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The Official Publication of the Association of Diving Contractors International



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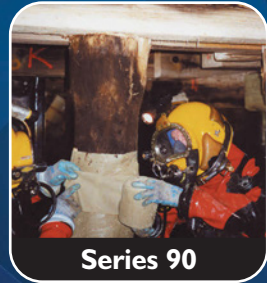


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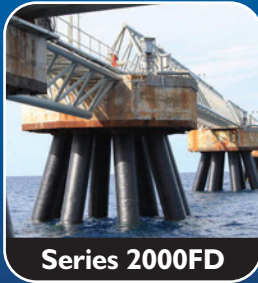
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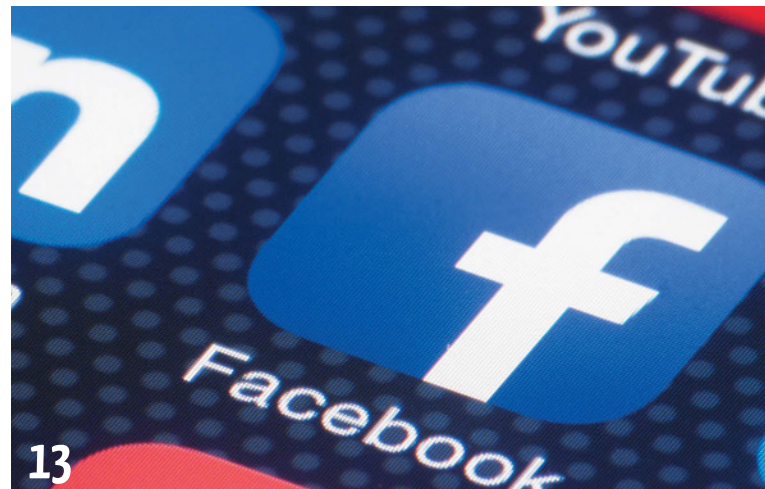
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FEATURES

- 11 **ADCI Advisory and Chapter Updates**
- 12 **Using Social Media Effectively and Responsibly**
- 16 **USN Dive Manual Revision 7**
- 18 **Helmets of the Deep**
DESCO U.S. Navy Mark V Helium
- 23 **Dysbaric Osteonecrosis**
- 25 **Setting Up a Social Media Calendar for Your Small Business**



13

DEPARTMENTS

- 8 **Board of Directors**
- 9 **President's Message**
Bryan Nicholls
- 10 **Executive Director's Message**
Phil Newsum
- 28 **Index to Advertisers**



18



25

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Visit our *Online Buyers' Guide* today at adci.officialbuyersguide.net.

Corrections:

On page 7 of the last issue of *UNDERWATER* Magazine, ADCI Past President **Craig Fortenbery's** name was misspelled. We apologize for the error.

UNDERWATER

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A MESSAGE FROM THE ADCI PRESIDENT | BRYAN NICHOLLS



First, I would like to say that it is truly an honor to have been elected as the ADCI's President for 2017. I would like to thank the ADCI membership and the board of directors for allowing me to represent our association in this capacity, as well as many others that have mentored and supported me over the past twenty years. I am proud to have served our association for nearly ten of these, and I will certainly put forth my best effort in my new role.

This being said, I have a tough act to follow! Craig Fortenbery did a spectacular job leading the ADCI for the past three years; during which time our association took on quite a few new initiatives and challenges.

On behalf of the association and the board of directors, I would like to thank Craig for a job well done.

For most of you, Underwater Intervention 2017 is in the books. I know that this year many feared that the sustained decline in oil and gas prices would have a profoundly negative effect on the show, as so many of our offshore brethren are struggling.

Despite this, I am pleased to say that UI 17 was actually very well organized and attended. The ADCI and MTS had recently partnered with Naylor Event Solutions for this year's show, and as many of you noticed, the show took on a different look and direction than in previous years.

Based on your feedback thus far, these changes were well received. Combined with the continued support of our membership and our loyal exhibitors, I would say that UI 17 was a success to build upon.

For those of you that missed the show, or wish to see what your association has accomplished over the past year, please visit the ADCI website and check out the video recap on ADCI-TV, titled "2016: Year in Review".


While you are there, check out the dozens of other video links and resources that the site has to offer. It seems that every time I visit, I see something new, or I rediscover something that could improve the safety practices of the divers that I work with now.

I would also like to encourage you to contribute what you can to *Underwater Magazine*, and the technical sessions at UI, as relevant content and fresh ideas are always welcome.

As most of us know, commercial diving has many facets, and is a trade that has traditionally passed its knowledge from one generation to the next; oftentimes without documenting the techniques, and lessons of those that came before us.

There is a wealth of knowledge and experience throughout our membership, which needs to be shared. This is especially true today, where parts of our industry are facing challenges that may only be seen once in a lifetime, and a lot of good divers have been forced to leave the industry as a result.

