

# Medical Issues

# SCUBA

## VS

# CSCUBA /SSDE

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# Medical Issues for Divers Working with Underwater Diving Equipment



## I. Recreational Diving Equipment

- SCUBA

## II. Professional Diving Equipment

- CSCUBA
- SSDE

# Underwater Diving Equipment

- SCUBA – Self Contained Underwater Breathing Apparatus
- CSCUBA – Commercial Self Contained Underwater Breathing Apparatus
- SSDE – SSDE-Surface Supply Diving Equipment



**SSDE-Surface Supply Diving Equipment**



**CSCUBA-Commercial Self Contained Underwater Breathing Apparatus**



**SCUBA-Self Contained Underwater Breathing Apparatus**

# Scuba Equipment You'll be Using



## Some Key Features of Recreational SCUBA

- Half Face Mask- able to be detached easily - accidentally
- Single Tank / Double Tank with Twin Tank manifold
- No Communications to Topside
- Handsignals only underwater
- Self visualization Pressure Gauge/ depth guage
- No Bailout ----a SPARE AIR...





## SCUBA GEAR



## SCUBA DIVING CHECKLIST





<https://www.facebook.com/watch/?v=458536235097943>

## **Some Key Features of CSCUBA**

- Bail out "Pony bottle"
- Bailout Valve
- Full Face mask - with Communications - topside monitoring
- Depth gauge & Fantom Line

