



March

When we started the newsletter, there was a decent layer of snow covering the land. Then the rain came and washed it all away. And now, as we put the finishing touches on this edition it was snowing again. Who knows, by this time next week we might find coconuts in the maple trees! But whatever mother nature throws at us, it doesn't seem to deter Nova Scotian divers. Cold out? Grab the hot chocolate and hit the beach! Rain? pfft! We're getting wet, anyway. Layers of ice? Get a team and cut out a triangle. Angry sea? Well, maybe not an angry sea, but make a plan for another day! For March, Greg Croft tells us a little bit about the longfin and shortfin squids, we look at aluminum alloy 6351-T6 and bring you three books from the bookshelf. On a sad note, the Nova Scotia dive community lost one of its own recently. JP Angelopoulos, past NSUC president, starts us off with a memorial for David Pate; friend, diver and former NSUC executive member. You are sadly missed and will always be remembered, David. Rest in peace, my friend.

In Memory of David Pate, NSUC Secretary 2018-2022

(JP Angelopoulos, NSUC President 2018-2022)

On February 9th of 2024, the Nova Scotia Underwater Council and the Nova Scotia Diving community unexpectedly lost a great member, David Alexander Pate.

Dave was a great diver and instructor, and one of the inaugural council members of the 2018 re-launched Nova Scotia Underwater Council.

His funeral in February brought in a great gathering of people from many different walks of life to share the love and memories of Dave. There were touching tributes from family, friends, colleagues, and fellow divers that showed how beloved and devoted Dave was to the people in his life.

I would like to share a few personal memories and on Dave's contribution to the NSUC.

In 2018 when the first elections were called for the NSUC executive council, Dave was nominated for the position of secretary and was voted in unanimously. Now that could have been because he was the only nominee, but I am very confident he would have had a landslide victory against just about anyone.

Dave's ability to balance a no-nonsense and direct approach to discussions and debates, with his characteristic wit and charm, made him a pleasure to work with. He could cut through the heavy brush with a single point that could allow us to see a clearer path ahead, and he always knew when there were battles to be fought or when to just let it go.

He was an idealist and a realist and we will always remember and thank him for that.

My only regret is that we did not get to accomplish all the goals we set out in 2018, but he's made a lasting impression on me, and I am sure many others can say the same.

We are all better for having him in our lives and a part of our community, and he will be greatly missed.

[David Pate Obituary - Halifax, NS \(dignitymemorial.com\)](https://www.dignitymemorial.com/obituaries/david-pate)



Dive Community Events

Easter Dives

- **East Coast SCUBA and Watersports:** 4th Annual Big Easter Hunt, March 29 to April 1. Eco-friendly eggs, each labelled with one letter - E, C, S or W – will be laid at various local dive sites (underwater, of course!). Join the hunt and see how many times you can spell ECSW. Drop off at East Coast for a chance to win some cool prizes and submit by 6pm April 1 in time for the draw April 2. Check their Facebook page for details.
- **Torpedo Rays Scuba Adventures:** Saturday, March 30. Come out with the gang from TRSA for a fun day of diving! Time and location will be announced soon so watch their Facebook page.

David Pate Memorial

TRSA is honouring their good friend and instructor with a few events in the coming weeks:

- **Classroom Dedication:** March 28: the shop is naming one of their classrooms after David with a gathering and plaque hanging ceremony. The date might change depending on when the plaque is ready. Updates will be posted on their Facebook page.
- **Blood Drive:** April 13. David always wanted to donate blood, but due to rules for people who lived in a country during a mad cow disease outbreak he was not allowed to do so. All dive community members are encouraged to come out and donate in David's honour with Surina Anstey and the Canadian Blood Services. See the TRSA Facebook page for details and location (TBD). <https://myaccount.blood.ca/en/join-team/SEAF0114026>

Chameleons of the Deep

(Greg Croft)

The longfin squid and the northern shortfin squid are common on the Scotian Shelf of Nova Scotia. Chromatophores in the skin let them change not only colour but pattern as well in a flash. They can blend in seamlessly or stand out with bold stripes! The "fin" is triangular running back from the tip of the head, so the shortfin squid runs down about 1/4 to 1/3 the length of the head from the tip, while the longfin squid comes back half the body or more. They are widespread across North America, from as far south as Florida and across the Atlantic to the United Kingdom as well.



A squid hovers above the sand. Photo by Greg Croft

Northern shortfin squid are widely migratory but despite covering vast distances, they only live 1 to 1.5 years, with most living less than 1 year!

Squid have been fished commercially in the summer and fall with dragger nets, and jiggers from massive thousand plus hook jigging rigs with flood lights and folks standing at the end of a wharf throwing out a single jig on a single line.

