



Commercial Diving Association (Singapore)


Safety Diving Seminar

19th August 2022

CDAS Audits: what they are about, common deficiencies / oversights from previous audits



Commercial Diving Association Singapore



SS 511: 2018 Code of Practice for Diving at Work External Audit Protocol

**MEMBER'S COMPLIANCE
3RD PARTY AUDIT**

CDAS Audit Report: 19/02 – 24/04 2020

Commercial Diving Association (Singapore)



CDAS Audited Members 2020



COMMERCIAL DIVING ASSOCIATION (SINGAPORE)

CDAS - AUDD -

1. CDAS AUDIT PLAN

This is a Commercial Diving Association Singapore (CDAS) external audit to ensure member to WSHA Approved Code SS 511: 2018 Code of Practice for Diving at Work, it will be a member's company safety documentation and determine whether their record-keeping adequate or need to be more comprehensive. It will also look beyond the current activity in and evaluate the company's safety training. The audit can involve a walk-through of the site of observation, interviewing management or employees, and reviewing company documents.

DATE	AUDIT	PREPARED BY	Ong Boon Hong William
S/N	AUDIT	CDAS STATEMENT	
1	Objectives		

- ☐ To determine Diving at Work
- ☐ To assess the
- ☐ To evaluate the
- ☐ To provide information
- ☐ To improve
- ☐ Compliance

2 Scope

- ☐ Extent and boundaries
- ☒ Physical
- ☒ Stakeholders
- ☒ Activities

CDAS SS 511: 2018 Code



COMMERCIAL DIVING ASSOCIATION (SINGAPORE)

CDAS - AUDD - AS - 20/03

AUDIT SCHEDULE TWO (2) DAYS SCHEDULE

DATE	TIME	LOCATION / PROCESS	AUDITOR	AUDITEE
DAY 1				
	0900 - 0930	Opening meeting for all Stakeholders / Auditees	William Ong	All Stakeholders / Auditees
	0930 - 1200	Workshop facility	William Ong	Workshop Manager
		Decompression chamber	William Ong	Diving Supervisor
			William Ong	Ops personnel
			William Ong	NA
			William Ong	All Stakeholders / Auditees (same as above)
			William Ong	Master and Crew/ Tech
			William Ong	NA
			William Ong	All Stakeholders / Auditees (same as above)

CDAS - ADD - EAP - 20/04

SS 511: 2018

Code of Practice for Diving at Work
External Audit Protocol
Member's Compliance Auditing



COMMERCIAL DIVING ASSOCIATION (SINGAPORE)

CDAS - A DO - ARP - 20/05

Commercial Diving Association
(Singapore)

AUDIT REPORT

SS 511: 2018
Code of Practice
for
Diving at Work
External Audit
for
Compliance
Report

CDAS Member	
Address	
Contact Person	

AUDIT DATE	REPORT DATE
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REPORT PREPARED BY	Ong Boon Hong William
REPORT REVIEWED BY	
REPORT APPROVED BY	



SS 511: 2018 Code of Practice for Diving at Work External Audit for Compliance



COMMERCIAL DIVING ASSOCIATION (SINGAPORE)

CDAS - ADD - AFU - 20/08

AUDIT FOLLOW UP ACTION PLAN

AUDIT REPORT:

Findings Clause No.	Proposed Corrective Action	Person Responsible	Estimated Completion Date	Verified By	Verification Date
5.6.2.1	5.0 Personnel, Training and Records Incentive to inculcate maintaining diver's log and specific design logbook for onshore diving work.				
5.6.3.2	5.0 Personnel, Training and Records To use specific supervisor logbook rather than diver's logbook. Supervisor don't see the rationale of documenting the records. In the past there was no requirement.				
12.6.9.5	12 Specific Requirements for SSBA / SSDE Diving Operations Global Harmonised System of Classification and Labelling http://www.wshc.sg/ghs				

AUDIT DATE	REPORT DATE	FOLLOW UP ACTION DATE
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REPORT PREPARED BY	William Ong (Auditor)	DATE	
REPORT REVIEWED BY		DATE	
REPORT APPROVED BY		DATE	

Page 1 of 1

CDAS Membership Audit Checklist
January 2020

Examples
Having a "No" response to:
<ul style="list-style-type: none"> • WSH Legal requirements. • SS511 requirements. • Any other item the CDA(S) EXCO deems as mandatory (e.g. company registration)
Example 1: Company does not have a LP compressor A response of "N/A" (not applicable) does not constitute an NC, as a company can run SSDE dives on HP alone and still be compliant with the SS511. However, if the company does have an LP compressor, then the requirements for the LP compressor become mandatory.
Example 2: Company does not have its own dive boat As above.
Examples of recommended items:
<ul style="list-style-type: none"> • ISO 9001 certification. • ISO 45001 or BizSafe Star • In-house dive technicians