# Commercial SCUBA Gear Up

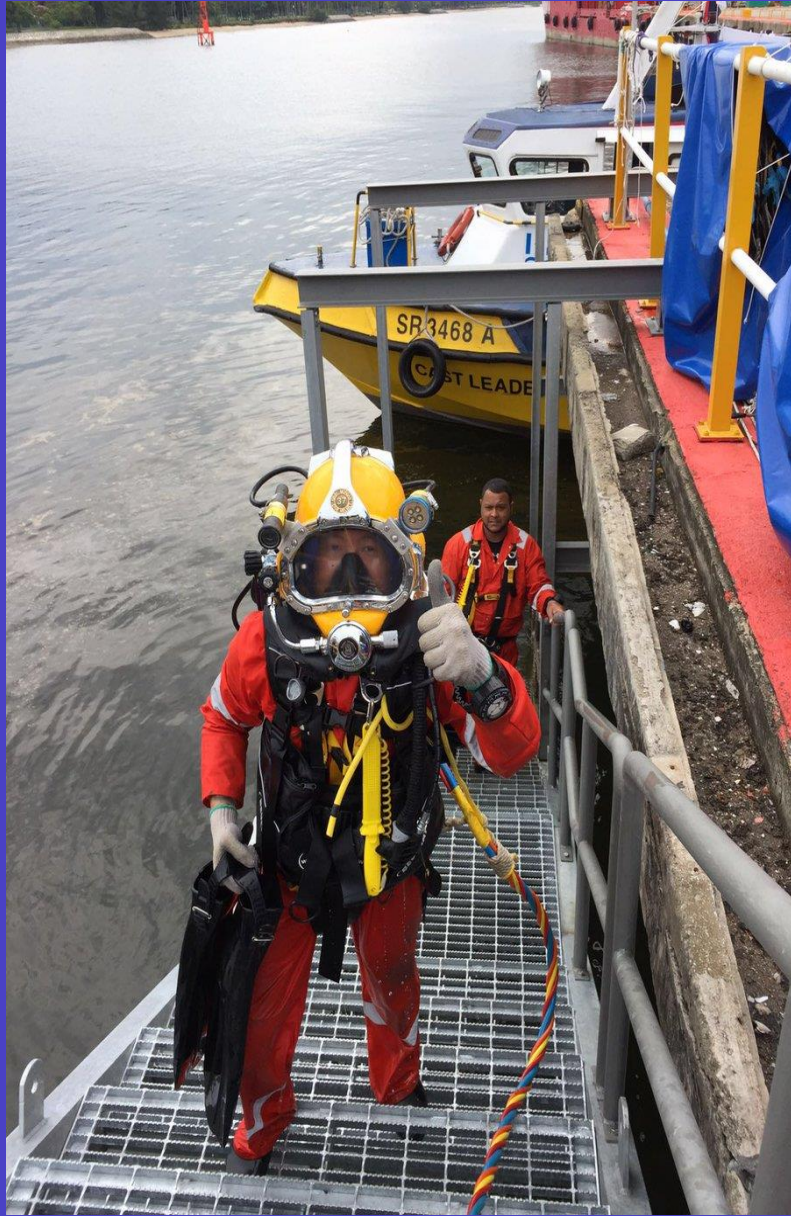


A CSCUBA diver shall be equipped with diving equipment provided by diving contractor company. Refer to SS511:2018, Clause 13.1.6 for details.

## COMMERCIAL SCUBA

1. 11 L cylinder
2. 4 L bailout
3. Comms panel
4. BCD c/w bailout clamp
5. Bootie
6. Fins
7. Gloves
8. Weight belt c/w 2 kg weight
9. Knife
10. UW torch
11. UW watch
12. FFM bailout SCUBA regulator system
13. Harness
14. 1/2 Mask
15. Full Face Mask



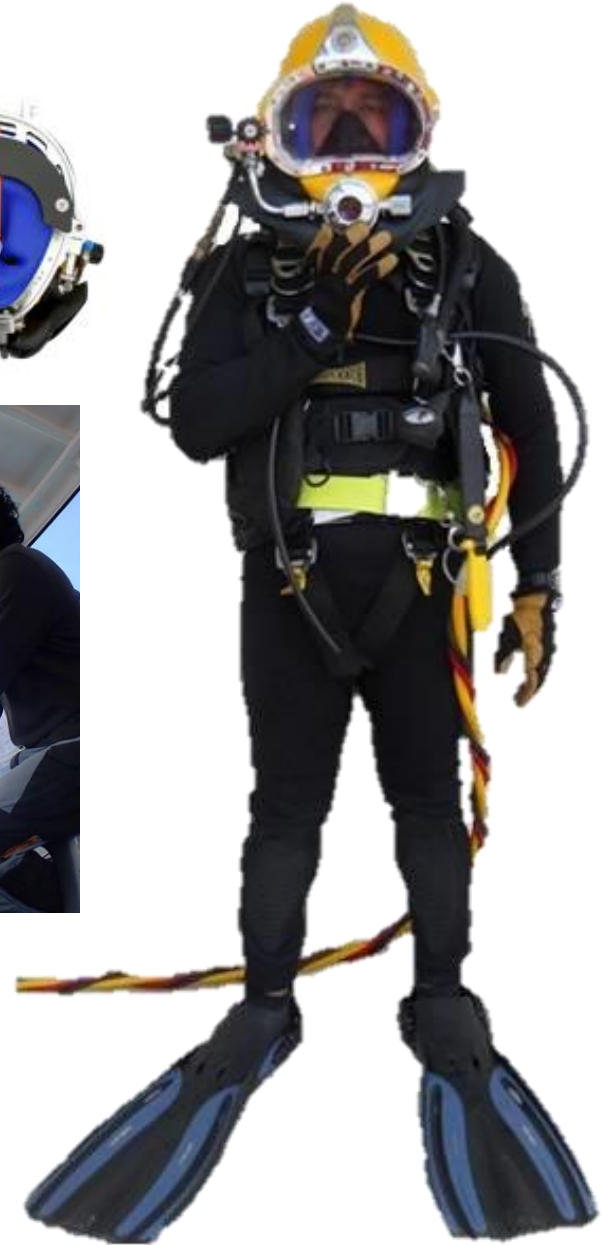


## **Some Key Features of SSDE**

- Surface Supply of Air,
- Communications, Video link - topside monitoring
- Bailout Tank with bailout valve
- Hard hat



# SSDE Gear Up



A SSDE diver shall be equipped with diving equipment provided by diving contractor company. Refer to SS511:2018, Clause 12.5 for details.

