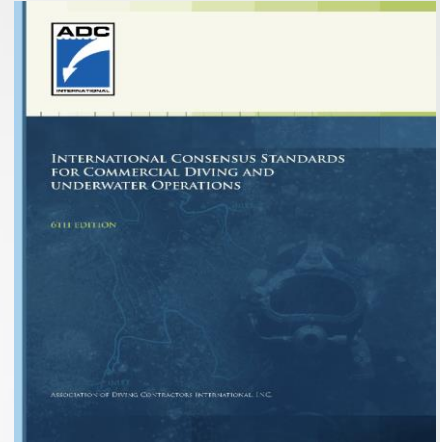




***Common Discrepancies Uncovered on ADCI Diving Contractor &  
Training Program Audits***

*Ways to Set Your Company or School Up For Success on ADCI Audits  
and Reduce Costs*



**In most instances, all discrepancies uncovered during an ADCI Diving Contractor Audit could have been avoided with greater familiarization with the most current edition of *International Consensus Standards for Commercial Diving and Underwater Operations*.**



## **Safe Practices and Operations Manual**

**In many cases, Safe Practices and Operations Manuals are not compliant with ADCI Standards. They are either not reflective of the latest version of the Consensus Standards or they are just a bulky “cut and paste” of the USN Dive Manual or other regulatory guidelines.**



## Safe Practices and Operations Manual

A copy of the Safe Practices and Operations Manuals should always be at the dive site. All Safe Practices and Operations Manuals should include the five basic components as outlined in Section 5 of the Consensus Standards.

- Safety Procedure Checklist
- Team member assignments and responsibilities
- Equipment procedures and checklist
- Emergency procedures for fire, equipment failure, adverse environmental conditions and medical illness/injury
- Specific individual procedures for tools, equipment and associated systems



## Procedures and Documentation

### Designated Diving Supervisor – ADCI Diving Contractor Audit Report Chapter I

**-No company documentation designating the diving supervisor (at the job site or in personnel file).**

**"A qualified person shall be identified in writing as the diving supervisor for each diving operation." CS<sub>3.4.1</sub>**



## Equipment Procedures and Documentation

### Personal Protective Equipment (PPE) – Section 5 ADCI CS

**-Personnel are not donning proper PPE at the dive site or in the company shop** (The appropriate ANSI (or standard used within a particular nation) approved personnel protective equipment shall be worn when required.)





## Equipment Procedures and Documentation

### Standby Diver – Section 5 ADCI CS

#### **-Standby diver not equipped to the same level as the primary diver.**

(Prior to commencement of the operation, the standby diver's equipment shall be fully verified as functioning correctly and thereafter maintained in that condition until completion of the dive. Should the standby diver be required to enter the water, a surface check shall be completed to ensure proper breathing gas supply, bailout function and effective communications before the diver leaves the surface. The standby diver shall utilize the same mode and level of equipment as the primary diver. The standby diver's umbilical must be of sufficient length to reach the primary diver in an emergency.)



## Procedures and Documentation

### Pre and Post-Dive Check of the Physical Condition of the Diver – Section 5 ADCI CS

#### **-No pre or post-dive check on the physical condition of the diver.**

(Before each dive, the diver shall be instructed to report and record any physical conditions, problems or adverse physiological effects that may render the diver unfit to dive. After the completion of each dive, the diver shall be questioned as to his or her physical condition.)

Recommend: That company dive log should indicate pre and post-dive conditions of diver (and post-dive for standby if water entry was made.)





## Procedures and Documentation

### Job Hazard Analysis (JHA) – Section 5 ADCI CS

**-No real-time JHA conducted.**

**-JHA forms do not assign responsibility for hazard mitigation.**

(Identify the persons preparing, reviewing and approving the JHA. Assign a specific person the responsibility of implementing the safety procedures or protection required.)



