

Diving Safety Lines

Spring/Summer Edition

2012

Diving Safety Lines is a semi-annual release by the Afloat Safety Directorate of the Naval Safety Center. The information contained herein is a summary of research from selected reports of diving hazards to assist you in your mishap prevention program. *Diving Safety Lines* is intended to give advance coverage of safety-related information while reducing individual reading time. This bulletin does not, in itself, constitute authority but will cite authoritative references when available. It is recommended that this bulletin be made available to all hands.



From the Diving Safety Division Head

LT Eli Ford

Email: safe-divesalvage@navy.mil

The Naval Safety Center would like to dedicate this edition of Diving Safety Lines to the memory of EOD2 Taylor Gallant who perished while conducting dive operations earlier this year. EOD2 Gallant will forever be remembered for his positive attitude and dedication to his team and the mission. He was a true asset to the Navy and to the diving community who will be sorely missed.

As always, this edition is packed with great information our team has gleaned from the fleet during our diving safety surveys. Additionally, CWO4 Cassels has included an important article that explains how commands can most efficiently leverage the diving data collected through DJRS and WESS.

This summer our dive team will be parting ways with newly commissioned Chief Warrant Officer Keplinger. Throughout the past three years, his service has been integral to promoting safety and accountability for the Coast Guard's diving program. Warrant Officer Keplinger is being relieved by MKC Sowers, a first class Coast Guard diver, who comes from the Naval Diving and Salvage Training Center.

Please feel free to contact our office with any questions or concerns at safe-divesalvage@navy.mil or 757-444-3520 ext. 7837.

Diving Safety Lines

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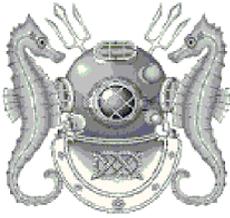
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Master Diver's Corner

NDCM (MDV/DSW/EXW/SW) David "Shep" Schoephoerster
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I have found HP hoses on scuba charging stations that were not proof tested (200% max operating pressure) to the proper amount, IAW S6470-AA-TED-010 (TED -10). The hoses I discovered had been hydrostatically tested to 4500psi or to 6000psi. The 4500psi test is unsatisfactory, while the 6000psi test is only acceptable when lockers are using aluminum 80 scf cylinders. Now that a lot of dive lockers have switched to larger and higher pressure bottles, they need to update their systems. Not only do you need to have your hoses tested but you must also update your relief valves.

Filter housings and moisture separators are not being tagged after internal and external visual inspections are completed. There are three resources that you use when conducting these inspections: PMS 5921/034; process Instruction NAVSEA-OOC3-PI-005, Maintenance Requirements and Inspection Criteria for Diver Life Support System (DLSS), Moisture Separators, Filter Housings, Receivers, Volume Tanks, and Purification Systems; and Topside Tech Notes, Moisture Separators (Volume V, Issue 3) and Filters (Volume IX, Issue 2). In the Topside Tech Notes, there is section titled "tagging", which states:

"Tagging: All moisture separators installed in diving systems require a tag to be affixed upon completion of recertification testing. As a minimum, the following information shall be stamped on the tag: recertification activity, type of recertification (UT or visual inspection in accordance with MIP 5921/034 18M1R), recertification date"

"Tagging: All filter housings installed in a diver's air system require a tag to be affixed upon completion of recertification inspection. As a minimum, the following information shall be stamped on the tag: recertification activity, type of recertification (UT or MIP 5921/034 18 M2R), Recertification date"

The last thing that I'll talk about is personnel flotation devices (PFD's). I have read command instructions that state BCs and UDT vest can be worn as a PFD. A PFD must be U.S. Coast Guard (USCG) approved, as indicated by a label on the PFD. To meet USCG requirements, every boat must have a USCG-approved Type I, II, III, or V life jacket for each person aboard. Boats 16 feet and over must have at least one Type IV throwable device as well.

Master Diver's Corner (cont.)

| Type PFDs | Minimum Adult Buoyancy in Pounds (Newtons) |
|---------------------------------------|--|
| I – Inflatable | 33.0 (150) |
| I - Buoyant Foam or Kapok | 22.0 (100) |
| II - Inflatable | 33.0 (150) |
| II - Buoyant Foam or Kapok | 15.5 (70) |
| III - Inflatable | 22.0 (100) |
| III - Buoyant Foam | 15.5 (70) |
| IV - Ring Buoys | 16.5 (75) |
| IV - Boat Cushions | 18.0 (82) |
| V - Hybrid Inflatables | 22.0 (Fully inflated) (100) 7.5 (Deflated) (34) |
| V - Special Use Device - Inflatable | 22.0 to 34.0 (100 to 155) |
| V - Special Use Device - Buoyant Foam | 15.5 to 22.0 (70 to 100) |