The strength of our association depends on our membership's involvement and their commitment to working safely. Let's do our part to ensure that future generations of divers have the support and resources that they need to maintain, and even improve upon, the best industry practices that so many of you have established.

After all, that is the entire purpose of the ADCI. 



This edition of *Underwater* magazine focuses on a problem which besets itself any entity that utilizes information technology and social media. In fact, the Association just released an advisory notice last month, encouraging industry stakeholders to closely examine the actual address of all incoming emails.

Like many organizations and companies, the ADCI is no stranger to Trojan horse and ransomware viruses that can come under the guise of a client, regulator, association, or personal contact. As such, the advisory notice issued offered **ten ways to help mitigate exposure: install quality antivirus; install real-time anti-spyware protection; keep anti-malware applications current; perform daily scans; disable auto run; disable image preview in Outlook; don't click on email links or attachments; surf smart; use a hardware based firewall; deploy DNS protection.**

Companies need to understand the legal issues around cybersecurity and how to respond when company sensitive information has been compromised. There are federal and state compliance requirements for the storing of personal information such as identification or social security numbers and medical records. These two items are part of the stored data for all diving contractors and schools, and it's important to have good plans in place for the handling (storage and maintenance) of personal data. Equally important is ensuring that company or school personnel gathering the data are using proper systems. Many companies are utilizing a 3rd party for maintaining their data. Lessons Learned have taught us that you should make sure that there's language in your contract with this 3rd party that indemnifies your company if there is a data breach. Like anything else that our industry prepares for, there should be a response plan for data breaches and identified personnel for carrying it out. At the very least, having a data response plan is a recognized best practice for any entity that collects personal information.

A data response plan outlines how the company or school will inform personnel that their personal information has been compromised. It is crucial that the company or school also keep an exact record of all information stored, so that personnel can take appropriate action.

Data breaches expose the contractor or school to possible regulatory penalties or civil lawsuits. Today, many companies are purchasing cybersecurity insurance to insulate themselves from potential fines and civil lawsuit payouts.

In addition to cybersecurity, the Association is also focusing on the issue of responsible Social media usage. Up until this year, the ADCI did not have a formal policy in place for social media usage under the ADCI's name, logo, or emblem. The article in this edition of *Underwater* focuses on Using Social Media Effectively and Responsibly. It looks at the merits of social media usage for promoting a brand or message. The article also looks at precautionary measures organizations should observe when it comes to adopting a social media marketing strategy. ≈

ADCI Audit Initiative

Effective 1 March 2017, the ADCI launched its Audit Initiative for Contractors and Schools that have not previously undergone an ADCI audit. The window for those companies and schools that fall into this category is thirty-six (36) months from the kick off date. Don't wait until the last minute to get your company or school scheduled for the audit. For any questions on the audit initiative, please contact the ADCI office.

ADCI Advisory Updates

NEW USCG FORMS FOR REPORT OF MARINE CASUALTY, COMMERCIAL DIVING CASUALTY, OR OCS-RELATED CASUALTY

On July 1, 2016 the United States Coast Guard released its newly revised CG-2692 forms, which was made available on the Coast Guard's HOMEPORTR website under the Investigations Mission Area. These forms are also available via the Coast Guard's main internet site.

An informational announcement with guidance and a link to an instructional video on completing the forms was posted to the Maritime Commons blog.

Submissions made using the previous version (CG-2692 03/13) were accepted for the rest of the 2016; however, units were to follow-up with the submitter and advise them of the grace period, the new forms, and the need to transition for future submissions.

To download the forms, please visit underwatermagazine.com

ADCI Chapter Updates

CHILEAN CHAPTER

Claudio Castro, CEO of STS Chile, provided this issue's update for the Chilean Chapter.

Important news and events from the last 3 months:

The Chilean Navy invites ADCI and Chilean Chapter to participate in the new National Diving Regulations discussion; Chilean Navy participate in Latin American Chapter Meeting in Panama; Chilean Diving School Prosub divers promotion with international standards; Industrial Commercial Diving Nitrox training and competency evaluation on Project of Mining company with ADCI standards.

Any trends that have emerged from your chapter that could impact other ADCI members?

Subsea construction project for a IOGP client performed through ADCI standards with 0 accidents and over 87000 men hours

When is your next chapter meeting and what is on the agenda?

May 2017, new Chilean Regulations

WEST COAST CHAPTER

Tom Ulrich, Vice President of American Marine International, provided this issue's update for the West Coast Chapter of ADCI.

"Overall WCC members are staying occupied with projects. Currently the planning for the Annual Chapter Meeting Agenda taking place at the Santa Barbara Maritime Museum this September is underway. The agenda for this meeting, which will take place on Friday September 22, will be focused on the 50th anniversary of the ADCI

and the 25th anniversary of the Historical Diving Society. The technical committee is currently working through an outreach and testing best practices protocol for dive hoses."