COMMERCIAL DIVING ASSOCIATION (SINGAPORE)

www.cdass.sg



CDAS Audited Members 2020

WSHCOUNCIL
Workplace Safety and Health Council

1500 Bendemeer Road
#04-01 MOM Service Centre
Singapore 339948
contact@wshc.sg
www.wshc.sg

Date: 28 August 2019

Procuring safe commercial diving services

Dear Sir/Madam,

The Workplace Safety and Health (WSH) Council, in consultation with the Ministry of Manpower (MOM), urge your organisation to play your part in ensuring the safety and health of commercial divers and fulfil your duties under the WSH Act, as principals who procure the services of commercial diving contractors.

This includes procuring services of diving contractors that have the necessary expertise to carry out work safely and ensuring that they have taken adequate safety and health measures. Here are the key areas that your organisation should take note of:


- Dive team is trained, qualified and competent;
- Site-specific risk assessment (RA) is conducted; and
- Dive plan includes emergency and contingency plans.

The WSH Council would also like to remind everyone to "Take Time to Take Care" of their safety and health at work. Look out for one another at work and about out a word of care to stop each other from carrying

For more information and resources on commercial diving safety

- [List of Acceptable Commercial Diving Certifications](#)
- [Technical Advisory for Inland/Inshore Commercial Diving Safety and Health](#)
- [SS511:2018 Code of Practice For Diving At Work](#)

Commercial Diving Code to be revised



The Singapore Standard Code of Practice for Commercial Diving will be revised later this year to ensure that only those with proper certification are hired to do commercial diving work. (F10775) MENCAST 2018/24

PUBLISHED
JUN 5, 2017, 5:00 AM SGT

Move to rein in firms hiring recreational scuba divers to do work that may be hazardous.
By Jan Sen
Business Correspondent

Instead of using divers who are certified for commercial diving, some dive companies here are taking shortcuts and saving costs by hiring experienced divers without proper qualifications.

To close this and other loopholes, the Singapore Standard Code of Practice for Commercial Diving, or the SS 511 code, will be revised later this year, said Mr Abdul Malik, chairman of the Commercial Diving Association of Singapore (CDAS). The SS 511 code was last revised in 2010.

The latest revision follows a court case last year where a local diving company was fined \$225,000 over the drowning death of one of its staff, a former Indian navy diver.

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4

Coun
Diver
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Canas
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Malay
Norwa
Singa
South
Unite
Unite
ADCI
IMCA
Diver
Austr




SS 511 : 2018
(ICS 13.100)

SINGAPORE STANDARD Code of practice for diving at work

Published by
**Enterprise
Singapore**



THE STATUTES OF THE REPUBLIC OF SINGAPORE

WORKPLACE SAFETY AND HEALTH ACT

(CHAPTER 354A)

(Original Enactment: Act 7 of 2006)

Workplace Safety and Health
Cap. 354A, Rg 8] / (Risk Management) Regulations [2007 Ed. p. 1

WORKPLACE SAFETY AND HEALTH ACT
(CHAPTER 354A, SECTION 65)

WORKPLACE SAFETY AND HEALTH (RISK MANAGEMENT)
REGULATIONS

ARRANGEMENT OF REGULATIONS

Regulation

1. Citation
2. Definitions
3. Risk assessment
4. Elimination and control of risk
5. Records of risk assessment, etc.
6. Provision of information
7. Review of risk assessment
8. Offences

[1st March 2006]

Citation

1. These Regulations may be cited as the Workplace Safety and Health (Risk Management) Regulations.

Definitions

2. In these Regulations—

"hazard" means anything with the potential to cause bodily injury, and includes any physical, chemical, biological, mechanical, electrical or ergonomic hazard;

"risk" means the likelihood that a hazard will cause a specific bodily injury to any person;

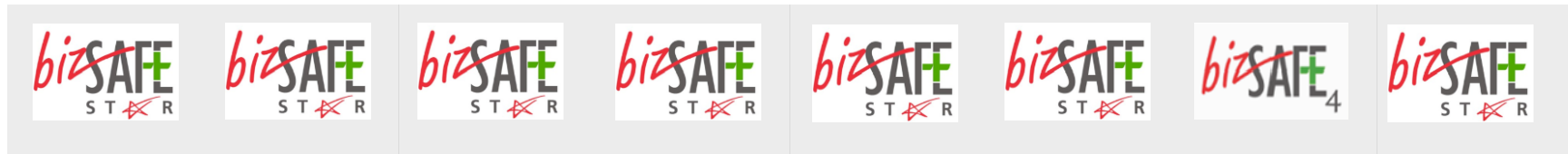
"risk assessment" means the process of evaluating the probability and consequences of injury or illness arising from exposure to an identified hazard, and determining the appropriate measures for risk control.