Hail and Farewell

CWO2 Chris Keplinger
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It has been a distinct pleasure serving you for the last several years. I've enjoyed traveling the world to various military dive lockers, meeting new folks, and seeing all the great things that are going on in the dive community. I was privileged to be the first Coast Guard diver assigned at the Naval Safety Center and I have learned more in the last two years than I ever imagined. I have been assigned to several ships throughout my career and have been part of some really great crews, but the camaraderie and brotherhood I have experienced in the last couple of years from other military divers is amazing. I especially want to thank my fellow divers at the Naval Safety Center that have adopted me like a little brother, and dive team Alpha from NNSY who made my commissioning very special.

Diving has come a long way from the days when I was a young, scuba diver. As a community, the Coast Guard has started attending 2/C and 1/C dive school. We've continued to transform ourselves to meet the needs of the Coast Guard and dive as safely as possible.

I will be relieved by MKC Chuck Sowers from NDSTC who has been around Coast Guard diving for many years and has a wide range of diving experience. Please welcome him as he begins to make his rounds out in the fleet. On a sad note I will be transferring out of CG diving to USCG Sector Lake Michigan in Milwaukee, Wisc. It has been an awesome ride and one I will surely miss! Hoo-Yah Deep Sea!

CWO2 Chris Keplinger





Jasper Reports in WESS

CWO4 Robert Cassels

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As some of you may already have noticed, there is a new option in the Web Enabled Safety System (WESS). It is the very last icon listed and is labeled “Report” this new option can be very useful to you and your command; and you should take the time to explore it. It contains a multitude of preformatted reports concerning safety issues, including a number of reports that have been specifically created for the diving community by the Naval Safety Center programmers.

When you click on the “Reports” icon, it takes you in to the Jasper program. From there, click on the “View Reports” icon. This will take you to the first page of preformatted reports. Diving reports start on page 2 and carry over to page 3. When you select the report you would like to run, you will be asked to select certain criteria depending on the report selected. One common criterion is the time frame that you want searched in the data base. On some of these reports, Jasper has the ability to go back into pre Dive Reporting System (DRS) achieves. I have been able to access information on my own dive career from 1984. Although not complete, it is useful data.

Some of the dive reports you will find in Jasper are:

Number of Dives – UIC by Month

Total Bottom Time & Dives by Command

Command Dive History

Personal Dive History

Be aware that these are just a few of the reports available for your use. There are many additional reports that you or your command may find useful. If there is specific information you would like in a report, let us know and we may be able develop it. Keep in mind that these reports can be very time consuming to develop, so keep your request limited to something that will be beneficial to the Navy or diving community. Another important fact to remember is the data are only as good as the information put in to the system. It is crucial that you log all your dives in to DJRS accurately and get approval by your chain of command in a timely manner.



Dive Jump Reporting System (DJRS)

NDC (DSW/EXW/SW) Rebecca Jones

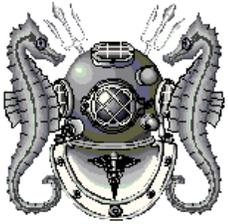
Email: safe-divesalvage@navy.mil

DJRS Updates

1. Added ORCA and DP2
2. Added decompression: In Water (Air) and In Water (O₂)
3. Corrected error with missing complete/ delete buttons in draft dives

Facts about DJRS

1. If a diver is in a PCS status, you cannot print their personal dive log.
2. When a diver is transferred to a new command, they will lose all of their permissions and they must be granted new ones at their new command.
3. When conducting a dive, any diver can be pulled into a dive by searching for them by name when selecting dive participants.
4. DJRS will not automatically identify dive log calculation errors.
5. Your DJRS profile and WESS account must be associated before you can log onto DJRS.
6. Only NDSTC, BUD/S, Army Special Forces Dive School, and the Naval Safety Center can create a new DJRS profile.
7. For logging a dive in DJRS; after you leave bottom, everything else is decompression (even for a TT or Sur "D"). Enter any specific data about the dive in the comments section for the dive.
8. A dive supervisor, MDV, or diving officer will only show up on the drop down list for routing a dive if they:
 - a. Have dive sup, MDV, DO selected in profile
 - b. Have an associated WESS account
 - c. Have the appropriate permissions in DJRS
9. To delete a dive that is awaiting approval by the diving officer, MDV, or diving supervisor, it must be placed into a draft status. For this to happen, you will need to contact the Naval Safety Center divers with the dive log number so they can have the dive log placed back into a draft status. Then, you can delete it.
10. Your personal dives will only appear in your dive history and currency reports after they have been completely routed to the Naval Safety Center. Dives in draft will not appear as completed dives. This means log reviewers need to ensure that they are reviewing and submitting dive logs in a timely manner.