MIDWEST CHAPTER

Don Wilkins, Vice President of Marine Solutions, Inc., provided this issue's update for the Midwest Chapter of ADCI.

"We had a meeting in February at Underwater Intervention and discussed the ADCI Audit initiative, the show and some of the changes from past years, and upcoming plans and outlook for the association. Though we do not have our next meeting planned at this time, we would like to look into providing information from recent board member audits and what members can expect when they sign up for an audit." ≈

CLOSELY EXAMINE INCOMING EMAIL ADDRESSES

The ADCI is encouraging industry stakeholders to closely examine the actual address of all incoming emails. Trojan horse and ransomware viruses can come under the guise of a client, regulator, association, or personal contact.

These viruses can spread throughout an office and company, literally shutting down operations for undetermined periods of time.

Check with your IT service provider for detailed guidance on best preventive practices to minimize virus, spyware, and malware exposure.

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4. **PERFORM DAILY SCANS**
5. **DISABLE AUTO RUN**
6. **DISABLE IMAGE PREVIEW IN OUTLOOK**
7. **DON'T CLICK ON EMAIL LINKS OR ATTACHMENTS**
8. **SURF SMART**
9. **USE A HARDWARE BASED FIREWALL**
10. **DEPLOY DNS PROTECTION**

Using Social Media Effectively and Responsibly

BY AARON LAY

Though still in its relative infancy, there is no question that social media has fundamentally changed the way human beings communicate. From helping to foster political uprisings and Twitter controversies, to viral videos and status updates, it's virtually impossible to think of a facet of private or public communication that social media hasn't affected over the last 15 years.

According to a recent report from jeff-bullas.com (a highly lauded digital business site), there are over 3 billion active Internet users, and nearly 2.1 billion of them have social media accounts. Popular platforms like Facebook and Twitter have become an essential part of getting a business or organization's message out. For any entity needing to promote its brand or mission, social media is no longer a choice. It's a requirement.

Considering social media to be nothing more than a passing fad that only millennials and tech-savvy folks interact with is, at this point, equivalent to committing marketing suicide. Having a social media presence is something that's not only expected but also relied upon in both business-to-business and business-to-customer interactions.

Clearly, the commercial diving industry is no exception here. True – our industry has existed and thrived long before the advent of social media and presently functions relatively smoothly in cases that social media marketing is not employed.

But as the old Dylan song goes, "the times they are a-changin'." Many young people currently breaking into the industry are folks who have largely grown up with a smart phone in their hands and interacting with one social media platform or another. These people *expect* a dive school they're interested in attending or a contractor they'd like to work for to have not one, but several active social media accounts.

Bryan Nicholls, COO at U.S. Underwater Services, LLC and newly elected president of ADCI, acknowledges the benefits of social media as well as the changing demographic in our industry. "In my opinion, the biggest benefits are cost and the ability to expose countless others to our brand. We believe that is important to remain visible...and this is becoming more apparent as the end user of our services gets younger and/or more tech savvy."

Phil Newsum, Executive Director of ADCI has seen positive results for using social media to expand the Association's message and drive traffic to its various



media offerings (print, video, etc.) and has also seen the industry demographic changes first hand. "While there's print and video out there, social media has, in a very short span of time, eclipsed those to become the front line of communication."

Not only are social media channels an excellent way to establish an online reputation and drive traffic to your organization's message and mission, it's (mostly) free.

Nicholls asserts, "U.S. Underwater Services has used various forms of social media for approximately five years. We

have found that our current platforms allow us to reach a large number of people almost instantly, and at no cost. This is particularly valuable when there is news to share, we are recruiting, or when we are attempting to meet with many of our clients at one place, such as a tradeshow or conference."

Though social media is a highly beneficial resource for businesses and organizations, caution should certainly be exercised to ensure that it's handled responsibly. There are many reasons for this, but damaging the image and reputation of various

"Every company that has rolled out social media messaging has had to institute safeguards that state if you're an employee, you can't go on [social media] and slam the company or anyone else. No one is immune, including the person making the negative statement."

parties is at fore of this concern. Newsum offers a cautionary anecdote.

"Every company that has rolled out social media messaging has had to institute safeguards that state if you're an employee, you can't go on [social media] and slam the company or anyone else. No one is immune, including the person making the negative statement. Because if a client sees the remark, they may be less likely to hire that person, and then the company doesn't get the job, which trickles down to everyone."

Nicholls echoes Newsum's sentiment. "As companies, we all have brands and reputations to protect. This also extends to our clients. Now that nearly everyone has a smart phone with camera, video, and the ability to immediately post whatever they want for the entire world to see, you must have polices in place to ensure that your personnel and even subcontractors do not inadvertently bring your company, or your client, into disrepute."

Virtually anyone in any industry will agree: when it comes to promoting your brand or message, social media is priceless. But it must be initiated and managed carefully and responsibly.