Divers have encountered squid in Nova Scotian waters often on night dives in the summer and early fall. In the 80's, a large 4 m across mass of thousands of egg sacs was spotted in French Village off a private wharf in about 5 m of water. I was one of the dozens of divers that dived over that muddy area to see the large mass. Some of the divers were lucky enough to spot the females dashing in to deposit finger shaped egg sacs one at a time.



Squid eating a sand lance on an evening dive at Fox Point. Photo by Cliff Andrews

tried to leap away to freedom!!

The common spots to find them were CRANBERRY COVE, PADDYS HEAD, FOXPOINT BEACH, and occasionally SANDY COVE in Terrence Bay. FOXPOINT was particularly rich in squid as the plentiful sand lance really drew them in.

By breathing gently, a diver could ease up to a school or come within a handful of meters of an egg mass a meter across, and watch females dashing in to attach an index finger shaped egg sac.

In 2023, divers spotted small numbers of Northern shortfin squid in spots such as FOXPOINT again, and near some wharves at night when the lights on the wharf attracted them.



A diver patiently watching squid lay their eggs. Photo by Greg Croft



Close up of squid eggs. Photo by Greg Croft

I'm hoping for a return to abundance in our warming waters for 2024, and I expect folks doing a few night dives near well lit wharves this coming summer may be treated to some stealthy visitors darting out of the darkness into their video lights!! Good hunting!!

Bonus clip! In our December issue we read all about an exciting late summer squid encounter and this month Greg followed up with some interesting squid facts. To close off our squid story, we leave you with a short video of the squid gathering at Fox Point in 2012. It's not the best quality but gives an up close and personal view of the squid and their massive egg deposit – plus a sneaky lobster grabbing a quick

evening snack! Check it out here on [YouTube](#).



An Oldie but Not a Goodie

A well-maintained aluminum SCUBA tank can have a very long service life lasting decades. This long service life means it is still possible to encounter tanks manufactured in 1990 or earlier. Prior to mid 1990, several manufacturers (not all) produced SCUBA tanks using aluminum alloy Al-6351-T6. Such tanks are susceptible to what is known as Sustained Load Cracking (SLC) in which cracks develop in the neck and shoulder area of pressurized tanks over long periods of time. SLC is a very slow process which can take up to 8 or more years for cracks to develop and progress to the point of a leak or rupture (ref: [Luxfer](#), [PSI](#)). The phenomenon is most common in tanks that remain filled for long periods of time, but exposing them to abuse such as overfilling or impacts increases susceptibility to SLC.

Because progression of SLC is so slow, cylinders manufactured from Al-6351-T6 have not been banned in Canada or the United States and can still be filled and serviced as long as they are properly inspected. In Canada, the cylinders must undergo visual inspection and eddy current test every year. Additionally, a hydrostatic test, plus eddy current test must be performed every five years. Technicians must be properly trained in eddy current testing and the test equipment must be calibrated every year. If these testing standards are strictly followed, the logic is that evidence of SLC would be detected early and the tank condemned before it poses a safety risk.

However, despite the fact these cylinders are not banned, some internet sleuthing reveals there are many shops that refuse to fill and/or service them. Some cite an increased incidence in inspection failures, while others just prefer not to take any chances - even though a tank has all the proper inspection certifications, staff have no way of knowing if the previous tester was properly trained in eddy current testing or if equipment calibrations are up to date. And although the number of failures is relatively small ([DAN](#) cites 31 ruptures out of 50 million tanks), the results can be catastrophic, resulting in structural damage, severe injury or death. For some shops the risk to the safety of staff and customers, no matter how small, might not be worth it. At the same time, it's also not difficult to find shops that will accept the cylinders as long they have proof of proper inspections. In fact, many internet forums have discussions on the topic in which participants state that refusal of service is unjustified based on the research.

So, what's the bottom line? The purpose of this article is not to offer an opinion as to which approach is best, but rather to give you some information about tanks manufactured from Al 6351-T6. If you are in the market for a used aluminum tank and happen to come across such a tank, check with your local dive shops before purchasing to ensure you can get it filled and serviced.

Considering the last Al 6351-T6 cylinders were produced more than 30 years ago, encounters are becoming increasingly less likely. Always confirm this with a dive professional but a cylinder is made from Al-6351-T6 if:

1. **Luxfer:**
 - a. In general, all cylinders manufactured in the U.S with first hydrostatic test date before June 1998 (Luxfer changed to Al-6061 in June 1998), but more specifically:
 - i. All Luxfer S80.8 manufactured before May 1987
 - ii. All Luxfer S72 and S100 manufactured before August 1987
 - iii. All Luxfer S80 manufactured before January 1988
 - iv. All Luxfer S50 and S92 manufactured before April 1988

- v. All Luxfer S30 and S63 manufactured before May 1988
- vi. All Luxfer S40 manufactured before June 1988
2. All Walter Kidde 3 Al cylinders
3. All Cliff Impact cylinders manufacture before July 1990
4. All aluminum cylinders under Special Permit numbers 6498, 922, 7042, 8107, 8364, 8422

Note: Catalina Cylinders were **never** manufactured with Al-6351 T6.