# SCUBA VS CSCUBA & SSDE

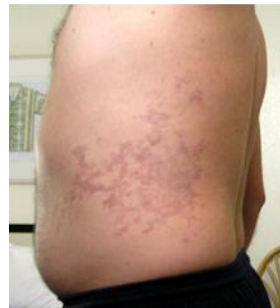
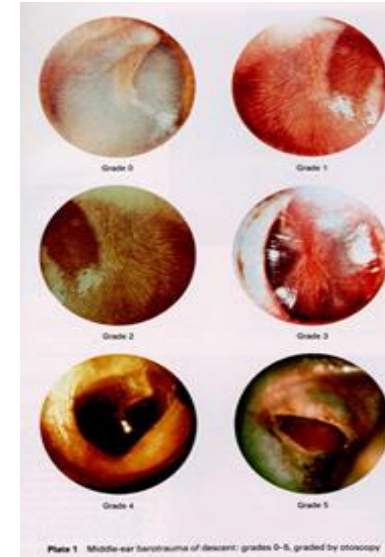
## Difference between Recreational SCUBA vs CSCUBA/SSDE

### 2.3 Differences between SSDE/SSBA, CSCUBA and Recreational SCUBA

Item	SSDE/SSBA	CSCUBA	Recreational SCUBA
Air Supply (Main)	Surface supplied	Air Cylinders — Main and Bail-out	Air Cylinder — Normally only one
Backup Air Supply from surface	Yes	Nil	Nil
Emergency Air Supply — carried by diver	Yes	Yes	Nil
Type of mask/air regulator	Full face mask or helmet/ integrated demand regulator	Full face mask/ integrated demand regulator	Half mask/separate integrated demand regulator held by a 'mouthpiece'
Voice communications	Yes	Yes	Nil
Full Body Harness	Yes	Yes	Sometimes
Lifeline using rope	Yes	Yes	Sometimes

# Medical Issues for Divers Working with Underwater Diving Equipment

- Environmental
- Operational/Occupational Hazards- Comms – verbal/ Video live video)
- Physiological



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# HAZARDS

## Medical Issues

- **Fatigue** - fighting the current/ drifting
- **Fatigue and Dehydration** - lost diver ( due to rough sea state – dehydration)
- **Swallowing of contaminated water-** half face mask with regulator in mouth
- **Reduction in field of vision** – may not see the potential hazard
- **Effects of Marine Stings and Animal bite:**
  - No Communications – as unable to inform topside of what is happening beneath – bite/sting by marine animals

# Medical Issues

## Medical Issues

- **Asphyxiation/Salt water inspiration/ Drowning/Death**
  - No Communications – sea chest – delta P issues
  - Miss communications – rope tugging technique or using the recreational scuba tank banger, underwater horn etc
  - Use of CESA – controlled Emergency Swim Ascent – a recreational diving emergency procedure to reach the surface in Open water risk of DCI/DCS, Barotrauma
- **Entrapment/ Crush injury of the Diver or crush injury of body part**
  - During docking – block placement underwater in shipyard
  - Fender crushing of divers hand – no comms to the diver
  - Crushing of diver while under water by pylon as there was no communications to the diver to move out after pylon was cut and warning the diving of the impending collapse of the pylon

# Medical Issues

## Medical Issues

- Decompression Sickness/ illness
- Cerebral artery Gas Embolism-CAGE
- Barotrauma of the Sinuses, Ears, Lungs
- Psychological Issues – out of Air underwater – may have to do Buddy breathing but as commercial divers you maybe (most probably) diving alone

# Medical Issues

# Summary

The use of the correct gear for the required job reduces the overall hazards and subsequently reduces the potential medical issues which may result from the hazard.