Claudio Castro, CEO of STS Marine Engineering and Construction of Valparaiso, Chile advises companies do their own research and make the best

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decision based on their needs and business culture. "There is a lot of professional information regarding the proper introduction of social media for a company that chooses to use them. Our advice is to research and learn best industry practices and widely express to personnel and employees the limits and proper use [of social media] on the job.

Bo Ristic, VP of Safety Strategy Quality at Chet Morrison Contractors, LLC Houma, LA warns that making social media should not be taken lightly in terms of management. A hands-on approach is the best way for a company to ensure its message is being endorsed and shared responsibly. "It has to be a company undertaking. You have to have someone *inside* the company to manage it. It can't be a side gig. We have a marketing director here internally who handles all our social media outreach. You have to have a clear line of demarcation to state that [social channels] are company-owned messages. The key is that it has to be done professionally."

Newsom speaks to the precautionary measures organizations should observe when it comes to adopting a social media marketing strategy. "We've recognized the power of social media for getting the word out. It's done wonders for us, and we've got the numbers to show for it. The usage has really gone a long way to promoting our message. It's absolutely proven. The power to promote your company is immense. But you have to go down this path responsibly, with awareness that it can be misused and when misused, can be detrimental."

These precautionary measures are precisely why ADCI recently rolled out its Policy Memorandum 3000.14. In Newsom's own words, this is meant to "...provide the membership with the guidelines for social media usage under the Association's brand (to include forum web sites, blogs, and other social media platforms)."

Below is some language from the Memorandum:

While recognizing the use of social media as a medium for self-expression, certain activities on the part of members may become a concern if they are detrimental to the objectives, purpose, and reputation of the Association.

The following guidelines have been established for social media usage (print,

broadcast, digital, and online services such as Facebook, LinkedIn, and Twitter) under the ADCI's name, logo, or emblem:

The Association of Diving Contractors International;

Prohibits any form of social media usage that is contrary to the purpose and interferes with the mission of the Association.

Prohibits any form of social media usage that may bring the Association, or its reputation into disrepute.

Prohibits any form of social media usage that directs harassing, demeaning,

slandrous, or hostile language toward another party (member or non-member).

Prohibits any form of social media usage that disrupts the smooth and orderly flow of work and collaboration within a chapter, company, or office.

To interact with the ADCI on Social Media, follow @adc_int and @UnderWater_Mag on Twitter, join the Association of Diving Contractors International LinkedIn and Facebook groups and most importantly join in the conversation on all of these platforms! 🌊

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USN Dive Man

The U.S. Navy presented a Think Tank Presentation at *Underwater Intervention* about the USN Dive Manual Revision 7

By Ryan J. Stewart, NDCM (MDV), USN

In December 2016, Naval Sea Systems Command (NAVSEA OOC) completed Revision Seven of the U.S. Navy Diving Manual. This was one of the largest revisions ever completed, and took more than two years to finalize. The mission of Revision Seven was two-fold: First, it was based on the Diving Operations Assessment (DOA) formed by direction from the Chief of Naval Operations in October 2014, based on a series of Class A mishaps. Secondly, it required an update of the technical information and procedures in accordance with the OPNAVINST 3150.27 (series).

To this aim, we wanted to give the Diving Fleet more control over their diving forces. We sought to provide a better planning process and guidance on how to dive, instead of providing more rules to follow. Also, we replaced rule-based decision-making with analytical decision-making, returning the operational risk decision making back to the Fleet. With that in mind, NAVSEA can, and does, provide engineering and medical rules based on physics and physiology to keep our Divers safe, but we can't manage operational risk by providing rules for every situation a Diving Supervisor may face – our force is too diverse.

With that in mind, we concentrated on ways to strengthen the Diving Supervisor since they are the primary person responsible for executing safe and effective diving, and the person most able to prevent mishaps. This is based on the fact that not every side has a Diving Officer or a Master Diver, but every side has a Diving Supervisor. To provide the Diving Supervisor with the most effective tools to accomplish the mission we updated the planning and Operational Risk Management (ORM) information in Chapter 6, consolidated emergency procedures, improved readability, and provided new and updated checklists.

To improve the readability of Revision Seven, we reduced redundancies by consolidating information to one location, moved information to the most relevant location, and clarified material and bulletized paragraphs where possible.

Overall, we reduced the number of chapters from 21 in Revision Six to 18 in Revision Seven, while slightly reducing the total growth of page numbers. Of the three chapters deleted, they include Chapter 12 (Mixed Gas Diving Theory), Chapter 13 (Mixed Gas Operational Planning), and Chapter 17 (MK 16 MOD 0 Closed Circuit Mixed Gas Underwater Breathing Apparatus). The formulas from Chapter 12 were integrated into Chapter 2 (Underwater Physics), the information from Chapter 13 was combined with Chapter 14 (Breathing Gas Mixing Procedures), and the information from Chapter 17 was integrated with Chapter 15 (Electronically Controlled Closed Circuit Underwater Breathing Apparatus Diving).