NSUC This ‘n’ That

Annual General Meeting: Our AGM is planned for May 16, 2024. This is an important one, so you won't want to miss it! The current executive has been in place for two years and that means it is time for our biennial executive elections. We will also present this year's winner of the Jane Biggs Award and hopefully have a guest speaker. We will provide scheduling details once they are finalized.

Executive Elections: During the AGM you will be voting for the new executive, so starting thinking about who you would like to nominate! Positions are available for President, Vice President, Treasurer, Secretary and Regional Director. Existing executive members and NSUC general members are eligible for nomination. Stay tuned for more details.

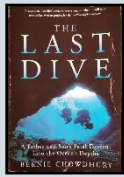
Jane Biggs Award: Each year the NSUC presents the Jane Biggs award to a person who has significantly contributed to the Nova Scotia diving community. The winner is selected from a list of nominees submitted by NSUC members. Call for nominations and submission details will come out soon, but here is a recap of the criteria:

- Nominations can be made by any member of the NSUC
- Nominees do not have to be members of the Nova Scotia Underwater Council
- Winners of the award will have made significant contributions to the development, promotion, teaching, and/or understanding of diving in this province
- People who own or run dive related businesses are ineligible

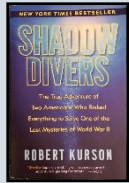
David Pate wrote a wonderful article for CBC about Jane shortly after she passed. We were going to summarize it here for those who did not know her, but we could never tell her story the way he could. To learn a bit more about her, take a few moments and read [Jane's story](#).

From the Bookshelf

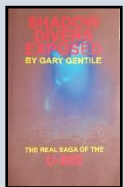
This month we pull out a few books in which the protagonists in each strive to solve a deep-water mystery off the coast of New Jersey. Although each has a different author and weave different storylines, they could be thought of as a sort of trilogy as they feature a lot of the same divers and events, including the mystery wreck. And while each book tells a different story, all three exist due to a drive to uncover the identity of the U-Who, a German U-boat discovered off the coast of New Jersey in 1991. Small footnote though: rather than a tale of discovery, the third book in our list is actually a rebuttal to the second, but in the end, its goal is to also tell the story of the U-Who.



The Last Dive by Bernie Chowdhury: Follow father and son dive team Chris and Chrissy Rouse as they progress from open water divers to expert cave divers and on to the deep wrecks off the northeastern U.S. coast. In their pursuit to identify the U-Who, they join a diving expedition in 1992 for what would turn out to be their tragic, final dive.



Shadow Divers by Robert Kurson: Kurson tells the story of John Chatterton and Richie Kohler's tireless mission to solve the mystery of the U-Who. Initially rivals, the two men developed a friendship working together as they combed their way through the sunken U-boat, searching naval records and corresponding with historians until finally, after six years of searching, they discover the U-Who's true identity and how she came to rest off the coast of New Jersey.



Shadow Divers Exposed – The Real Saga of the U-86g by Gary Gentile: Gentile disputes many, if not most, of the facts and minute details presented in Shadow Divers, including how the U-boat met its fate. Is Shadow Divers a work of fiction or is 'Exposed' a case of sour grapes? Gentile, Chatterton and Kohler are all very accomplished divers, so who knows? Both books provide for interesting reading so give them a read and see what you think! Also, the title is a bit of a spoiler!

If you do decide to add these to your library, we suggest you read them in the order listed. Since Shadow Divers Exposed is essentially a critique of Shadow Divers, it makes sense to finish Shadow Divers first. But The Last Dive focuses on the Rouses themselves and touches on many other subjects such as the early days of nitrox, the use of lines in wrecks and the psychology of deep diving. The book's relatively brief coverage of the U-Who concentrates on the events of their fateful dive to the wreck, but does not get into the research and discovery details presented in the other two books and as such serves as a nice introduction to the U-boat.

Watch John Chatterton's [Shadow Diver on the U86g](#) to see what the inside of the U-Who looked like during back in 1992.

What's Happening Out There?

Are there any events or activities taking place in the upcoming months you think might be of interest to the underwater community? If you would like get the news out there let us know and we can post it in our newsletter. Just send your idea to any of the email addresses below and we'll get in touch.



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