centre:			Review Date:	
Centre Address:			Contact Numbers:	
Course (Project)			Start Date:	
Locations to be used	1		Location 1 Date:	
	2		Location 2 Date:	
	3		Location 3 Date:	
Dive Marshal(s) Surface Supervisors	1	Print: 1	Sign:	
	2	Print: 2	Sign:	
	3	Print: 3	Sign:	
Surface Personal	1	Print: 1	Sign:	
	2	Print: 2	Sign:	
	3	Print: 3	Sign:	
Rescue Diver(s)	1	Print: 1	Sign:	
	2	Print: 2	Sign:	
	3	Print: 3	Sign:	
First Aiders	1	Print: 1	Sign:	
	2	Print: 2	Sign:	
	3	Print: 3	Sign:	
Emergency Services	Coastguard:	Expected Visibility:	Site observations:	
	Recompression:	Expected water temp:		
	Police/Ambulance:			
Equipment Checks:				

### BSAC Project Plan - Dive Team

Dive Team				
Name	Contact Details Address & Phone	Emergency Contact Details Next of kin	Qualifications	Fit to dive (sign)
Instructor				
Instructor				
Instructor				
Rescue Diver				
Rescue Diver				
Rescue Diver				
Rescue Diver				
Student				
Student				
Student				
Student				



### BSAC Project Plan - Equipment Issue

Equipment		
Item (list)	Issued by Instructor & fit for purpose (Instructor Sign)	Provided by Student & fit for purpose (Student Sign)



### BSAC Dive Log

Dive Log		
Emergency Services		
Coastguard		
Police/Ambulance/Fire		
Nearest Hospital (Address/Telephone Number)		
Recompression Facility (Address/Telephone Number)		
Location of Oxygen Equipment		
Location of First Aid Equipment		
Type of Dive (module)		
Dive Team		
Function	Name	Sign:
Dive Marshal		
Deputy Dive Marshal(s)		
Instructor(s)		
First Aider(s)		
Rescue Diver(s)		
Oxygen Administrator(s)		
Student		
Student		
Student		
Student		
Student		
Student		