## Equipment Procedures and Documentation

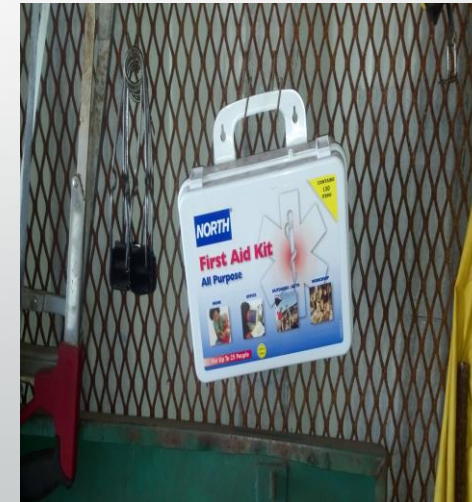
### First Aid Kit – Section 5 ADCI CS

- First Aid Kit contents does not meet ADCI inventory requirements.
- First Aid Kit expiration dates not tracked and items replaced as required.
- No First Aid Handbook accompanying First Aid Kit.
- No bag type manual resuscitator (or AED).

(First Aid Kits should be hyperbaric compatible for operations where a chamber is onsite.)



Compliant



Non-compliant



## Equipment Procedures and Documentation

### Maintenance Records – Section 6 ADCI CS

Suitable equipment logs shall be established and maintained in a correct and current condition.

Life-support equipment shall have a unique identity assigned by the manufacturer or contractor, be easily visible, permanently affixed and traceable to the equipment/maintenance log.

Entries made in the equipment log shall describe the nature of the work performed, including the dates of modification, repair or test,; the name of the individual performing the work or test; and the particular piece of equipment involved.

A preventive maintenance program is required for all life-support equipment.

Equipment Maintenance Report

Date \_\_\_\_\_ Model \_\_\_\_\_  
Equipment Type \_\_\_\_\_ Serial Number \_\_\_\_\_

Mark Code	Maintenance to be Performed	Maintenance Frequency In Days	Next Maintenance Date	Next Maintenance In Days	Done Before

EQUIPMENT MAINTENANCE FORM



## Equipment Procedures and Documentation

### Air Purity Requirements – Section 6 ADCI CS

**-No record to indicate the performance of semi-annual (6 mos.) air purity checks for all compressors, transfer pumps or booster pumps used for breathing service.**

(All compressors, transfer pumps or booster pumps used for breathing air service will be subjected to an air quality test every six months. Documentation of the latest test[s] shall be kept on file and available upon request. This includes the requirement to procure air quality certifications from 3<sup>rd</sup> party vendor supplied HP air.





## Equipment Procedures and Documentation

### Helmets and Masks – Section 6 ADCI CS

- No record to indicate the annual the internal and external inspection of helmets and masks, if required by manufacturer. (All helmets and masks and their associated diver-carried regulators shall be maintained and inspected in strict compliance with the manufacturer's recommendations. Suitable logs shall be maintained to reflect compliance.)
- Annual inspections not performed by qualified and certified technician.
- Diver-owned helmets/masks maintenance and inspections not being tracked by the company.