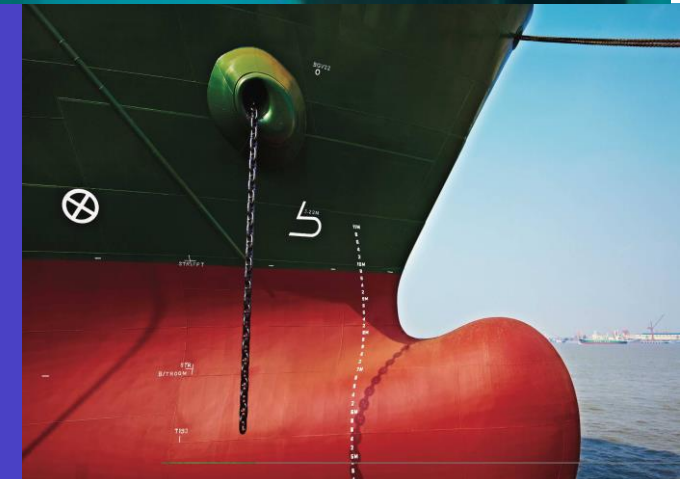
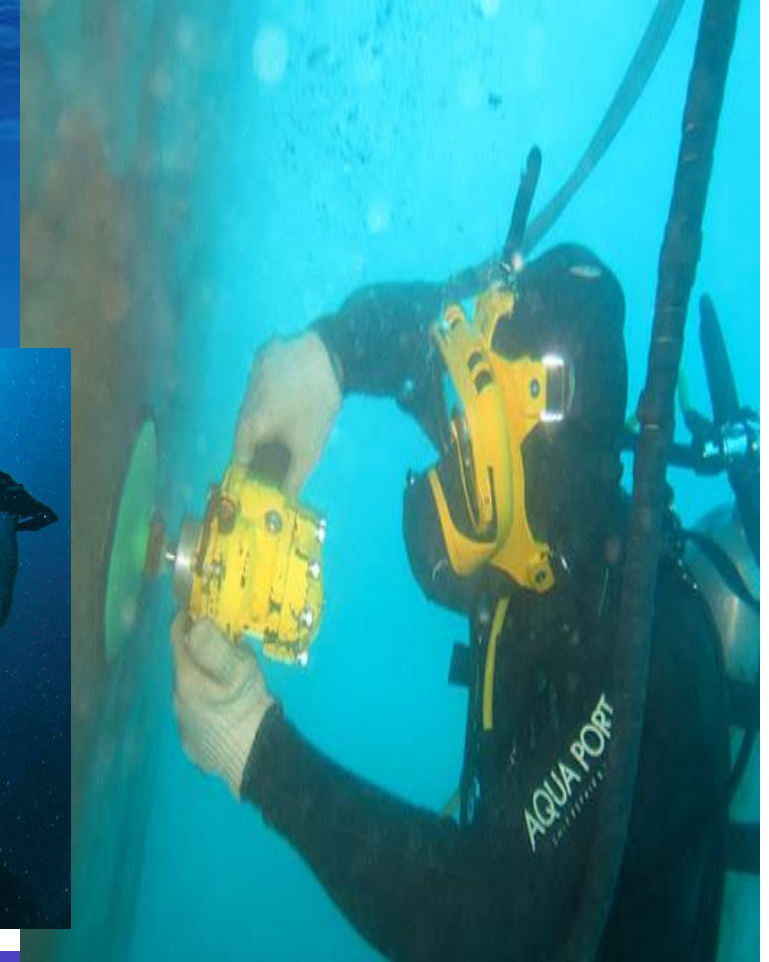


# Credits and Acknowledgements

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- Mr William Ong; and
- the internet






**Thank you**

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A glowing yellow tent is pitched on a rocky mountain peak at night. The tent is illuminated from within, casting a warm yellow light. The background shows dark, jagged mountain peaks under a deep blue night sky with a few stars and a bright moon in the upper right corner.

**The way to get  
started is to quit talking  
and begin doing.**

**Walt Disney**