

Key Findings from Commercial Diving Inspections



MINISTRY OF
MANPOWER

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Occupational Safety & Health Inspectorate
19 Aug 2022



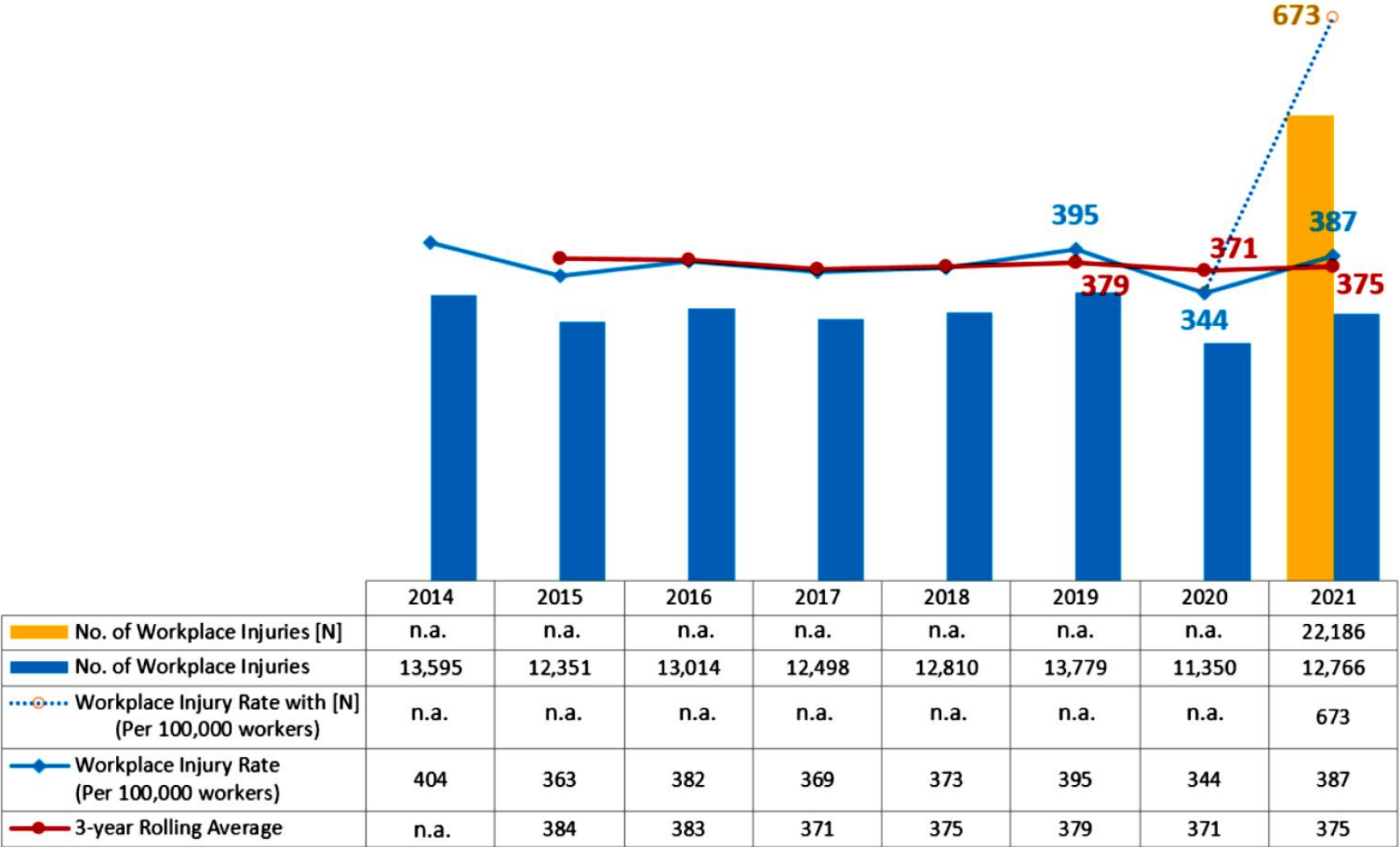
Overview of Presentation



- WSH Statistics