Some additional changes made to Revision Seven included updating the mishap reporting verbiage in Chapter 5 (Dive Program Administration), adding appendix 2B (U.S. Navy Dive Computers), 2C

(Environmental and Operational Hazards) and 2D (Dynamic Positioning).

We also updated the recompression chamber support level information in accordance with the OPNAVINST 3150.27 (series), and revised the non-U.S. Navy certified recompression chamber inspection checklist for utilization when a U.S. Navy certified chamber cannot be reached within the required timeframe. As well, the dive tables were updated to the V-VAL 79 algorithm, which has changed some of the decompression limits. For example, the air no-decompression limit changed in Table 9-7 at 60 feet of sea water from 60 minutes in Revision Six to 63 minutes in Revision Seven.

In conclusion, the U.S. Navy diving manual is, among other things, the Navy Diver (ND) rate-training manual. We wanted to ensure our focus on Revision Seven would provide Navy Divers the best resource we can give them to learn and apply their chosen trade. 🌊



ual *Revision 7*



NAVAL STATION MAYPORT, Fla. - Navy Diver 3rd Class Mitchell Lafave explains the different gear used by the Dive Locker with Naval Sea Systems Command Commander Vice. Adm. Tom Moore as Rear Adm. James Downey, Commander Regional Maintenance Center observes at Southeast Regional Maintenance Center (SERMC) at Jacksonville, Fla. Sept. 1st. Photo by Scott Curtis.

DESCO U.S. Navy

Serial Number 1470, Date 8-4-44

BY LESLIE LEANEY

This helmet is one of possibly only a handful of original U.S. Navy Mark V Helium helmets that were introduced during World War II, that have survived in their original configuration. This style of helmet was developed by the U.S.N. during the 1930's and came to public attention when they were used on the salvage of the USS Squalus in 1939. The design of the helmet was still being refined during that salvage but the outbreak of WWII accelerated the requirement for a helium helmet to enter production.

In the late 1940's a diver was killed when he accidentally went upside down and water entered the helmet through the exhaust valve. The water was not sufficient to drown the diver but it did wet the caustic soda in the canister and the resulting fumes were fatal.

DESCO started producing this style of helmet during WWII and the model shown here does not have the modifications that were introduced during the late 1940's. These modifications including installing a lifting eye in the center of the bonnet so that the diver could be winched up off of his stool. The helmet weighed in excess of 100 lbs. and lifting this heavy Mark V rig by means of a winch proved less fatiguing for the diver. Another modification was introduced to the exhaust system, which terminated with a perforated bowl, exactly the same as the standard air Mark V. In his excellent 1978 book, *The Deep Sea Diver Yesterday, Today and Tomorrow*, HDS member Bob Martin noted that, "In the late 1940's a diver was killed when he accidentally went upside down and water entered the helmet through the exhaust valve. The water was not sufficient to drown the diver but it did wet the caustic soda in the canister and the resulting fumes were fatal. Since then, a non return valve has been installed at the end of the channel to prevent any entry of water into the helmet."

Thus, all the USN Mark V Helium helmets in military service were almost certainly upgraded and retro fitted with these two modifications.

This particular helmet escaped those modifications because it was either sold/loaned/leased/gifted to the Soviet Russian

military during WWII as part of assistance to the Allies of the USA during that combat. It is well documented that ranking Soviet military officials were at DESCO observing helium test dives during WWII. This cooperation between USA and Soviet Russia on helium diving technology extended beyond merely observing tests. The USN Mark V Helium helmet was formally introduced to the USN diving community in the USN 1943 Diving Manual. The closeness of cooperation between the USA and the Soviets can be evidenced by the fact that the Soviets translated this manual into Russian and republished it in 1946 for use by the Soviet navy. A description and images of the USN Mark V Helium helmet also appeared a year earlier in a 1945 Russian diving manual. As yet I have not seen any photos of the USN Mark V Helium helmets being used in Russia and I do not know how many were exported to them.

However, this period of international cooperation quickly evaporated after the end of WWII and the two former allies entered the Cold War. By the time that the diving fatality noted by Bob Martin probably took place, the Cold War was underway and in 1948 the Berlin Blockade escalated tensions. In this climate it is most probable that the US Navy no longer had clear channels through to the Russian Navy and that the two modifications noted were never received

Mark V Helium



or acted upon by the Russians. Hence this helmet remained in its original production configuration.

It was brought back from Russia to the USA along with a 12 bolt Siebe Gorman helmet in the early 1990's when the political changes in Russia made a great deal of military equipment available. I was invited to inspect the helmets when they arrived and noted that this helmet had seen a lot of use. It was sent to DESCO for overhaul and went straight into a private American collection. It came back on to the collectors market a few years ago and I managed to acquire it.