Informal Consolidation – version in force from 1/10/2007

CDAS Audited Members 2020



M1	M2	M3	M4	M5	M6	M7	M8
Divetech Marine Services Pte Ltd	SeaTec Services Pte Ltd	KBA Marine Services Pte Ltd	Ocean Works Asia Pte Ltd	International Marine Ind Diving Pte Ltd	Mencast Subsea Pte Ltd	Dive Marine Services Pte Ltd	West Squadron Marine Services Pte Ltd



Classification Societies

1-2-3-4-5-6-7-8-9-10

9

1-3-5-6-9-10

1-5

1-3-4-6-9

1-3-4-5-6-7-9-10

1-3-4-5-6-8-9-10



Classification Societies





CDAS Audited Members 2020

Audit Scoring Criteria.

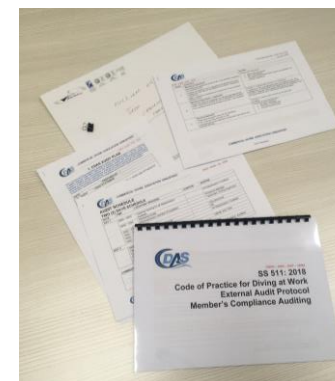
Finding	Definition/Impact	Action/Mitigation
COMPLIANT	Compliant means adherence with the requirements of the standard and the RM. The process is implemented and documented, and records exist to verify this.	Continue to monitor trends/indicators.
OFI	A low risk issue that offers an opportunity to improve current practice. Processes may cumbersome or overly complex but meet their targets and objectives. Unresolved OFIs may degrade over time to become non-compliant.	Review and implement actions to improve the process(s). Monitor trends/indicators to determine if improvement was achieved.
MINOR N/C	A medium risk, minor non-conformance resulting in deviation from process practice not likely to result in the failure of the management system or process that will not result in the delivery of non-conforming products nor reduce the effectiveness of the RM.	Investigate root cause(s) and implement corrective action by next reporting period or next scheduled audit.
MAJOR N/C	A high risk, major non-conformance which directly impacts upon customer requirements, likely to result in the customer receiving non-conforming products or services, or which may reduce the effectiveness of the RM.	Implement immediate containment action, investigate root cause(s) and apply corrective action. Re-audit in 4 weeks to verify correction.

s/n	Member	Audit Clause	Audit findings	Score	Follow Up Action
1		5.0 Personnel, Training and Records 5.6.3.2 5.6.2.1 12 Specific Requirements for SSBA / SSDE Diving Operations 12.6.9.5	OFI OFI OFI	3 OFI	C C C
2		5.0 Personnel, Training and Records 5.6.3.1 5.6.3.2 9.0 Diving Equipment 9.4.1 9.6.1.1 9.7.6.8 10 Dive Site Requirements 10.1.1 12 Specific Requirements for SSBA / SSDE Diving Operations 12.6.9.1	OFI OFI OFI OFI OFI OFI OFI	7 OFI	C C C C C C C
3		9.0 Diving Equipment 9.7.6.8	OFI	1 OFI	C
4		9.0 Diving Equipment 9.7.6.8	OFI	1 OFI	C

CDAS Audited Members 2020

5	4.0 Roles and Responsibilities		6 OFI	
	4.1	MNC	1 MNC	C
	4.2.1	OFI		C
	4.2.2	OFI		C
	6.0 General Diving Procedures			
	6.1.1.3	OFI		C
	6.1.3.2	OFI		C
	9.0 Diving Equipment			
6	9.6.2.2	OFI		C
	9.7.6.8	OFI		C
	6.0 General Diving Procedures		2 OFI	
	9.6.2.3	OFI		C
7	9.0 Diving Equipment			
	9.6.2.3	OFI	4 OFI	C
	9.7.6.8	OFI		C
	10 Dive Site Requirements			
	10.1.1	OFI		C
	12 Specific Requirements for SSBA / SSDE Diving Operations			
8	12.6.5.2	OFI		C
	9.0 Diving Equipment		1 OFI	
	9.7.6.8	OFI		C

Only 1 Minor Non-conformance sited



CDAS Audited Members 2020

9.6 First aid and medical equipment

9.6.1 General

9.6.1.1 Appropriate first aid equipment should be made available at the dive site, the contents of which should take into account the possible diving hazards at each dive site and should be able to cope with any foreseeable emergency. As such, the first aid training and medical experience of the dive team members should be taken into account (see 5.5). At a minimum, provision for airway suction and transport of an unconscious person (i.e. a stretcher should be provided in addition to any requirements from a regulatory or certifying body).