- Commercial Diving Inspection Findings
- Accident Case Studies



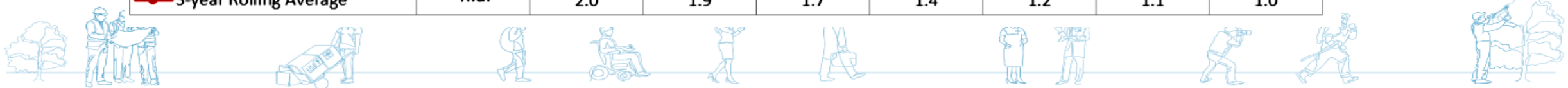
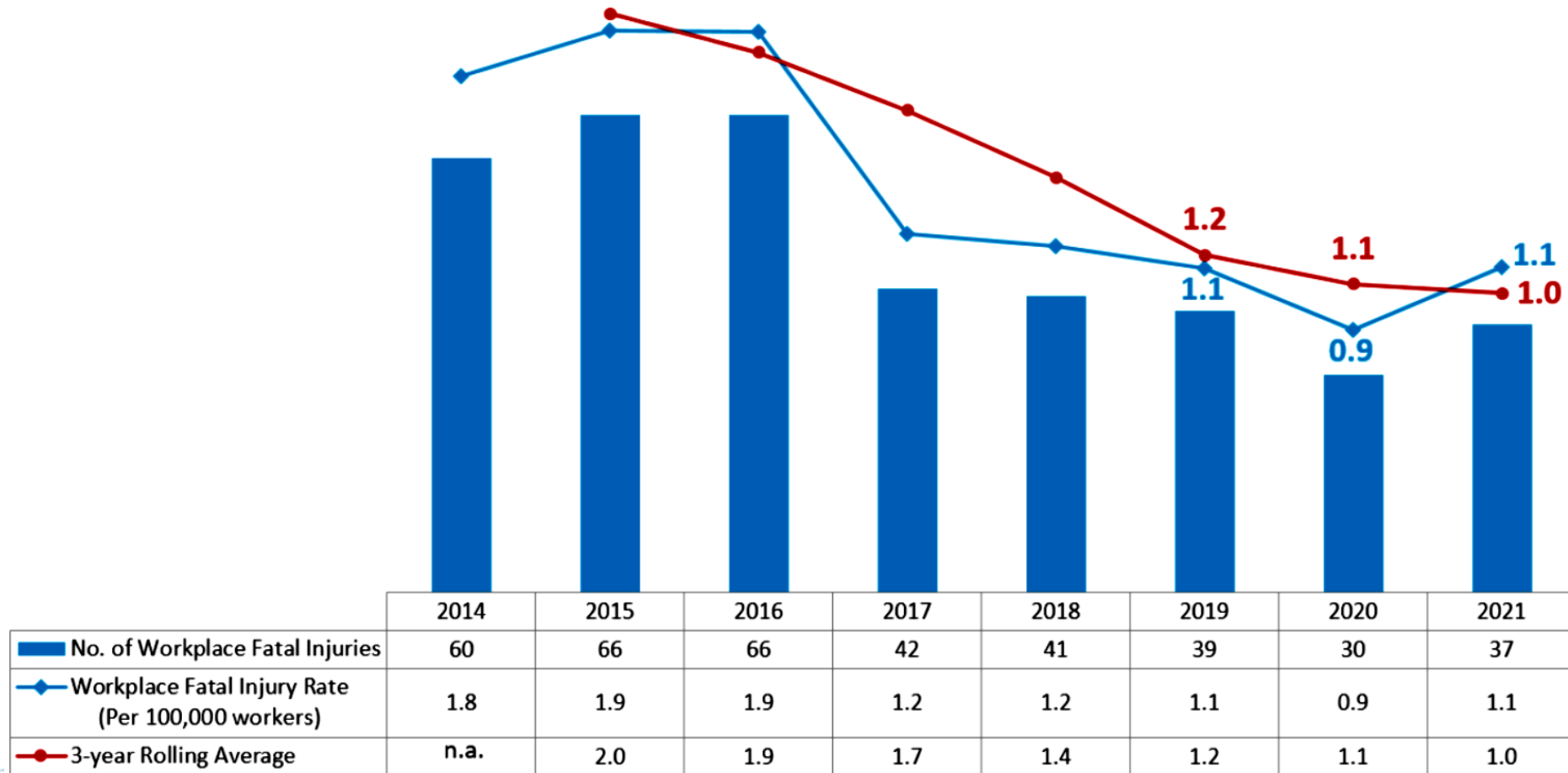
Number and Rate of Workplace Injuries, 2014-2021



[N] New Series . Injuries with any instance of medical leave or light duties.



