

Defence Safety and Environment Authority Diving Standards Team Adventure Training

14 Jan 2014

Background

Mission

Objectives

Extent of MOD AT Diving Domain

Governance, regulation and assurance

DST AT Structure

KPIs

Key Issues

Questions



Diving Fatalities / Serious Injuries in MOD Diving

- Mar 01 Major S Rule HMS FEARLESS
- Jun 01 AB Diver Murray FDU3
- Mar 02 Lt Christie DDS
- Nov 02 Lt McAuley DDS
- Jan 04 Sgt Mclellan RE Germany
- Feb 04 LD Walters NDG (Heart failure)
- Mar 05 Lt Col Van Der Horst SBS
- Sep 06 Ocdt Fullick – seriously injured on AT
- Jun 08 AB Johnstone RNR (Heart failure)
- Dec 12 Cpl Robertson RAF Marham AT
- Aug 13 Lt Moran – snorkelling AT

Key Safety Milestones

Oct 02 Pelly Report

Nov 02 DDS Shut down – HSE Crown Censure

*May 03 SESB endorses formation of MOD Diving Safety
Management Panel*

*May 03 All MOD diving organisations endorse RN SofD to
be MOD SofD*

Apr 04 MOD Diving Safety Policy issues

Jun 07 DSO AT post formed

Apr 09 Leaflet 29 latest version

Apr 12 DSEA formed

Sept 12 JSP 917 issued

DMR

Mission Statement

To provide high-quality safety and environmental protection policy, assurance and regulation of MOD maritime activity in a way that supports the generation of operational capability.



Defence Safety and Environment Authority

DSEA Superintendent of Diving's Aim



To conduct the effective and efficient regulation of diving standards where the MOD has exemption from statute or assure compliance with statute where MOD has no exemption, for all MOD diving activity. This will require monitoring and audit of all military (operational and training), Service recreational, and MOD commercial and civilian diving, to assure that it is conducted in as safe and efficient manner as is reasonably practicable and be prepared to conduct other specific diving safety related tasking as required.



