DIVING SAFETY LINES

NAVSAFECOM EXPEDITIONARY & SPECIAL WARFARE DIVING SAFETY NEWSLETTER

ATLANTIC OCEAN (Feb. 5, 2023) Sailors assigned to Explosive Ordnance Disposal Group 2 recover a high-altitude surveillance balloon off the coast of Myrtle Beach, South Carolina, while the Harpers Ferry-class dock landing ship USS Carter Hall (LSD 50) transits nearby. EODGRU 2 is a critical part of the Navy Expeditionary Combat Force that clears explosive hazards to provide access to denied areas; secures the undersea domain for freedom of movement; builds and fosters relationships with trusted partners, and protects the homeland. (U.S. Navy photo by Mass Communication Specialist 1st Class Tyler Thompson)



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From the Diving Safety Division Head

By CWO5 Eric "Jim" Nabors Diving Safety Division Head

The Naval Safety Command continues to improve the diving safety assessment (DSA) process, and in January 2023, we incorporated new grading criteria to account for command complexities, e.g., large vs. small commands, number of dive locker personnel, amount of equipment assessed, etc, and the severity of discrepancies. This scale objectively grades command performance as above average, average or below average based on fleet DSA performance. Further information is available in the ALSAFE 003/23 message.

The Diving Safety Division performed 38 DSAs throughout the fleet in 2022. There were a total of 292 discrepancies noted, and several dive lockers had the same discrepancies. Below are some of the most commonly seen discrepancies in 2022. Please review them and inspect your equipment and programs to ensure you aren't repeating these mistakes.

-Medical department: Expired diving physicals,

expired personal health assessments (PHAs), PHAs without the required skin cancer screenings, expired gear in chamber and first aid kits, and expired cardiopulmonary resuscitation qualifications.

-Self-contained underwater breathing apparatus (SCUBA): Regulators with improperly set overbottom pressures, gauges not calibrated, hoses kinked, bulging and dry rotted, regulators not on the ANU list. Buoyancy compensators (BC) had several recurring issues: Improper maintenance leaving water and or salt in the bladder, missing screws, inoperable power or oral inflators, inoperable over pressurization valves, holes in the BC and damaged straps.

-Command 3150 diving instructions missing the required elements from OPNAVINST 3150.27D, Chapter 4.

-SKED errors: Gear not serialized or not matching equipment to SKED line items, gear grouped instead of being on single line items in SKED, incorrect MIPs assigned to equipment, missing maintenance checks and incorrect anchor dates for performed maintenance.

Stay safe, and we look forward to seeing you at your next DSA.

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SPRING/SUMMER 2023



You're Diving Safer, and Here's the Proof

By NDCM Russ Ciardiello

We recently completed our 12th Diving Safety Assessment (DSA) this year, and we will have completed a few more by the time this edition of Diving Safety Lines (DSL) is published. I checked into this billet in April 2020, pretty much at the start of the pandemic, and our community faced a lot of challenges and uncertainty – just like the rest of the world. We're back on the road regularly, producing pre-pandemic numbers, and so are all of you ... and then some.

In the Fall/Winter 2020 DSL, I highlighted that our total bottom time (March to September 2020) was down to 1.4M minutes from our normal average (March to September for the previous three years) of 2.29M minutes. My reason for highlighting this was that every dive locker would eventually be expected to compensate for most, if not all, of that lost bottom time, and we needed to ensure we did it in a smart and safe way. Not only would you be asked to do more following 2020, but most of you are being asked to do it with less. Less funding, less manpower and less time overall. From March to September 2022, all of you logged 2.67M minutes of bottom time, well above our average before the pandemic. Not only are you logging more bottom time, you've been doing it safer.

Well done to all of you! Your efforts should be acknowledged by your chain of command. That goes from diving supervisors to type-commands and everyone between. Never assume the people who work for you know you appreciate them and their efforts.

To back up the statement above about being safer is an analysis project I did on our overall diving safety from 2019-2021. These years were selected due to the switch from the Web-Enabled Safety System (WESS) to Risk Management Information and Streamlined Incident Reporting System and the improved quality of reports we're getting with the new system. I know there has been a learning curve, but that's a great problem to have. I can't say it enough: I never want any of you to be good, i.e., proficient at these reports, but I do want good reports that can be used to learn and train from for decades.

Continuing below, you will be able to read the full analysis project on U.S. Navy diving safety from 2019-2021.