9.6.1.2 A dedicated first aid kit for the decompression chamber shall also be made available. The items in the diving first aid kit should reflect those that have been established in the relevant standard. Personnel should be trained to use the medical equipment in the diving medical kit.



A dedicated first aid kit for the decompression chamber

9.6.2 Oxygen resuscitation equipment

9.6.2.1 In addition to the first aid medical equipment mentioned above, an oxygen resuscitation set shall be available at the dive site for immediate use.

9.6.2.2 The oxygen resuscitation set shall be able to supply 100% medical oxygen to:

- (a) a breathing patient; and
- (b) a non-breathing patient via artificial ventilation.

9.6.2.3 There shall be sufficient 100% medical oxygen available to supply the resuscitator to get the patient to the nearest safe haven/medical facility.

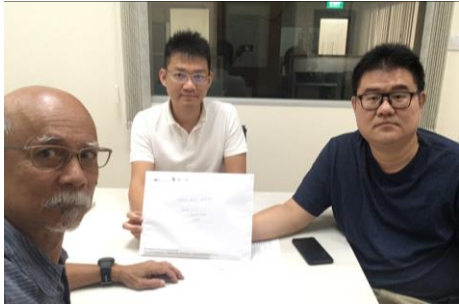


9.6.3 Automated external defibrillator (AED) Equipment

In addition to the first aid medical equipment mentioned above, an AED unit shall be available at the dive site for immediate use.



CDAS Audited Members 2020



Started 19/02/2020 – Ended 24/05/2021

CDAS Audited Members 2020

Auditor's comment:

I have observed that most of the CDAS members would have no problem to provide evidence of commercial diving legal requirements as they have other third parties' audits such as but not limited to:

- ☐ IMCA
- ☐ ADCI
- ☐ ISO 45001
- ☐ ISO 9001
- ☐ Classification Society
- ☐ BizSafe Star

Compliance to SS 511: 2018 Code of Practice for Diving at Work required by CDAS for their members is a commitment statement and manifestation of meeting standards.

Continuous improvement requires the participation of everyone in the association.

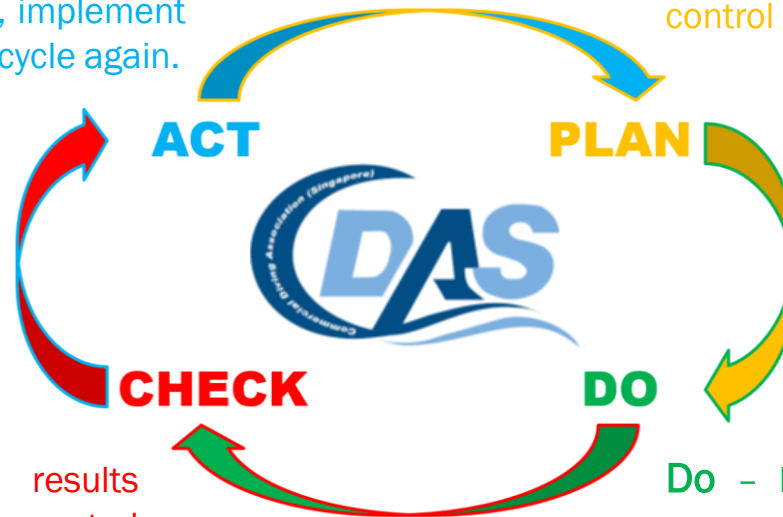
This includes the chairman, executive council members, and members. The continuous improvement program becomes effective when members are engaged in:

- ☐ Developing the culture and are proactive in identifying areas for improvement.
- ☐ Everyone should understand their role and contribution to association's continuous improvement program.
- ☐ Only by “diving” together can the goals of the improvement program be achieved.
- ☐ Part of working together on this effort is sharing the responsibility of the program across the entire association.

CDAS Audited Members 2020

Act – Document the results, inform members about process changes, and make recommendations for the future PDCA cycles. If the control measures was successful, implement it. If not, repeat the PDCA cycle again.

Plan – Identify the problem, collect relevant data, and understand the Hazards/Risks, develop safe work procedures about what the Hazards/Risks, and plan additional control measures.



Check – Confirm the results through before-and-after control measures. Study the result, measure effectiveness, and decide whether the ALARP control measures is supported or not?

Do – Develop and implement risk assessments control measures; gauge its effectiveness and measure the results.

PDCA cycles

slido



What is the first document for diving companies to review in order to kickstart the CDAS membership audit process

① Start presenting to display the poll results on this slide.