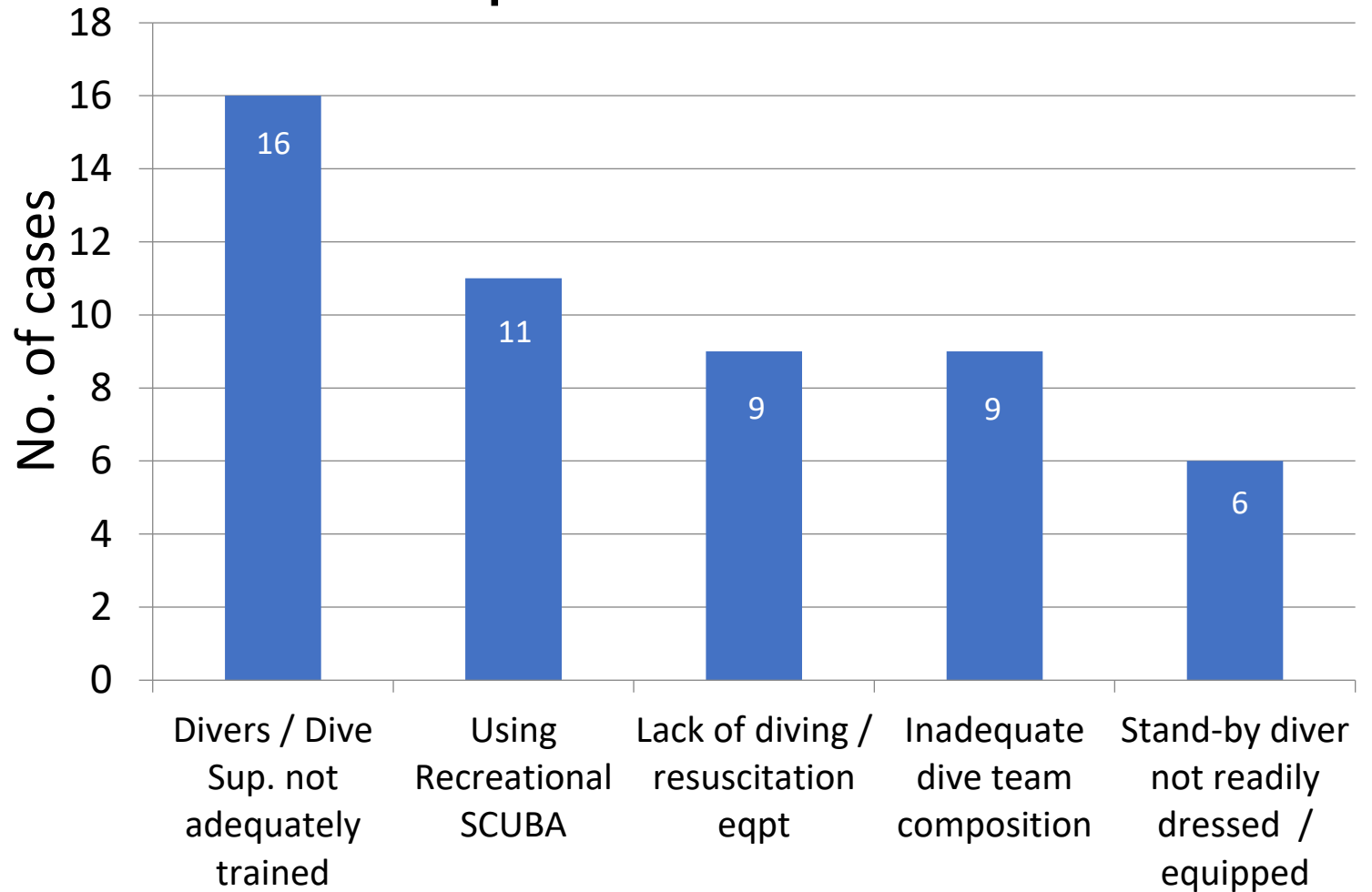
Number and Rate of Workplace Fatal Injuries, 2014-2021