The Russians already had a helium capability during WWII and manufactured their own helium diving helmet. According to research by HDS Russia's Alexander Sledkov, and published in issue #35 of this Journal, the Russians had reached "depths of more than 100 meters" in open water trials during 1939 in the Black Sea. During a chamber test at Leningrad in 1940 they reached 200 meters (approx. 656 feet). I do not know how much, if any, of this information was shared with the USA, but I assume some details must have been for the Russian military officials to be invited to attend the DESCO tests.

During the years I have been researching diving equipment I have only seen one other USN Mark V Helium helmet that retained its original exhaust and did not have the lashing eye modification. This was a 1917 Schrader that had been retrofitted for helium and was most likely used on the salvage of the Squalus. When I found it the helmet had been stripped of all its helium components



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and returned to a standard Mark V air configuration, apart from the original helium exhaust, which stayed intact. It was used by a commercial diving operator as a helmet for underwater tunneling and jetting.

To commemorate the 70th Anniversary of the successful raising of the USS Squalus by USN divers, the HDS commissioned DESCO in 2009 to manufacture 26 USN Mark V Helium helmets in this original configuration. All these helmets sold in a brief period of time.

I would be pleased to hear from any members who have located any WWII era USN Mark V Helium helmets that have survived in their original configuration. 🌊

Leslie Leaney is the Founder and Publisher of The Journal of Diving History, and the Co-Founder of the Historical Diving Society USA. He has worked as a consultant on diving history for numerous media companies and his research has been translated and published in several languages. Leslie is a Founding Trustee of the Santa Barbara Maritime Museum and was inducted into the ADCI Commercial Diving Hall of Fame in 2017. All photos copyright of Leslie Leaney Diving Archives. Photos by Trent Schultz

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Because Underwater Intervention brings together the best and brightest from across the industry, it is the best place to gather interview footage and editorial ideas for ADCI TV and *Underwater Magazine*. Already, ADCI TV has published videos recapping the event and an in-depth interview with Dive Lab Inc.'s Rocky Heikkinen about the critical importance of dive helmet maintenance.

These videos are just the beginning, as ADCI TV has a year full of videos planned on important industry topics and events. Be sure to check in every month at videos.adc-int.org and subscribe to the ADCI newsletter, *Underwater Today*.

The conversation doesn't end at Underwater Intervention, so also make sure to use the **#ADCI** hashtag on Twitter, use the ADCI Facebook and LinkedIn pages, and read each issue of *Underwater Magazine* for up-to-the-minute happenings in the commercial diving industry. Interact with us on Twitter by tweeting **@Underwater_Mag**, **@adc_int** and **@UITradeShow**.

ADCI and Naylor Event Solutions are hard at work planning an Underwater Intervention 2018 that will build on the success of UI17 and top it! Visit underwaterintervention.com for updates. We look forward to interacting with you all year round!



Dysbaric Osteonecrosis

We continue our medical series with a conversation with Dr. Brian Bourgeois on the topic of dysbaric osteonecrosis.

At Underwater Intervention 2017, one of Commercial Diving educational tracks dealt with dysbaric osteonecrosis. *Underwater Magazine* had the opportunity to sit down with Dr. Brian Bourgeois during the show to discuss the illness and what impact it has on divers, how to prevent it and how to treat it if you are suffering from it. For more medical information from Dr. Bourgeois, please visit ADCI-TV at adc-int.org.

Underwater Magazine: Can you explain what Dysbaric Osteonecrosis Is?

Dr. Bourgeois: Dysbaric osteonecrosis is a result of inert gas that is dissolved within the bone or the fatty tissue of the bone. It does not come back into solution, it is not breathed off. So effectively, dysbaric osteonecrosis is decompression injury from inert gas, but it is in the bone. The sequelae of it are effectively bone death and collapse of that portion of the bone. Dysbaric osteonecrosis occurs primarily within three bones in the body. These are what are called yellow bones, or fatty bones. They're not blood forming organ bones. So they occur in your femurs, which are your thigh bones, your humerus, which is the upper portion of your arms, and your tibia, which is the longer bone in your lower leg. The place we worry about it most often is in the weight bearing areas, so the part that forms the joint, primarily in the hip. These bones are more susceptible to dysbaric osteonecrosis, but what is most important is that they bear weight. So if the bone dies there, because it is bearing weight, it loses its architecture. It cannot support weight, and it collapses upon itself. Some people get pain, they get joint destruction. If the dysbaric osteonecrosis occurs within the shaft of the bone, it's actually rarely ever noted. In fact, it's not treated. You don't have the collapse, you don't have the direct weight bearing, so you don't have all the sequelae. So the location makes a large degree of difference.

UW: If it occurs in the weight bearing areas, are there any warning signs to look out for?