U.S. Navy Diving (on-duty) Incident Analysis for Calendar Years 2019-2021

The initial intent of this analysis was to review the last five years, calendar years (CY) 2017-2021, of USN diving on-duty incidents. Due to the inconsistencies of reports submitted in the previous mishap reporting module of the Web Enabled Safety System (WESS) and a nonstandardized quality control (QC) process, the scope of this analysis was reduced to three years (CY 2019-2021). Some reports submitted in WESS were not usable for two reasons. The reports had fewer mandatory data fields and the QC process was insufficient to ensure final reports would be sufficient for future review and analysis. Having fewer mandatory data fields does not allow some WESS reports to be included in analysis projects with current Risk Management Information (RMI) reporting module reports. This challenge is compounded by insufficient narratives in the report that fail to "paint a picture" of the incident, which would normally enable an analyst to fill in the missing data fields.

A total of 247,358 dives were logged during CY 2019-2021, depicted in Figure 1 on Page 3. The top five techniques of diving (chamber, closed circuit, SCUBA, semi-closed circuit and surface supplied) were selected to analyze, leaving a total of 245,216 dives included in this analysis (Figure 2). Surface supplied includes KM37, KM97 and the Mk20 in surface-supplied mode. Self-contained underwater breathing apparatus (SCUBA) includes the Mk20 in SCUBA mode.

A total of 72 incidents were reported during CY 2019-2021 (Figure 3), and 11 of the 72 didn't directly involve one of the five techniques used above, i.e., tag-out violations, system setup and charging procedures, which were removed from Figure 4, leaving 61 incidents. The total number of incidents trended downward over all three years, but this is a deceiving trend due to the total number of dives trending downward at a higher rate. When comparing incident occurrence percentage, CY2020 was up 4%, and CY2021 was down significantly by 41% (see Figure 4).

Figure 5 shows the percentage of the number of incidents reported for each technique compared to the total number of dives for CY 2019-2021. Figure 6 shows the ratio of the number of incident-free dives for each diving technique.

The U.S. Navy diving program is operating at an extremely high level of safety and is trending even safer. Considering every evolution is high risk, the overall incident occurrence is only 0.0249%, and the incidents that occurred in the last three years were Class C and below. The identification of the higher rate of incidents in semiclosed circuit diving will be the focus of future Navy diving safety analysis.

Recommended Distribution: All diving community

References: Risk Management Information data from calendar years 2019-2021.

You're Diving Safer, and Here's the Proof (cont.)



Figure 1-Dives per calendar year



Figure 3- Incidents per calendar year by class



Figure 5-Incidents reported for each technique to total dives













The Coastie Corner

By DVC Adam Harris

Over the last quarter, Coast Guard dive has been doing some amazing things all while pushing forward to shape our program into a better tomorrow. Let me highlight just a few of the outstanding things we have been focusing on.

Defense POW/MIA Accounting Agency (DPAA)

In support of Defense Prisoner of War/ Missing in Action Accounting Agency (DPAA) mission to identify U.S. service members from past conflicts, an underwater recovery team consisting of U.S. Army, Marines, Coast Guard and Navy service members deployed to Papua, New Guinea, in the vicinity of East Sepik to excavate a swamp. This expedition supported repatriating three unaccounted service members.

Excavation and recovery operations commenced Aug. 30, 2022, and the underwater recovery team used a surface-supplied diving system and a hose nozzle to search and dredge around the wreckage of the primary recovery site titled "Missing Air Crew Report 13316."

Over the course of 35 operational dive days, the underwater recovery team completed 81 dives with 12,453 minutes of bottom time. All dives were completed in an operating environment that dropped to zero visibility just 3 inches below the surface. Recovered material was then transferred to the screening station and inspected by hand.

In total, the underwater recovery team excavated over 225 cubic meters of material, recovering numerous osseous materials, ammunition and artifacts. The material and recovered artifacts were repatriated to the United States and will be thoroughly examined at the DPAA Forensics Laboratory in Honolulu, Hawaii. This process could very well identify the three U.S. service members associated with the loss.