Top 5 Contraventions from Inspection Findings



Top 5 Contraventions



(1) Key Findings: Divers/Dive Supervisors not certified

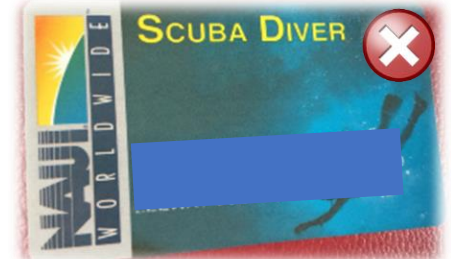
Clause 5 of SS 511: 2018 - Code of Practice for Diving at Work

Divers and Dive Supervisors should be trained and certified with the relevant Commercial Diving Competency Standards for Inland/Inshore issued by Workplace Safety and Health Council



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Examples of unacceptable diving standards for commercial diving



Commercial Diving Services

When procuring the services of commercial diving contractors, you must ensure that the appointed contractor has the necessary expertise to carry out work safely.

To know if the divers and/or diving supervisors possess recognised diving qualifications, check out the [List of Acceptable Commercial Diving Certifications \(PDF\)](#).

For More Information

- SS 511: Code of practice for diving at work



List of Acceptable Commercial Diving Certifications

Annex C

4 List of Acceptable Commercial Diving Certifications

Country / Accreditation	CSCUBA (30m)	CSSE (30m)	Offshore (50m)
Divers			
Australia (ADAS)*	Occupational SCUBA to 30m (previously, ADAS Part 1)	Occupational SSBA to 30m (previously, ADAS Part 2)	Occupational SSBA to 50m (previously ADAS Part 3)
Canada (DCBC)*	Unrestricted SCUBA	Restricted Surface Supplied Diver	Unrestricted Surface Supplied Diver & above
France (INPP)*	Class 1 Mention A – (SCUBA and Surface Supply to 40m)	Class 1 Mention A – (SCUBA and Surface Supply to 40m)	Class II Mention A
Malaysian (CIDB)*	Construction Diver Level 1	Construction Diver Level 2	N/A
Norway (PSA)*	N/A	N/A	Norwegian PSA Class 1 Surface Oriented Diver
Singapore (MOM)	CSCUBA Diver	SSDE Diver	N/A
South Africa (DOL)*	Class IV Diver (SCUBA)	Class IV Diver (SSDE)	Class II Diver (SSDE)
United Kingdom (HSE) pre 1998	HSE part 4	HSE part 3	HSE part 1 & HSE part 2
United Kingdom (HSE) post 1998	HSE SCUBA	HSE Surface Supplied	HSE Surface Supplied with Top Up & above
ADCI*	Inland / Inshore Diver (need to be supplemented with any certification in the List of Acceptable Commercial Diving Certifications)		ADCI surface supplied diver certificates bearing the words "INTERNATIONAL ENDORSEMENT"
IMCA* approved training member	N/A	N/A	IMCA Surface Supplied Diver
Diving Supervisors			
Australia (ADAS)*	Onshore Diving Supervision SCUBA to 30m (previously, ADAS Part 1)	Onshore Diving Supervision SSDE to 30m (previously, ADAS Part 2)	ADAS Offshore Air Diving Supervisor & ADAS Closed Bell Diving Supervisor (previously, Offshore Air/Bell)

Offshore Air/Saturation Diving Supervisor
N/A
N/A
N/A
N/A

IMCA Offshore Air Diving Supervisor & Mix Gas Bell Diving Supervisor
 diving activities are provided with
 While divers may possess overseas
 in the WSH Act, relevant industry

standards such as the SS511 Code of Practice for Diving at Work are complied with. Some of these local requirements can be taken in reference from section 2.1.1 Legislation and Standards (CD-CCD-100A-0) of the Commercial Diving Competency Standard ([Link](#)).