From The Medical Department

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One often overlooked requirement on the annual Periodic Health Assessment (PHA) is the skin cancer screening exam. This is a requirement because, as divers, we spend more time in the sun than the average Sailor.

Skin cancer is defined as the uncontrolled growth of abnormal skin cells. It occurs when unrepaired DNA damage to skin cells (most often caused by ultraviolet radiation from the sun) triggers mutations that lead the skin cells to multiply rapidly and form malignant tumors. Cancerous tumors may spread, and in some cases, skin cancers can spread to vital organs becoming fatal.

Ways to prevent skin cancer include:

1. Seek the shade, especially between 1000 and 1600.
2. Do not burn.
3. Avoid tanning and UV tanning booths.
4. Cover up with clothing, including a broad-brimmed hat and UV-blocking sunglasses.
5. Use a broad spectrum (UVA/UVB) sunscreen with an SPF of 15 or higher every day. For extended outdoor activity, use a water-resistant, broad spectrum (UVA/UVB) sunscreen with an SPF of 30 or higher.
6. Examine your skin, head-to-toe, every month.
7. See your healthcare provider every year for a professional skin exam.

When doing a self exam, take note of any new moles or growths, and any existing growths that begin to grow or change significantly in any other way. Lesions that change, itch, bleed, or don't heal are also alarm signals.

There are three main types of skin cancer: basal cell carcinoma, squamous cell carcinoma, and melanoma. Because each has many different appearances, it is important to know the early warning signs.

The warning signs:

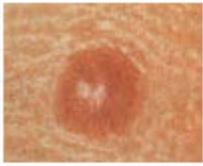
A skin growth that increases in size and appears pearly, translucent, tan, brown, black, or multicolored.
Additionally a mole, birthmark, beauty mark, or any brown spot that:

1. Changes color
2. Increases in size or thickness
3. Changes in texture
4. Is irregular in outline
5. Is bigger than 6mm or 1/4", the size of a pencil eraser
6. Appears after age 21
7. A spot or sore that continues to itch, hurt, crust, scab, erode, or bleed.

8. Any open sore that does not heal within three weeks.

The ABCDs of skin cancer:

Asymmetry. If you draw a line through the mole, the two halves will not match.



Symmetrical



Asymmetrical

Borders. The borders of an early melanoma tend to be uneven.



Borders are
even



Borders are
uneven

Color. Having a variety of colors is another warning signal. A number of different shades of brown, tan or black could appear. A melanoma may also become red, blue or some other color.



One Color



Multiple Colors

Diameter. Melanomas usually are larger in diameter than the size of a pencil eraser (1/4 inch or 6 mm), but they may sometimes be smaller when first detected.



Smaller than
¼ Inch



Larger than
¼ Inch

Remember, when in doubt, always seek advice from your medical department. The sooner skin cancer is diagnosed, the better the prognosis.



Sunglasses

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The last time the Naval Safety Center published an article on this topic was in the spring issue of DSL in 2002. As a community and senior leaders, we need to make sure that we protect ourselves and our Sailors from the possibility of permanent damage caused by the sun.

The principal danger posed by the sun is in the form of ultraviolet radiation (UV). UV radiation is a component of solar energy and some artificial sources. You are probably aware of the danger posed by UV radiation to your skin, but you may not realize that exposure to UV radiation can harm your eyes and affect your vision as well. UV radiation is divided into several classes: UV-A, UV-B and UV-C.

Long term exposure to UV radiation can be much more serious. A number of scientific studies and research have shown that exposure to small amounts of UV-B radiation over a period of many years contributes to the development of cataracts; pterygium/conjunctiva (tissue growth on the surface of the eye); skin cancer around the eye; and can cause damage to the retina (macular degeneration), the nerve-rich lining of your eye that is used for seeing. Damage to the retina is most likely **not reversible**.

While everyone is at risk of the harmful effects of UV-A and UV-B radiation, certain people are at an increased risk because the effects of UV radiation are cumulative. This means the longer your eyes are exposed to UV radiation, the greater the risk of developing conditions such as cataracts. Therefore, you should wear quality sunglasses that offer the best protection. You should also wear a hat or cap with a wide brim whenever you are on dive station, working outdoors on/off duty, participating in outdoor sports, physical training outside, or doing anything in the sun.