Diving Standards Team Mission Statement



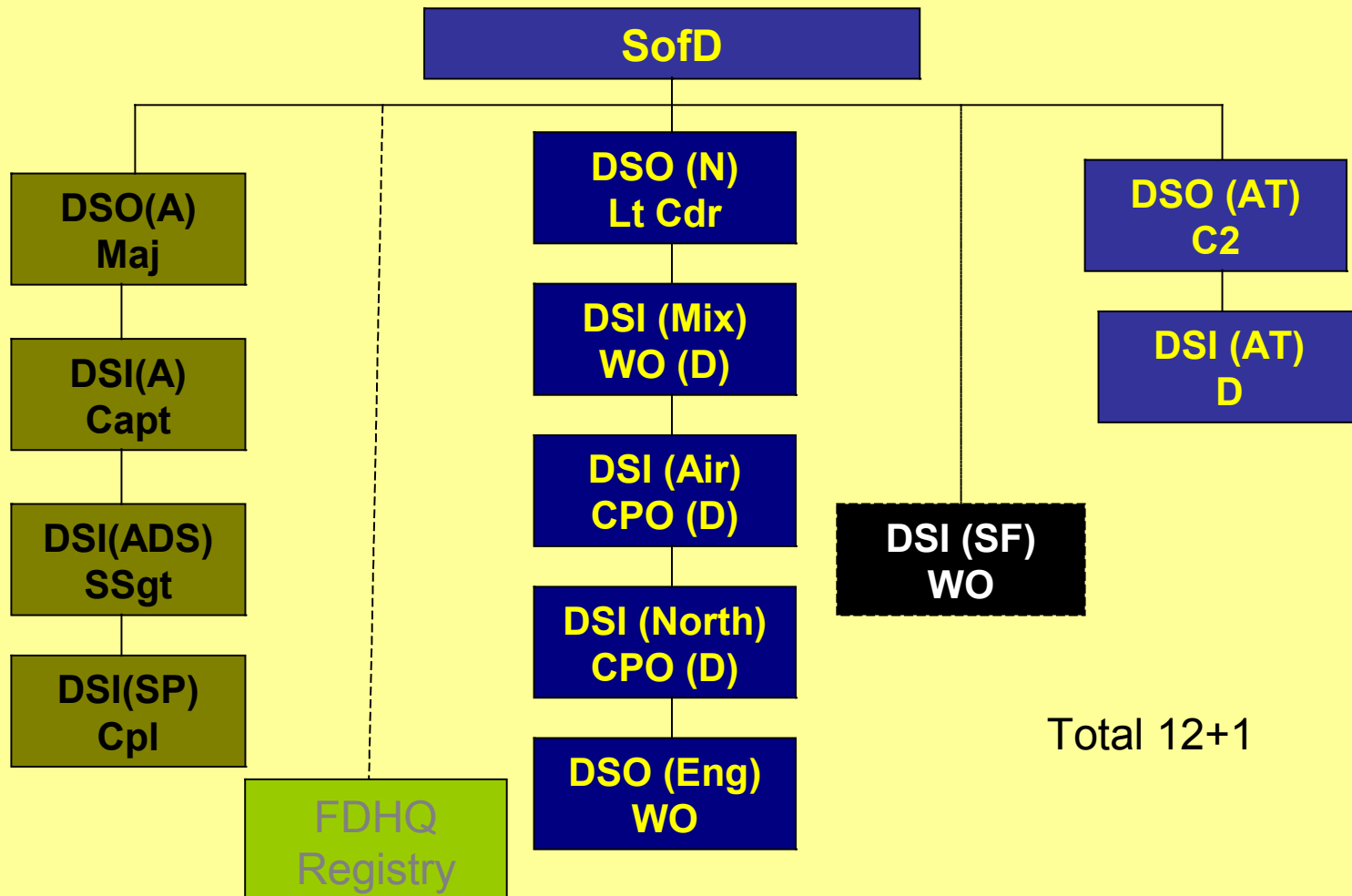
The DST will act on behalf of SofD, to assure that the MOD Diving Safety Management System positively contributes to Operational Capability, by minimizing avoidable risk to MOD personnel or contractors, by ensuring that the required level of safe practices are promulgated, implemented and applied to all diving activity conducted under MOD auspices.

Objectives



- *Planning, executing and reviewing Diving Safety Management System Audit and ADVIS programmes*
- *Ensuring Key Performance Indicators are relevant and achievable*
- *Establishing a coherent review plan and relevant diving safety documentation*
- *Identifying safety risk and ensuring these are mitigated for as soon as possible*
- *Providing Diving Safety Advice, Guidance and Information to all areas of MOD diving by all appropriate means*
- *Serving appropriate sanctions where failures in the MOD diving safety management system or procedures are discovered.*

Diving Standards Team



Diving Activity Domain



- *Numbers of personnel involved:*
 - *Military – Army 316 (20), Navy 470 (50), RM 184 (UTS figures in brackets)*
 - *Recreational – AT 1500, Cadets 300, Resettlement 10 (all numbers approx)*
 - *Commercial – 100 (approx)*
- *MOD is the largest employer of divers in the UK.*
 - *In 12 month period almost 27,000 dives are conducted by MOD diving units*



- *Structures are configured to specific types of diving activity*
- *Aligned with HSE definitions – Military Diving, Recreational and Commercial*
 - *MOD exemption from Diving at Work Regulations (DWR) 1997 for ‘Warfare and Training for Warfare’.*
 - *Guidance for Recreational and Commercial Diving Projects are provided by the HSE – Approved Codes of Practice*
- *Commercial governance is still under development*

Recreational Diving Activity



Safety



Risk Challenges in Recreational Diving Activity



- Comprises the largest body of MOD personnel participating in diving activity.
- Disparate diving safety management processes in Single Service Sub-Aqua Associations.
- ODH's do not understand their risk ownership.
- rationale for compliance with DWR by AT community.
- Resettlement activity up to now has been un-regulated with no safety assurance processes in place.
- Cadet Forces are virtually outside the oversight of the DST, however MOD instructors are subject to DWR.