Abbreviations:

ADAS	Australian Diver Accreditation Scheme	CTAG	Curriculum, Training and Assessment Guide
DCBC	Diver Certification Board of Canada	CSCUBA	Commercial Self-Contained Underwater Breathing Apparatus
DOL	Department of Labour	SSDE	Surface Supplied Diving Equipment
INPP	Institut National de Plongée Professionnelle	MOM	Ministry of Manpower
HSE UK	Health Safety Executive (United Kingdom)	ADC UK	Association of Diving Contractors
ADCI	Association of Diving Contractors International	PSA	Petroleum Safety Authority
IMCA	International Marine Contractors Association		

ADAS
Australian Diver Accreditation Scheme

D.O.B: [REDACTED]

ADAS No: [REDACTED]

Expiry: [REDACTED]

Please see reverse for details of qualification

This card is valid only with a current diving medical certificate

DIVER

Association of Diving Contractors International

COLOR PHOTO

Cert. # 1234

Expires 12/2018

SAMPLE

INTERNATIONAL ENDORSEMENT

SURFACE SUPPLIED AIR DIVER

I.D. [REDACTED]

Commercial Diver Certification Card

A Great Workforce A Great Workplace

(2) Key Findings: Use of Recreational SCUBA equipment for Commercial Diving Operation

1.2 Scope

The guide covers two diving methods, namely Surface-Supplied Diving Equipment (SSDE)/ Surface-Supplied Breathing Apparatus (SSBA) and Commercial Self-Contained Underwater Breathing Apparatus (CSCUBA). Recreational Self-Contained Underwater Breathing Apparatus (SCUBA) shall **not** be used for commercial diving operations.

The scope does not cover recreational diving/technical diving, scientific diving, archaeological diving projects as well as diving activities using oxygen-enriched gas mixtures (NITROX).

Note

Recreational SCUBA diving qualifications and military diver training shall not be suitable for commercial diving operations outlined in these WSH Guidelines.

Examples of inappropriate recreational SCUBA being used for diving works



Workplace Safety and Health Guidelines

Inland/Inshore Commercial Diving



(2) Key Findings: Use of Recreational SCUBA equipment for Commercial Diving Operation

Examples of proper SSBA/SSDE/CSCUBA being used for diving works

Clause 13.2.2 of SS 511: 2018 - Code of Practice for Diving at Work

CSCUBA diving shall not be used when (f) the dive maximum depth is planned to exceed 30 msw (meters of sea water).

Please refer to clause 13.2.2 for more information on the restriction with regards to the use of CSCUBA



Figure 1: SSDE/SSBA diver.



Figure 2: CSCUBA diver.



(3) Key Findings: Lack of Proper Diving Equipment

Clause 9 of SS 511: 2018 - Code of Practice for Diving at Work

All plant and equipment used in diving operations shall comply with the relevant requirements as stated in 11.6, Clause 12 and 13.

- *Clause 12 – Specific requirements for SSBA/SSDE diving operations*
- *Clause 13 – Specific requirements for CSCUBA diving operations*

- Limited air supply in self-contained breathing apparatus cylinder with diver at risk of air exhaustion.
- No life-line attached to recover diver under various emergency situation.
- Dive supervisor unable to communicate with the diver directly and monitor the progress of work real-time



Example of improper diving equipment provided



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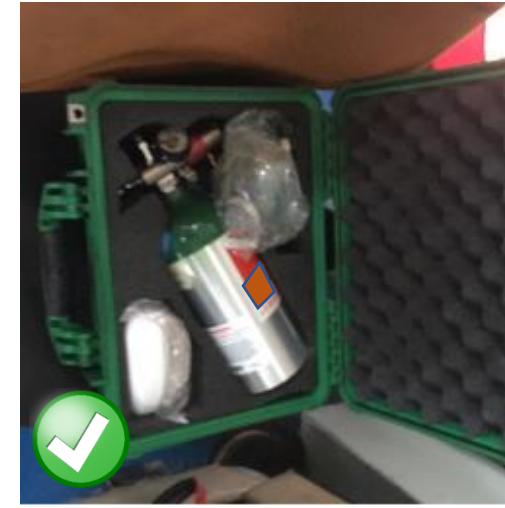
Examples of correct diving equipment provided



(4) Key Findings: Resuscitation Equipment Not Readily Available on Dive Boat

Clause 9.6 of SS 511: 2018 - Code of Practice for Diving at Work

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 and should be able to cope with any foreseeable emergency.