In order for sunglasses to provide adequate protection for your eyes, they must:

- *Block out 99 to 100 percent of both UV-A and UV-B radiation*
- *Screen out 75 to 90 percent of visible light*
- *Have lenses perfectly matched in color and free of distortion and imperfection*
- *Have lenses that are gray, green or brown*
- *Provide polarized protection*

In summary, protecting our eyes with proper good quality sunglasses and wide brimmed hats or caps is the only way to prevent irreversible UV damage to our eyes. If we were welding, using a drill press, shooting weapons, or anything else requiring eye protection we would have it. Therefore, if we are outside in the sun why should we not have the proper PPE (sunglasses) for that? The answer: **We shouldn't!**



Diver in the Spotlight

ND3 (DSW) Tyler Woodard



ND3 (DSW) Tyler Woodard was born and raised in North Georgia. He graduated from Gordon Central High School in 2008 and enrolled at Pikeville College where he played soccer. In March 2010, he enlisted in the U.S. Navy; and, after completing “Boot Camp” and “Dive Prep,” he received orders to the Naval Diving and Salvage Training Center (NDSTC) in Panama City, Fla.

Upon graduation from NDSTC, he received orders to Pearl Harbor Naval Shipyard in Pearl Harbor, Hawaii. From the time he checked onboard, ND3 Woodard was eager to get in the water and learn every job. He took advantage of every opportunity to learn the job from veteran military and civilian divers. Some of his most notable jobs include the stove bearing replacement on USS LA JOLLA (SSN-701) and the first-ever removal of port dihedral cover on USS HAWAII (SSN-776).

In April 2012, he volunteered to participate in an experimental dive research at the Navy Experimental Dive Unit (NEDU) in Panama City, Fla. The research included 36 hours of high ppO₂ bottom time during variable intensity levels of exertion. His positive demeanor and upmost dedication produced valuable data to support the advancement of Navy diving physiology research. In his off duty time, he avidly supports the community by volunteering to the Wounded Warriors’ ACCESS SURF project and the SEAPERCH underwater robotics program.



Total Bottom Time & Dives by Command

DoD Dives

Rpt No:DV-301

10/01/2011 to 03/31/2012

Run Date: 28-Jun-2012

| TBT in minutes | Total Dives | UIC | Command Name |
|-------------------|----------------|--------|--|
| 459,075 | 7,100 | N0610A | NAVDIVESALVTRACEN PANAMA CITY, FL |
| 395,367 | 5,280 | N49746 | NSW BASIC TRNG COMMAND |
| 108,901 | 928 | N08973 | SDV TEAM 1 |
| 105,500 | 1,099 | N32253 | PEARL HARBOR NAVSHIPYD AND IMF |
| 102,740 | 1,329 | N41150 | NORFOLK NAVAL SHIPYARD AND IMF |
| 98,352 | 1,041 | N4523A | PUGET SOUND NAVAL SHIPYARD |
| 96,750 | 2,036 | W1E0C0 | SPECIAL FORCES UNDERWATER OPS SCHOOL |
| 87,108 | 1,195 | N55236 | SOUTHWEST RMC SAN DIEGO, CA |
| 82,954 | 462 | N68316 | NAVSUBSUPPFAC NEW LONDON, CT |
| 78,622 | 1,128 | FFGS70 | AF COMBAT DIVE SCHOOL (NDSTC) |
| 53,516 | 848 | N0031A | NSWG 2 |
| 45,641 | 1,783 | N39586 | NSWG 1 LOGSUPPU SEA |
| 40,288 | 1,443 | N42270 | MDSU 1 (SEA) |
| 38,817 | 466 | N44466 | TRIREFFAC KINGS BAY, GA |
| 38,102 | 779 | N00750 | NAVSUBSCHOLGROTON |
| 35,641 | 438 | N0463A | NAVAL EXPERIMENTAL DIVING UNIT |
| 33,207 | 1,090 | N42838 | MDSU 2 |
| 32,885 | 317 | N08842 | NSWG 3 DET LTL CRK |
| 30,910 | 883 | M20920 | 1ST MARINE SPECIAL OPERATIONS BATTLION |
| 25,530 | 386 | N40027 | SOUTHEAST RMC MAYPORT, FL |
| 24,955 | 247 | N39924 | NAVSPECWARCEN DET SDV PANAMA CITY, FL |
| 21,808 | 277 | N45598 | NAVSHIPREPFAC DET SASEBO, JA |
| 20,751 | 1,988 | N47898 | NSW DEVELOPMENT GROUP |

What is Wrong With These Pictures?



****Answers will be provided in the fall issue of Diving Safety Lines****