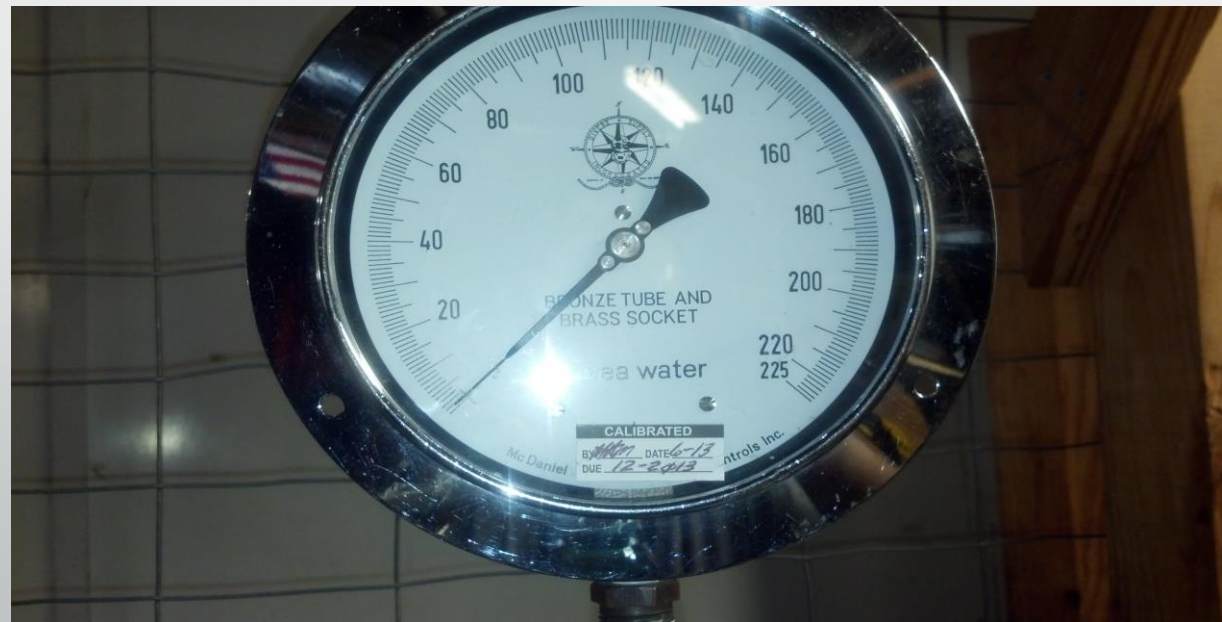




## Equipment Procedures and Documentation

### Depth Gauges – Section 6 ADCI CS

**-No record to indicate the semi-annual (6 mos.) calibration.** (Be marked with a label, tag, or sticker indicating date of last calibration and date due, which will not interfere with full-scale visibility.)





## Equipment Procedures and Documentation

### Breathing Gas Hoses(s) LP – Section 6 ADCI CS

- Pressure and pull testing not performed or performed incorrectly.** (Each hose assembly will be subjected to an annual pressure test to one-and-one-half times the design working pressure of the system. The pressure test should be maintained [when corrected for temperature] for 10 minutes.)
  - Failure to record the above test and maintain the data for future review.**
- Hose fittings should not be covered with electrical, duct tape, or any adhesive when not in use.



## Equipment Procedures and Documentation

### Umbilical(s) –Section 6 ADCI CS



- Not marked for length.** (Be marked from the diver/bell end in 10-foot intervals up to 100 feet and marked in 50- foot intervals thereafter.)
- Pressure and pull testing not performed or performed incorrectly. The company's "Design Working Pressure of the System" is not correctly determined.** (Be subjected to an annual pressure test to one-and-one-half times the "design working pressure of the system" with a 200-pound axial load applied on fittings while initial test pressure is applied. The test pressure should be maintained with out loss of pressure [when corrected for temperature] for 10 minutes.)
- Leak test of pneumofathometer hose not performed.** (Pneumo hose shall be annually pressure-tested for leakage.)
- Failure to record the above test and maintain the data for future review.** (Entries made in the equipment log shall describe the nature of the work performed, including the dates of modification, repair or test; the name of the individual performing the work or test; and the particular piece of equipment involved.)

**Umbilical fittings should not be covered with electrical or duct tape when not in use.**





## Equipment Procedures and Documentation

### Gas Storage Cylinders – Section 6 ADCI CS



- No record to indicate the annual external examination for damage and corrosion. (Be visually examined externally at least annually for damage and corrosion.)
- Cylinders hydrostatic testing not up to date. (Be hydrostatically tested every fifth year to the requirements of the code of the manufacturer by an authorized test facility and stamped with the date of the test.)
- Cylinders not assigned a unique identifier and tracked in the equipment log. (Have a unique identity with results of all tests being recorded in the equipment log).
  - Cylinders not clearly marked as to the contents and pressure. (High pressure gas cylinders or tubes shall be labeled as to contents. A record shall be kept in a designated place of the contents and pressure of each cylinder, quad, or bank. These records should be updated daily when the system is in use.)