WEWAK, Papua New Guinea (Aug. 31, 2022) U.S. Navy Petty Officer 1st Class Lars Brown, a deep sea diver assigned to the Defense POW/ MIA Accounting Agency (DPAA), conducts dive operations during an underwater recovery mission. DPAA personnel conducted an underwater excavation operation in an effort to find a U.S. aircraft crew lost over Papua New Guinea during World War II. DPAA's mission is to achieve the fullest possible accounting for missing and unaccounted-for U.S. personnel to their families and our nation. (U.S. Marine Corps photo by Sgt. Jack A. E. Rigsby)

Hyperbaric Chambers

The Coast Guard received funding from Congress for hyperbaric chambers and the staffing support needed. This added capability will increase the safety and operational versatility of our community. Select divers and medical personnel have prepared by attending the Joint Hyperbaric Medical Officers Course and Joint Hyperbaric Medical Technician Course in Seattle, Washington.

Keep doing incredible things. Semper Paratus!



PENSACOLA, Fla. (June 14, 2022) Hospital Corpsman 2nd Class Evan Peck, a member of the Naval Aerospace Medical Institute Hyperbaric Medicine team, points out the depth gauge of the recompression chamber on Naval Air Station Pensacola, June 14, 2022. The recompression chamber is used in hyperbaric medicine, and can treat many injuries and conditions with the patient receiving oxygen of oxygen blends while in the chamber. (U.S. Navy photo by Joshua Cox)

DIVING SAFETY LINES

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Over the course of 35 operational dive days, the underwater recovery team completed 81 dives with 12,453 minutes of bottom time.

DSA Scheduler's Corner

By NDC Alan Dewitt

Deep Sea,

Welcome to the Spring/Summer 2023 edition of Diving Safety Lines! I 'd like to take a few minutes of your time to highlight Diving Safety Assessment (DSA) scheduling items to keep in mind for the next couple of years. Please plan ahead and send me an email to get on our radar and get scheduled as soon as you are ready to plan. - it's never too early. An initial phone call is perfect to check our availability, but make sure to send me an email at alan.dewitt@navy.mil so I'm tracking on the DSA. I will be the point of contact for scheduling through June 2025, and I have no issues if you want to schedule out for at least a year from 15-21 months from when your last Diving Operational Readiness Inspection

was completed. We have a very busy schedule through June 2023, and then we have some availability for your command during the summer if you still need a DSA this year and you're in your window. In your initial email, please let me know your location, specifically for the submarine community. We are still having issues with emails and connectivity on submarines that affect our ability to coordinate the logistics in a timely manner and get to you.

The last topic I want to discuss is how to view ALSAFE messages released by the Naval Safety Command, specifically ALSAFE 23-003. Some of you have experienced the new grading criteria for the DSAs, but I have not yet been

to a command that is aware of the ALSAFE message, let alone knowledgeable on how to access messages on the website. Below are stepby-step instructions on how to stay up to date by accessing the safety messages we release: 1. Go to https://navalsafetycommand.navy. mil/ and do not log into the secure side. 2. Drop-down on the tab labeled "Resources" and go to "ALSAFE messages." 3. That is all! All of the ALSAFE messages dating back to 2013 are located here. As always, feel free to reach out to me with any questions, comments or concerns. See you all

Hooyah Deep Sea KDSA

out there.

Epinephrine Auto Injector Training ISN'T Automatic

By HMCM Andrew Taylor

Sometimes we take the use of certain equipment for granted, deeming a procedure so simple that we overlook the necessity for proper training. In this case, training on emergency equipment used on an infrequent basis.

Skipping proper training on equipment safety is not necessarily intentional; with all the military training requirements and only so many hours in the day, it can be easy to get complacent on things that we see as simple and easy to use. Countless injuries happen annually with such equipment because of a lack of training and a misconstrued sense of knowledge and safety.

In August 2022, Naval Sea Systems Command released a diving advisory implementing guidance for diving units to carry medication to treat anaphylaxis when the hazard for marine life envenomation exists in their operating environment. When maintained, this capability should include sufficient quantities

of epinephrine - a 1:1000 solution, e.g., an auto-injector and oral diphenhydramine to treat a minimum of two patients. Children can carry epinephrine auto-injectors for allergies, and diphenhydramine can be bought over the counter at your local drug store.

But the question remains: Is training being conducted by our forces for the proper use of these injectors? Many might think the answer is no when search engines show images of injector needles impaling digits and being hooked in the skin. As a diving safety analyst for the Naval Safety Command, I can say I have personally seen this equipment in several first aid kits during assessments. The majority of the time, all members of the dive team have access to the equipment. I recommend all dive units that carry these medications in their first aid kits incorporate training on their proper use immediately for all nonmedical personnel. Training can be conducted by each operational

medical department via several existing clinical practice guidelines on envenomation. Units without an embedded medical department should consult their nearest military treatment facility to conduct training.