Examples of resuscitation equipment made available

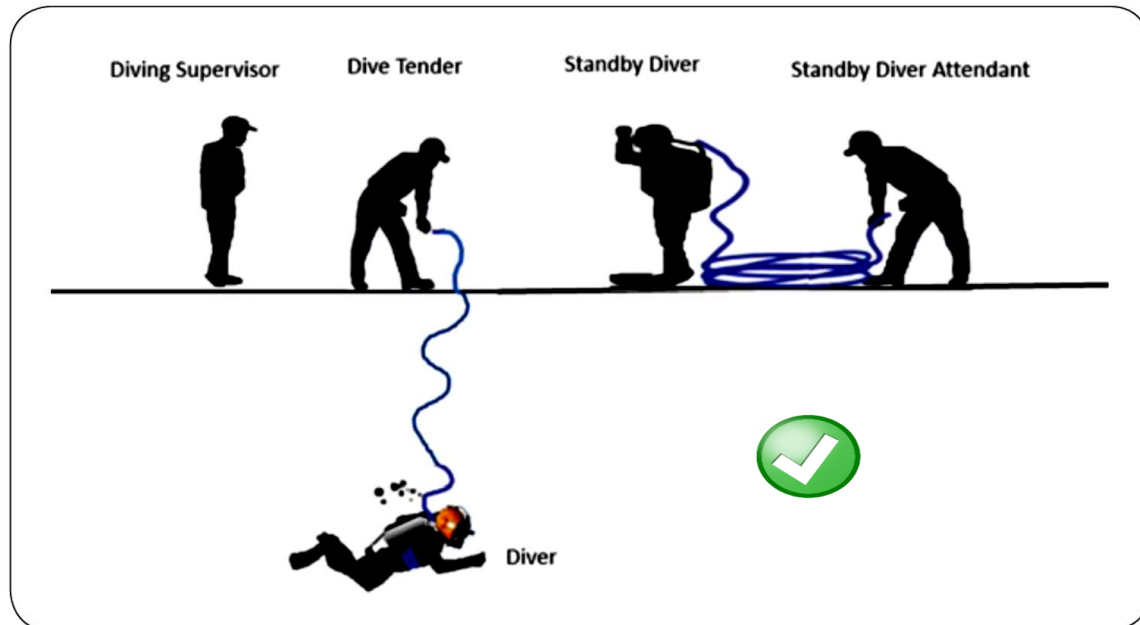


(5) Key Findings: Inadequate Dive Team Composition

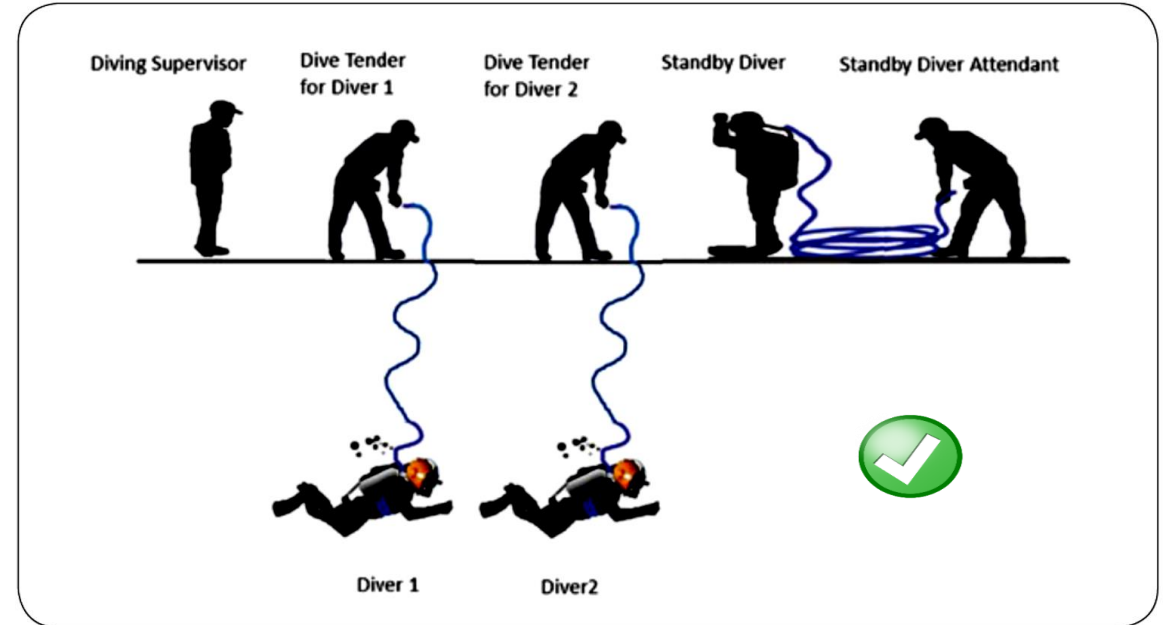
Clauses 12.2 & 13.3 of SS 511: 2018 - Code of Practice for Diving at Work