- Cylinders not properly secured and/or stored. (If rack-mounted into banks of cylinders or tubes, have valves and regulators protected from damage caused by impact or from falling objects. Be stored in a well-ventilated area, protected from overheating and secured from falling.)



## Equipment Procedures and Documentation

### Gas Storage Cylinders (**Bailouts**) – Section 6 ADCI CS

- **No record to indicate the annual external examination for damage and corrosion.** (Be visually examined externally at least annually for damage and corrosion.)
- **Bailouts hydrostatic testing not up to date.** (Be hydrostatically tested every fifth year to the requirements of the code of the manufacturer by an authorized test facility and stamped with the date of the test.)
  - **Bailouts and regulators not assigned a unique identifier and tracked in the equipment log.** (Have a unique identity with results of all tests being recorded in the equipment log).
- **Bailout regulators not fitted with relief valve in LP port.** (Diver-worn EGS systems shall have a depth-compensating regulator on the cylinder capable of delivering the proper pressure and flow to the diver's helmet or mask in accordance with the helmet or mask manufacturer's recommendations. High pressure bottles used for scuba and EGS (bailout) shall be equipped with an overpressure relief device.)
- **Diver-owned bailouts and regulators maintenance and inspection not being tracked by the company.**





## Equipment Procedures and Documentation



### Surface Diving Decompression Chambers – Section 6 ADCI CS

- No record to indicate the annual testing of the relief valve pressure setting. (Have the relief valve pressure setting tested annually and the test recorded in equipment log.)
- No record to indicate the annual pressure test of the chamber. (Pressure test the chamber and associated piping annually to MAWP, as stamped on the chamber name plate, and recorded in the equipment log.)
- No back-up communication provided for the chamber. (Have a primary and secondary two-way voice communication system between the occupants and the operator.)
- No means for the extinguishing of fires in the chamber. (Be equipped with a readily available means for extinguishing fire.)
- BIBS not available in both the inner and outer locks (or insufficient number of BIBS). (Have an installed breathing system with a minimum of one mask per occupant per lock, plus one spare mask assembly per lock.)





## Ways to Set up a Successful Audit Experience

### Give the Contractor/School Your Full Cooperation and Responsiveness

**-Provide requested information for review in advance of the actual audit.**

- \*Safe Practices and Operations Manual
- \*List of diving personnel and their certifications
- \*List of equipment and documentation (inventory, testing, and inspection)
  - \*Sample dive plans
  - \*Sample Emergency management plans
  - \*Sample Job Hazard Analysis (JHA)



## Ways to Set up a Successful Audit Experience

### Keep Lines of Communication Open Between You and the Auditor

- Direct any questions about the process to the ADCI Office.
- If you need assistance to prepare for the audit, the ADCI Office can provide a list of vendors, consultants, or other resources.
- Outline all potential conflicts with scheduling of the audit in advance.
- It is important to address all potential areas of deficiency prior to the actual performance of the audit.



## Ways to Set up a Successful Audit Experience

### Budgeting Time

- Ensure that time has been allotted for the auditor with as little interruption as possible.
- Ensure that key personnel are available as needed (office manager, shop foreman, dive supervisor[s]) for those portions of the audit which directly involve them. This could entail attendance at debrief meetings at the office and after the dive site portion of the audit.



## Ways to Set up a Successful Audit Experience

### Additional Keys to Success

- After the audit, it is important to address all identified areas of deficiency promptly and outline timelines for completion.
- Try to set up the dive site portion of the audit within close proximity to the company office/facility.
- Ensure that you are aware of all costs and potential additional costs associated with the audit.



## Ways to Set up a Successful Audit Experience

**Finally....**

*Your cooperation in providing requested documents up front and on-site, along with addressing non-compliant items promptly, will have a direct effect on the final cost of the audit!*





*Thank You*

*Questions?*