For additional assistance or information, my email contact information is and rew.b.taylor1@ navy.mil.



Epinephrine Auto injector ready to use. It is a medical device for injecting doses of epinephrine or adrenaline through a needle into a patient suffering an allergy.

Exploring the RMI-SIR Feedback System

By NDC Andrew E. Homan

Often we find ourselves in situations we wish we could change – or the desired outcome was not achieved for one reason or another. Yet we trudge through it, find a way to make it work and accomplish the task. Afterward, we discuss it, usually commenting on how bad the process was to accomplish the task, all the while not taking advantage of the tools at our disposal to enact change or improve the situation.

As it relates to Risk Management Information - Streamlined Incident Reporting (RMI-SIR) issues, I will be diving into various topics to shed some light to an otherwise confusing and changing system. In this edition, we will be exploring and navigating the RMI-SIR Feedback System. Again, this is a tool that can - and should - be used. Many issues submitted through the feedback system can be resolved fairly quickly. More complex situations or recommendations require patience, as the processes can take some time. Adding additional functions into the existing RMI or Dive/Jump Reporting System (DJRS) requires drafting the coding from the developers required to add fields or applications and extensive testing of the new coding before implementation using the drawing board.

In 2022, 2,546 feedbacks were closed out; 492 were duplicates or recurring issues, 49 went to the developer's drawing board for a change in coding, and 38 issues and recommendations were implemented.

What's the big takeaway?

Once per quarter, there is a scheduled software release, where RMI is down for maintenance to push revised updates for new processes and implementation of corrected software. During the weeks leading up to this release, all unresolved feedback is racked, re-racked and stacked for precedence. In our community, many instances of feedback has been pushed multiple times to a lower precedence over other issues facing the fleet. When an inquiry was made as to why, the answer received was that the volume did not meet the threshold.

Through interactions during diving safety assessments and phone calls received, I know there are issues and errors not being reported. The worst case that can result from submitting feedback is that your submission is met with "Thank you for your submission, your input is valued but will not be implemented at this time."

If the reviewers are unaware of issues because of a lack of submissions, no change will occur. Feedback is designed to generate better usability of the RMI-SIR system for you, the customers.

What is the RMI-SIR Feedback System?

The RMI-SIR Feedback System enables users to provide suggestions, report errors and send other pertinent information directly to the RMI Support Team for resolution. The RMI Support Team is comprised of various personnel who operate the help desk, contractors who evaluate and categorize all incoming feedback, developers who are able to modify the code that enables the system, and the testing staff who is able to evaluate new changes to ensure product specifications are met.

Reasons to enter a feedback include:

- System errors
- Suggestions for improvements
- Unresolved help desk issues
- Suggestions for improvements
- Other comments or concerns regarding system functionality

Let's jump into the feedback submission process. For those who have never submitted feedback, it's not as complicated as submitting a mishap report, which was discussed in the Fall/Winter 2022 edition of Diving Safety Lines. This is a very straightforward process. Once you log into the RMI-SIR system, there are three ways to start the process of feedback submission. Whichever method you choose will hyperlink you to a window where you can fill out the required information.



FEEDBACK INFORMATION	STEP 3: Enter a brief and concise one-
Specific Record: * 🕤 Event Investigation ~ Event #: *	liner describing the feedback.
Feedback One-liner:	Example: Error occurred using the
80 characters remaining on your input limit. (Word Count: 0)	auto-link function to attach dive log
Description of Feedback/Error: *	XXXXX to RMI-SIR mishap XXXXX.
 What were you crying to accomplish? What page were you on? What field were you on? What data were you entering? What were your expectations? 	
- Any addit - Please in STEP 4: Provide concise details to allow for i	dentification ions.
of issue/feedback/recommendation for a tin	nely
4000 character resolution. Once you start typing, the suggest	sted questions
to help you answer will disappear, allowing	you to enter
the data pertinent to your situation.	
ttach File: Browse	
Please ensure that the file you are attempting to uploar STEP 5: Upload any pictures/screensho	ots/documentation to assist in resolving
AFSAS scans attached files for viruses. If a virus is der You may uplead up to 20 files at once. AFSAS limits th	
Tyou need to upload a file that exceeds this limitation STEP 6: Click "Save" to enter the feedb	back for processing.