The number of persons for each diving operation shall comply with the minimum requirements as given in Table 1 for SSDE and Table 2 for CSCUBA, and in addition be sufficient to carry out all diving operations safely.

5-person team with 1 diver



7-person team with 2 divers



(6) Key Findings: Standby Diver Not Readily Dressed or Equipped on Dive Boat

Clause 4.5(b) of SS 511: 2018 - Code of Practice for Diving at Work

The standby diver shall remain on the surface unless required for an emergency. The standby diver should be dressed to enter the water, but need not be wearing a mask or helmet. This equipment should, however, be immediately available for use.

Examples of standby divers not fully dressed as required



Example of standby diver fully dressed as required



- Standby diver shall be ready to respond promptly to any emergency situations upon activation by the diving supervisor.



Accident case studies presented during seminar have removed from this deck of slides for distribution



In the News

Tuesday, June 14, 2022

THE STRAITS TIMES

Stiffer penalties for firms with poor workplace safety

Aqil Hamzah

Companies with poor workplace safety and health (WSH) performance will incur stiffer penalties from today.

These include the doubling of composition fines for offences observed during safety inspections, up to a maximum of \$5,000, the Ministry of Manpower (MOM) said.

Companies that have been issued stop-work orders or have had workers experiencing major injuries will also have to engage external auditors to review current systems.

Speaking to reporters after a worksite safety inspection in Defu Lane yesterday, Senior Minister of State for Manpower Zaqq Mohamad said it is important to tackle the issue upstream.

"From our recent inspections, including today's, it is clear that companies need to take greater ownership of safety at the workplace," he said, adding that MOM will be placing more accountability on company management.

Enhanced enforcement measures are being introduced in the wake of a spike in workplace fatalities.

There have been 26 cases this year to date – the most in the same



Officers from the Manpower Ministry's Occupational Safety and Health Division measuring a platform's height at a worksite safety inspection yesterday. The inspection was part of ramped-up enforcement efforts. ST PHOTO: FELINE LIM

period since 2016.

The surge prompted a call for employers to implement a safety time-out last month to review workplace safety and health.

MOM said more than 200 major injuries were reported during the first four months of this year.

It added that 65 per cent of fatalities and major injuries involved workers employed by small and medium-sized enterprises.

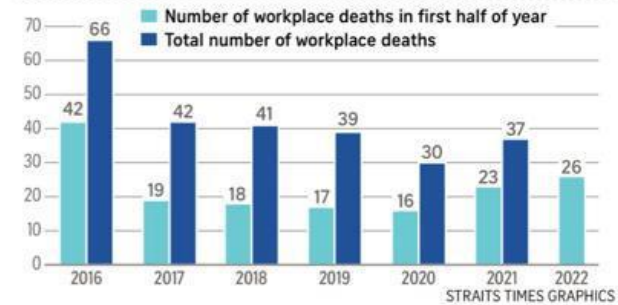
During the inspection, Mr Zaqq

and a team of MOM officers looked through the various operations and safety features put in place by Goh Seng Lai Company, a contractor that specialises in setting up tents and stages for events.

Several safety violations were flagged by MOM officers, including the use of an unlicensed forklift operator and the lack of guardrails on the second floor of the company's premises.

The company will be issued a

Workplace fatalities



stop-work order.

The worksite safety inspection yesterday was part of MOM's ramped-up enforcement efforts, which were announced in April.

More than 1,400 inspections have been conducted in the second quarter of this year, almost double the number for the same period last year.

About 3,300 enforcement actions have been issued since April, with MOM placing an emphasis on work at height, as well as machinery and vehicular safety.

These inspections have largely been centred on the manufacturing, construction and marine shipyard sectors.