Adventurous Training

- RN&RM, Army, RAF Sub-Aqua Diving Associations have total of 48 Branches – DSO(AT) has taken 4 yrs to conduct a Recreational Diving Standards Check at each Branch (2 – 4 days)
- AT Diving conducted at overseas venues
- MOD AT Dive Centres in Plymouth, Bovington, Ascension Islands, Gibraltar, Cyprus and Germany require annual inspections. Additional venue in Falkland Islands (2 – 5 days)
- Most AT Expeditions are conducted overseas – Kenya, Red Sea, Mediterranean & Asia
- Addition of new DSI(AT)

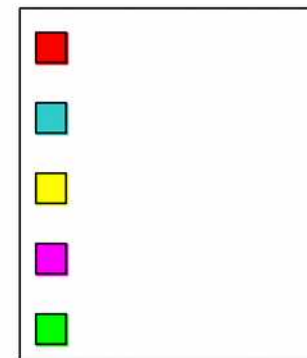
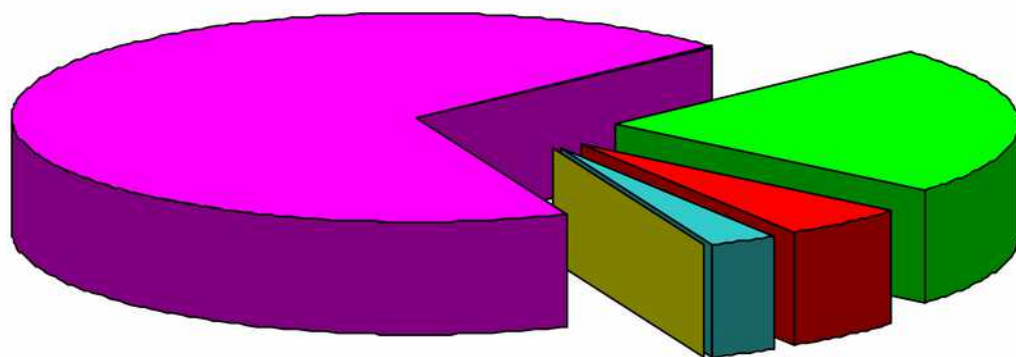
DST AT KPIs



- *Fatalities and Major Incidents*
- *Number of incidents overall*
- *Number of requests for information and advice*
- *Number of sanction Notices served*