Once you select "Save," a pop-up window will appear with your feedback report number. This number will disappear before you write it down if you aren't ready. Not to worry though, you can search for your submitted reports under "My Submissions" located on the left panel under the "Feedback" tab. This drop-down will allow you to track feedback status (History Log).



Proper Banding of SCUBA Bottles

By NDCS Brett Husbeck

During recent Diving Safety Assessments, we found self-contained underwater breathing apparatus (SCUBA) doubles with one band holding them together. This puts undue stress on the manifolds and is also a safety concern. The kit comes with two bands and all the hardware to put them together. If you receive new SCUBA bottles, or you're turning your single bottles into doubles and don't have enough bands to properly secure them together, wait until you have all the required parts before you put the SCUBA doubles into service. The saying "Do you want it done right, or do you want it done right now?" applies here.



Figure 1 Two bands are required for the Thermo and XS Isolation manifolds. This picture shows only one band.

The paragraphs below are straight out of the manufacturer's assembly instructions for Thermo or XS SCUBA Isolation Manifolds:

Positioning Bands on Cylinder

While the cylinders are laying parallel, on their side, slide the top band up the cylinders until it is just below the shoulder of each cylinder. Make sure that the crossbar can still rotate freely by hand. If it cannot, the cylinder band spacing is not matching the manifold spacing, so you will need to lengthen or shorten the manifold accordingly. Position the bottom band so that the bolts will be spaced exactly 11 inches apart, when measured center-to-center.

Tightening Bands

Insert the band bolts from underneath the bands. Examine the entire assembly. If the cylinders are parallel to one another and able to lie flat, then alternately tighten the nut on each band bolt until they are snug. Do not over-tighten to the point where there is visible distortion in the band reinforcing plates under the nuts. End of procedure.

The other concerning finding was using one band on twin manifolds with a J valve. The only authorized way of using one band is if you have the Aqualung twin cylinder adapter kit P/N 18252 and are using the following buoyancy compensators.



Figure 2 Aqualung twin cylinder adapter kit P/N 18252

• Black Diamond: All*

- Pro Unlimited: ML, Lg, XL/XXL
- Pro QD: ML, Lg, XL/XXL
- Pro: ML, Lg, XL

The adapter kits comes with two individual nylon straps per bottle, one cylinder strap, two traction sleeves, one adapter block and all the hardware to assemble a kit. Using the second band at the top of bottles will potentially hinder the ability to use the nylon straps provided.

If you are using a buoyancy compensator that does not have the Aqualung adapter kit P/N 18252 and has two nylon straps that wrap around both bottles - or your command is using two individual single SCUBA bottles for a redundant air source, use both metal bands as illustrated below. The twin tank harness system comes with two bands and the hardware to assemble them.

Naval Safety Command and Naval Sea Systems Command are working together to find common ground when it comes to the proper application of using two metal bands or one metal band with the proper buoyancy compensator on SCUBA double bottles in Navy diving.

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 manifold can accept Yoke or DIN regula
- manifold comes marked at 3300psi maximum service pressure of manifold i
 Stainless Steel 7.25" or 8.0" twin tank ba
- 304 S/S 18 gauge bands Bands are 2.5" in height
- Includes bolts, hex nuts, butterfly nuts 8 2 AL 80 cubic foot cylinders, black

PRO TWIN SICE BLACK PVD

KIT, TWIN TANK BANDS STAINLE

KIT, TWIN TANK BANDS STAINLE

· Strap kit, 1" poly web hame

a diver ample working
rve setting 3442psi d kt washers 2000-0 2
S STEEL 7.25'
S STEEL 8"

Want more?

Check out our resources and publications: **Approach**, **MECH**, **Ground Warrior** magazines, surface and aviation safety newsletters, Safety Awareness products and more!

Naval Safety Command, located on Naval Station Norfolk, Virginia, provides resources and guidance to develop a Navy safety culture in which everyone is trained and motivated to manage risk and ensure the combat readiness of our forces and the Navy's global warfighting capabilities.

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The editorial staff is always looking for contributing writers. We want to publish your articles and stories that increase operational readiness, evaluate safety and health issues, correct deficiencies, and emphasize situational awareness.



Feedback or ideas for the next DIVING Safety newsletter issue?



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