Urging workers to report unsafe working conditions to their supervisors or to MOM, Mr Zaqq said: "Many of these fatalities and workplace injuries were preventable, and were not due to inexperienced workers.

"Instead, they occurred due to basic safety lapses, such as inadequate control measures and lack of compliance with proper work methods.

"This goes to show that company management must prioritise workplace safety and health while managing the progress of their work."

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Announced by Senior Minister of State for Manpower, Mr Zaqq Mohamad that stiffer penalties will be issued to errant companies. This include:

- Doubling of composition fines for offences uncovered during inspections
- Companies issued with SWOs or have workers with major injuries have to engage external auditors to review current WSH system



In the News

Tuesday, August 02, 2022

Company leaders can be prosecuted for workplace safety lapses, says Zaqy

Kok Yufeng

Company leaders can and will be prosecuted if they are culpable for workplace safety and health (WSH) lapses, and compliance with an upcoming code of practice outlining their duties will be considered in the event of an offence.

Senior Minister of State for Manpower Zaqy Mohamad said yesterday that the Approved Code of Practice (Acop) for Company Directors' WSH Duties will be published later this year, with public consultations to begin this month.

"We are putting managements and boards on notice that the Acop is coming," he told Parliament in response to a speech by Mr Melvin

Yong (Radin Mas).

The authorities are also reviewing whether to expand the requirement for WSH staff to more workplaces, Mr Zaqy added.

In his speech, Mr Yong had called for more action to beef up workplace safety in the light of an alarming rise in workplace fatalities and injuries.

There have been 31 work-related deaths so far this year, the most over the same period since 2016 and more than the 30 deaths recorded in the whole of 2020.

Mr Yong had asked whether the upcoming code of practice could be written into law to give it "legislative teeth".

He cited an Australian case where two recycling company directors were jailed after a worker

was killed, and noted that it is a legal requirement in Australia for company directors and business owners to ensure their employees' safety.

Mr Yong also noted that Sweden requires every company, regardless of size and industry, to have a WSH representative.

"In Singapore, where we pride ourselves on being efficient and attentive in all that we do, we certainly need to do more, and do better," the labour MP said.

He acknowledged that some steps have been taken to curb the rising number of workplace deaths, but "the Government's actions alone are not enough".

Noting that a factor behind the recent spate of accidents has been the rush to catch up on work affected by Covid-19 disruptions, he called for minimum rest hours for workers in higher-risk sectors to be legislated.

"If employers are pushing our workers to - quite literally work towards their deaths - then we must surely act to stop this."

Mr Yong also called for better whistle-blowing channels.

Agreeing broadly, Mr Zaqy said the Ministry of Manpower (MOM) is extremely concerned about the recent spate of workplace deaths.

The ministry's analysis of recent

fatal accidents showed that many companies did not conduct risk assessments or follow safe work procedures. "This is disturbing - simple and totally avoidable mistakes that resulted in loss of lives," Mr Zaqy said.

He said MOM takes every report it receives on safety lapses seriously, and that there are safeguards to protect workers who report breaches.

The ministry received 2,300 reports over the past year, and 62 per cent of follow-up inspections led to enforcement action, he added.

Mr Zaqy also agreed that fatigue could contribute to accidents.

But he noted that there are already protections under the Employment Act spelling out the maximum hours an employee can work, including overtime.

Despite the recent setback, Mr Zaqy said the goal to reduce the workplace fatality rate here to less than one per 100,000 workers by 2028 still stands. Singapore can and should be held to higher standards, given its stage of development, he said.

"We must take important lessons from this episode to build a safety culture that will endure for years to come," he added.

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THE STRAITS TIMES

Radin Mas MP Melvin Yong yesterday called for more action to beef up workplace safety in the light of an alarming rise in workplace fatalities and injuries. Noting that a factor behind the recent spate of accidents has been the rush to catch up on work affected by Covid-19 disruptions, he called for minimum rest hours for workers in higher-risk sectors to be legislated. ST PHOTO: DESMOND WEE

SMS (Manpower) Mr Zaqy Mohamad announced the new Approved Code of Practice (ACOP) for Company Directors' WSH Duties that will be published by end of this year. Company leaders can and will be prosecuted for WSH lapses.

 **Thank you**