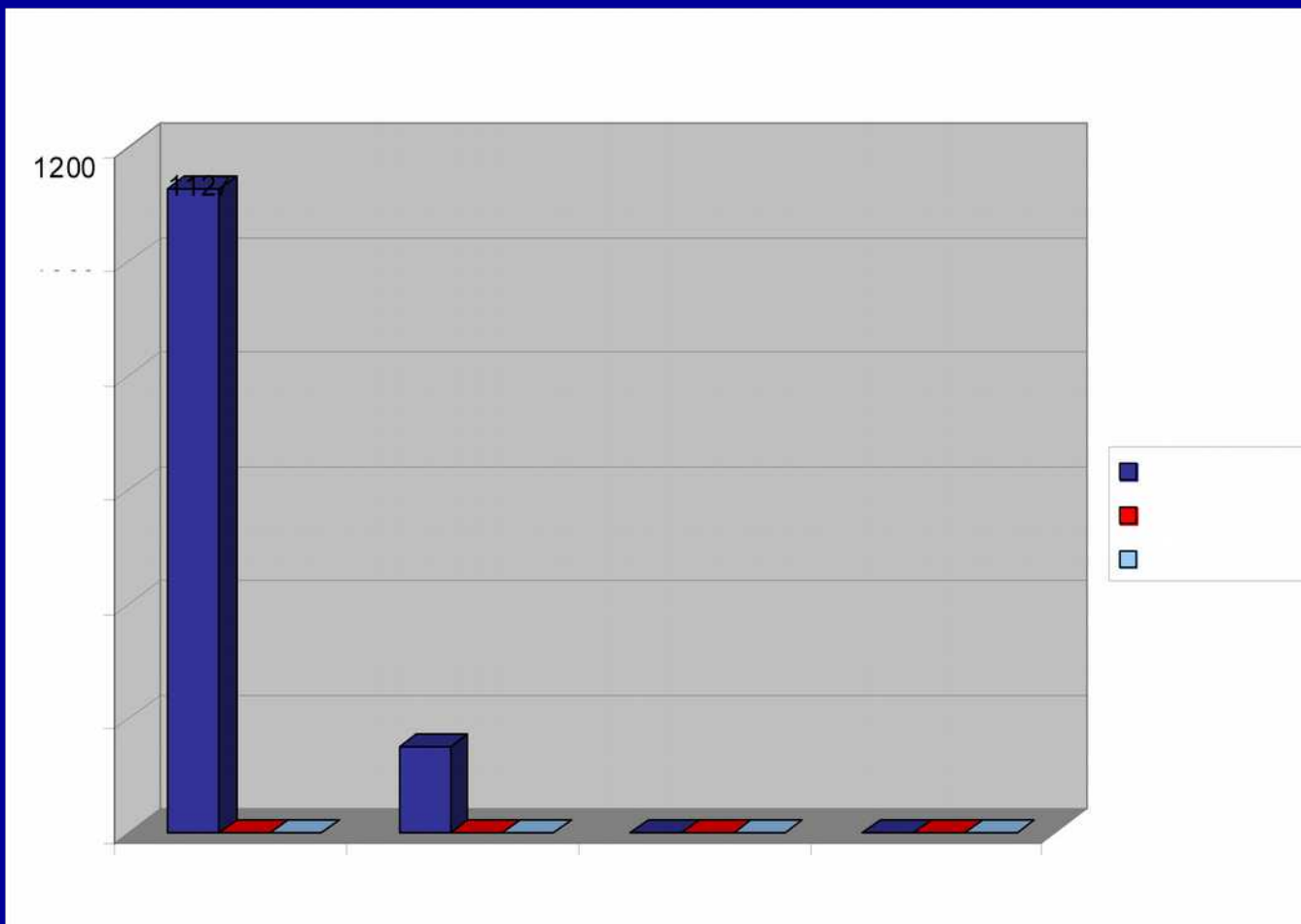
Diving Incidents AT

30 Sept 12 – 1 Oct 13



Diving Incidents AT

30 Sept 12 – 1 Oct 13



Key Issues



Key Issues



- *ESADS Responsibility*
- *JSP917 Adventurous Training, Vocational and Recreational Diving Manual*
- *Chapter 1 General Sub Aqua Diving Regs*
- *Chapter 2 JS Sub Aqua Diving Requirements*
- *Chapter 3 Regs for MOD Sponsored Cadet Forces Diving*
- *Chapter 4 Regs for Resettlement & pre-release vocational Diving*

Key Issues



- *Chapter 1 General Sub Aqua Diving Regs*
- *Para 0102 Regulatory Requirements*
- *Para 0103 Governance of Service Sub Aqua Diving*
- *Para 0104 Applicability of JSP*
- *Para 0111 Medical Fitness to Dive*
- *Para 0117 Duties of SADS*
- *Para 0130 Incident Reporting*

Key Issues



- *Chapter 1 Annexes*
- *Annex 1E BSAC Incident/Accident Report Form*
- *Annex 1F HSE Recreational Diving Projects Approved Code of Practice (ACoP)*
- *Annex 1I DWR97 Applicability to JSAT Projects – Guidance to CO's*

Key Issues



- *Chapter 2 JS Sub Aqua Diving Requirements*
- *Para 0204 Emergency Oxygen Equipment*
- *Para 0214 Diving Gas Regulations and Assurance Procedure*