Dr. B: It's notorious for its late presentation. Most people do not know they've had this problem until they start having pain in the joint. By that time, they've already had collapse. The changes that occur prior to collapse, in fact, don't cause any pain. Now, there is often an association with decompression illness, so somebody might have a joint pain that is treated but the changes that occur in the bone are not quickly following. So even if you studied it on an MRI or a test, you often wouldn't notice those changes. You probably wouldn't see them for a number of weeks afterwards. Most of the time, nobody knows the exact incidents that precipitated it, and in fact, it may not be one particular incident. It may be multiple ones. Most people present at a later date with simply a complaint of pain.

UW: So if they present at a time of collapse, is there anything that can be done to treat it?

Dr. B: So at that point, the bone changes that have occurred, have somewhat progressed far enough where you only have two options. There's no medical option. One option that orthopedists may offer is a drilling of that section of the bone. The thought process behind that is that that section of the bone is drilled with several holes, which causes stimulation of bone growth and hopefully you can repair the architecture. More



often than not, the treatment is a replacement of the joint. Effectively a total joint replacement. That's what I've seen most often in my experience.

UW: Is this a potential career ending injury?

Dr. B: No, it's not a career-ender in my mind. Both options, if they're successful, do not have any sequelae directly affecting their diving. In fact, a person who gets a joint replacement can't ever get dysbaric osteonecrosis again, so they're effectively protected. It's a big piece of metal and it won't ever get bent. So there's a recovery period of time, obviously, but once they recover, if they're physically able, there's not going to be any specific restriction or disqualification or other factor that will necessarily keep them from going back to diving.

UW: What are some steps that divers can take to lessen the likelihood of suffering from dysbaric osteonecrosis?

Dr. B: Some of the biggest risk factors are repetitive diving outside of the decompression limits. Or people who repetitively dive without decompression schedules. Probably the largest group it occurs in is breath hold divers. You see a lot of people who are native, who live on the islands; the classic is the

ADCI Diving Physicians Advisory Committee To Release New Requirements for Advanced First Aid Inventory

The ADCI Diving Physicians Advisory Committee (DPAC) has been developing a revised inventory list for diving medical kits. The Committee conducted a study to examine the practicality, feasibility, as well as liability factors, to determine the appropriate contents for diving medical kits.

Taking into consideration the skill and competency of personnel on any given diving operation, the Committee determined that some existing medical kits contain tools that only certified medical personnel (doctors) should utilize. The ADCI DPAC also identified recommended items which should be included in diving medical kits, which will aid DMTs and other non-medical personnel in certain medical emergencies.

The recommended inventory list for diving medical kits will be included in the upcoming revision to the ADCI International Consensus Standards for Commercial Diving and Underwater Operations (edition 6.3), as well as posted on the ADCI web site.

pearl harvesters that do a lot of breath hold diving. They have a lot of inert gas load, they don't undergo any decompression treatment, and hence they have a higher risk. So divers, make sure that they have adequate decompression. They make sure that they record

any incidents of joint pain. Other risk factors that make it more likely are alcoholism. That's one of the big risk factors. Obesity is another big risk factor. Abnormal cholesterol or high cholesterol. There are some inborn errors of metabolism where you have a congenital

defect of an enzyme that may make it risky. There are about 60 different risk factors for it, but these are the most common and so these are the things you need to try to minimize.

UW: You did a video for ADCI-TV recently where you discussed the certain medications you can't be on and dive. If you are one of the people who has high cholesterol and you take a statin, are you still able to dive on that?

Dr. B: I think that that is a grey area. It's not a definitive black and white. I would not say that somebody on a statin is necessarily restricted from diving. You have to understand the caveat that people on statins may have certain side effects that may make the treatment of certain diving conditions cloudy or confused. So somebody complaining of muscle pains or some of the things you would typically associate with statins, may have a presentation that could mask a DCI incident. So those are things you need to discuss with the physician. They have to be minimized. I wouldn't say there's a black and white distinction between medicines that lower cholesterol and the occurrence of the illness and hence, somebody's clearance to dive. 🌊



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Setting Up a Social Media Calendar for Your Small Business

BY SMALLBIZTRENDS, ORIGINALLY PUBLISHED AT SBA.GOV

Social media marketing is powerful, but can become a time sink if you let it. And face it, none of us have unlimited resources -- we have to use the time and staff we have wisely.



Consistent activity is important when you're trying to build an active social following. Don't allow important social channels to go "silent" for weeks or months, because then you lose momentum. Setting a schedule helps you remember to update consistently.

Setting up a social media calendar helps organize your business's efforts and make the most of your limited resources.

A social media calendar sounds fancy, but it's really nothing but a schedule to help

you know what to do when. The calendar helps you and your team avoid forgetting to do social media consistently, or spending too much time aimlessly on social media.