- Minimum requirement
- CO 3ppm
- CO2 500ppm
- Water
- >200 bar 35mg/m³
- 40-200 bar 50mg/m³
- Comp 200-300 bar 25mg/m³
- Oil 0.5mg/m³

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Routine AirCheck / DataSheet™

factair

SAFE AIR TESTER - RESULTS

User Name and Address: **BLUJE MAGLUN PADI DIVE SCHOOL, GILI TRAWANGAN, LOMBOK, INDONESIA**

Details of System / Equipment & Test Location: **BLUJE MAGLUN DIVE SCHOOL, 200 BAR SCUBA DIVING CYLINDER, CNBA - TESTED USING P2235 SERIAL NO: 11134 - FILLED USING ROSELON ED PE 200 COMPRESSOR**

TEST	RESULT	**REQUIREMENT / NOTES
1a) Ambient temperature	28 °C	
*1b) Airline temperature	°C	Depend on RPE
*2) Test point volume	L/min	Tester gauge
3a) System pressure (Airline)	BAR	Cylinder contents gauge
3b) Cylinder pressure (H.P.)	200BAR	20-22% by volume
4) Oxygen (O ₂)	%	5ppm (5ml/m ³) max
5) Carbon Monoxide (CO)	0 ppm	500ppm (500ml/m ³) max
6) Carbon Dioxide (CO ₂)	300 ppm	0.5 mg/m ³ max
7) Oil mist	pass / fail	Without significant odour or taste
8) Odour	pass / fail	H.P. Cylinders
8) Water Vapour (H ₂ O)	40mg/m ³	40-200 bar 50mg/m ³ max
		above 200 bar 35mg/m ³ max
		Cylinder Charging Compressor
		25mg/m ³ max
9a) Pressure dewpoint (refer to graph overleaf)	°C	Airline below 40 bar
		Pressure dewpoint to be 5°C below likely lowest ambient temperature. Where temperature is not known then pressure dewpoint should not exceed -11°C.
Date: 27/01/13	Test: Satisfactory / Unsatisfactory	Engineer Contact Details:
Test Engineer: <i>L. C. M. Cameron</i>	Signed: <i>L. C. M. Cameron</i>	L. C. M. CAMERON
Next Test Due: 3 months		Company: BRITISH ARMY, MOD, 1 YORKS.
		Tel: +77 20A 206 87

*Airline Only
**Requirements according to BS EN12021

For TRACE: DT Reading Red / Grey Releasing ID Receiver's Initials

We Do One Thing - Test Compressed Air

CNBA Certificates



- *Not acceptable*
- *No details*
- *No signature*
- *No certificate!*



Key Issues



- *Chapter 4 Regs for Resettlement & pre-release vocational Diving*
- *UK Centres (Fort William, Dunoon, Aquanauts etc) HSE governed*
- *Dive In, Cyprus – only overseas*
- *Amendment 1 will include MOD Approved Centres overseas & procedure to become approved*

Diver Recall BDSG Trial



- *Results at 14m (under thermocline)*
- *Rev Engine*
- *Bang dive weight on steps*
- *Bang scaffolding pipes together*
- *Divers underwater horn*
- *Underwater rattle*
- *Air horn*
- *Distance – 20m, 50m & 60m NOT effective*

Diver Recall BDSG Trial



- *Results at 6m (above thermocline)*
- *Rev Engine*
- *Bang dive weight on steps*
- *Bang scaffolding pipes together*
- *Divers underwater horn*
- *Underwater rattle*
- *Air horn*
- *Distance – 20m, 50m & 60m NOT effective*

Diver Recall BDSG Trial



- *Conclusion – that none of the mainstream alternative to thunderflashes, which were tested, are in any way effective as a means of diver recall.*
- *JSSADC Dive Plan, ‘Diver recall’ must be effective & proven*

Diver Recall DSD-6E



Questions