A good calendar helps you:

- Plan out a variety of content types.
- Schedule future updates.
- Set aside regular time to monitor and respond to followers and customers on social channels.
- Find time to view social media analytics to measure the impact of your effort

GET YOUR TIME ALLOCATED ON A CALENDAR

The first step is to find a calendar tool you're comfortable with.

Many people prefer to simply use their regular calendar, such as an Outlook or Gmail calendar. They put recurring notations on their calendar blocking off an hour or so once a week to "batch" compose and schedule updates for the upcoming seven day period.

They might also include reminders to check for replies and comments on all channels once a day -- say, a 15-minute block of time every afternoon Monday through Friday. And they might also schedule 15 minutes once a week to check social media analytics to monitor performance.

With the kind of scheduling I just outlined, you or a staff member would be allocating just 2 to 3 hours per week to social media. That's a solid social marketing effort for a small business, especially given that customers today EXPECT businesses to be active on social. It's enough to make an impact, but not so much that it gobbles up too much of your precious time. Adjust your time commitment upward or downward depending on your resources and goals.

BE CONSISTENT, BUT VARY YOUR CONTENT

Consistent activity is important when you're trying to build an active social following. Don't allow important social channels to go "silent" for weeks or months, because then you lose momentum. Setting a schedule helps you remember to update consistently.

Having a planned schedule will remind you to vary your content, also. For instance, you will want to regularly share content of

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third parties, along with sharing your own content (so it's not always about "me, me, me"). And vary the type of updates you make (mix it up, with informative articles to read, fun videos or memes, and even the occasional special promotion or discount from your business).

A tool that can help is a social media calendar template. The template we use in my company helps us keep our content mix interesting by structuring certain types of updates on certain channels, by day of the week. It also helps us plan and be consistent in our updating.

SCHEDULING UPDATES

If you're "batching" your updates once or twice a week, you will need a scheduling tool for efficiency. In other words, you need the ability to get your updates composed ahead of time and input them somewhere so they publish automatically at the scheduled time. I can't emphasize enough how much time "batching" will save you. Interrupting your day to think of what to write and post a single update destroys concentration and is very inefficient.

We use Hootsuite as a scheduling tool in my business. But other good ones include SocialOomph and Buffer.

Also, channels may offer their own scheduling tools, and may be a good option if you tend to focus on a single social channel. For example, Twitter's TweetDeck is an excellent free tool that lets you schedule tweets in advance. Facebook offers Scheduled Posts for business Pages.

MEASURE AND ADJUST

Last but certainly not least, measure your efforts and set aside a few minutes every week to evaluate progress.

As Sprout Social advises, one way to be successful at social media is to assess how past content has done using social media analytics.

Each of the social platforms has some kind of analytics to measure impact. For example, Facebook and Twitter have data to show which pieces of content performed the best, including how many impressions, shares, retweets and/or comments each item achieved. But you can also use analytics tools including Google Analytics, which can help track traffic back to your

website or blog from social media. And various scheduling tools mentioned above such as Hootsuite may include analytics along with them. 🌊


ABOUT THE AUTHOR:


My name is Anita Campbell. I run online communities and information websites reaching over 6 million small business owners, stakeholders and entrepreneurs annually, including Small Business Trends, a daily publication about small business issues, and BizSugar.com, a small business social media site.

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



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www.inodive.com	
Mainstream Commercial Divers, Inc.....	29
www.mainstreamdivers.com	

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www.armadahull.com	
Bay-Tech Industries, Inc.	26
www.baytechrentals.com	
Dive Commercial International, Inc.....	20
www.divecommercial.com	
Divers Supply, Inc.	27
www.diverssupplyinc.com	
JW Fishers Manufacturing Company.....	24
www.jwfishers.com	
Miller Diving.....	Inside Back Cover
www.millerdiving.com	
Shark Marine Technologies Inc.....	21
www.sharkmarine.com	

COMMERCIAL DIVING SCHOOLS

Divers Institute of Technology.....	29
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Kirby Morgan Dive Systems, Inc..... 4
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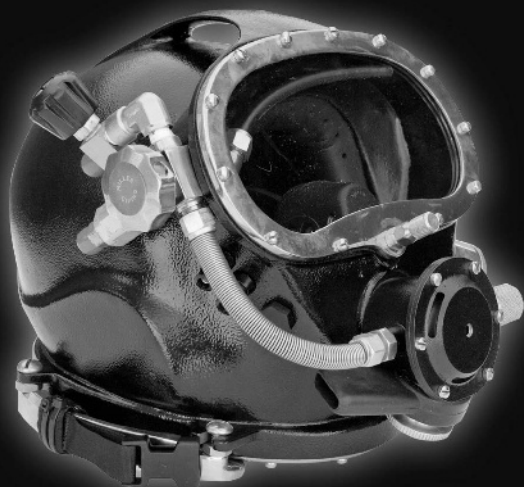
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