



# THE SAFETY STOP

COJO's MONTHLY NEWSLETTER

On Location from: COJO Diving World Headquarters  
158 Garden Grove Road, Lincoln, NB, Canada

ISSUE 44

## What's New

Hello and welcome to the **Sept 2014** edition of The **COJO Diving Safety Stop Newsletter**.

During **August**, COJO travelled all over New Brunswick diving with the **Cub Scouts**, students and guiding divers from all over the place!!

There were **tons of courses** completed and COJO is just getting in the door from an awesome wreck excursion to the **Empress of Ireland** in Rimouski, Quebec!!



A special thanks to **Michael Lallier** and **Jerome Alberts** for inviting COJO on that awesome excursion!! **100 year anniversary!!** Woo Hoo!!

COJO would also like to remind you that the **Eastport Pirate Festival** is 5 to 7 September!! Don't miss it!! **Diver Ed** will be meeting COJO in Eastport for an arrrghsome time!!

**Doc Octo** is back finally with an awesome article on **Immersion Pulmonary Edema!!** Awesome read!!

COJO encourages you to send in your pictures for the **Photo Of The Month**. If your picture gets chosen, your picture and name will be published in the Safety Stop and you could win a coupon redeemable for merchandise or services at COJO Diving.

If you would like to stop receiving this newsletter please reply to this e mail with "Unsubscribe Me" in the Subject Line

Thanks and Safe Diving!!

Connie and Joe

COJO Diving



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### Courses During August

As usual, the summer has been **crazy busy!!**  
During August, COJO ran the following courses:

- **PADI** – Advanced Open Water
- **PADI** – Open Water Course (Dives)
- **TDI** – Technical Sidemount Diver
- **DAN** – Basic Life Support
- **DAN** – Emergency Oxygen for Diving
- **COJO** – Discover Diving



### Courses To Come

During **September**, we will be running the following courses.

- 9 to 14 Sept – **TDI** Intro to Technical Diving
- 13 to 14 Sept – **SDI** Solo Diver Course
- TBD – **TDI** Technical Sidemount Diver
- 28 Sep 14 – **COJO** Discover Diving for Children at Tara Manor, St Andrews
- 23 Sep – **DAN** Basic Life Support
- 30 Sep – **DAN** Emergency Oxygen for Diving Emergencies

We are also getting ready to run the **PADI Dive Master** course starting in **October**. We only have two spots left!! If you would like more information on this, or any, course please e mail us at [cojodiving@gmail.com](mailto:cojodiving@gmail.com)!!





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## Excursions During August

During **August**, COJO travelled to beautiful **Rimouski Quebec** for a dive on the **Empress of Ireland**. This is a beautiful wreck with an absolutely tragic story!! She **sank** in **1914** and **1012 people lost their lives** in the cold waters of the St Lawrence River.

This wreck has been known to have no visibility, extreme currents and frigid waters!! When **Michael, Jerome, Connie** and **Joe** went to dive her the first day, the seas were just too high!! On the second day (this morning!!) we all managed a beautiful dive with **NO CURRENT**, 6 to 10 feet vis and cold but not frigid water!!!! What an awesome day and an Historic (**100<sup>th</sup> year anniversary**) dive!!!

A **special thanks** to **Michael Lallier** and **Jerome Alberts** for inviting us for the dive and to **Simon Pelletier** of **Divetech** for awesome advice, and to **Francis Bouchard** of **Centre De Plongee** for the fantastic charter!!! What an awesome trip!!





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### EXCURSIONS TO COME

#### Eastport Pirate Festival!!

Don't miss out!! **COJO** is meeting up in Eastport on **6 September** with their favorite underwater superheroes, **Diver Ed** and **Captain Evil!!** There will no doubt be some pirate mischief for Diver Ed and Joe to keep Connie and Captain Evil out of!! If you do one thing this year, do something productive but if you do two things, make one of them the **Eastport Pirate Festival!!!!**



© Connie Bishop 2012

#### COJO Goes to Les Escoumins!!

That's right!! From 19 to 22 September, **COJO** will be meeting up with **Triview (Jerry Shine)**, **Diver Ed** and **Captain Evil** in beautiful **Les Escoumins, Quebec!!** This trip is the same one that Connie made last year and **this time, she is even taking Joe!!** No doubt because of his awesome French-speaking skills!!!

This promises to be the **trip of the summer!!!**



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### DOC OCTO!!



## Immersion Pulmonary Edema- A new and interesting way to drown

When we think about the effects of pressure while diving we usually only consider the behaviour of gasses. We think about the compression of gas filled spaces like sinuses or the inner ear; or how our no-decompression limits are influenced by gas being forced into tissues at greater depths. While these concepts are of course important, it is worth remembering that body fluids are also influenced by pressure. Now, some will argue that fluids are only marginally compressible and therefore not influenced by pressure at all. Well, those people would be wrong and should be treated to "howls of derisive laughter". For while it is true that fluids can't be easily compressed, they can be moved from one body compartment to another. As well, the body is more than a collection of compartments, but rather a dynamic system always striving to maintain equilibrium. In other words, while at depth the body itself will shift fluids around to maintain optimal conditions. The diving induced disease, immersion pulmonary edema or IPE, is a great example of the problems that can be caused by these fluid shifts at depth. For clarity, immersion means being put into water and pulmonary edema means fluid in the lungs where the air should be. Now, it doesn't take a physiologist to know that if there is fluid in the lungs where the air should be, effective breathing becomes problematic. So, as the title of this column suggests; consider IPE as a new and interesting way to drown.



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Let's start thinking about IPE by looking at this creepy case study. The story starts with a healthy 49 year old technical diver who developed a tickling sensation in her throat while at 291 feet. Frankly, at 291 feet I'd be developing a tickling sensation in my underwear as I emptied my bowels, but I digress. The problem starts a dry cough which worsens at her deco stops where she now notices shortness of breath and a gurgling in her breathing. As she ascends through her decompression stops the gurgling and coughing become worse and she has a buddy cut off her hood to help her breathe. At the surface she was given oxygen and EMS was activated. Investigations at a local hospital showed a large collection of fluid in her lungs which eventually resolved with oxygen and diuretics (drugs that lower the circulatory volume). In the end she was diagnosed with IPE.

It's worth remembering that since her symptoms started at maximum depth her problem has nothing to do with decompression illness. Furthermore, in the absence of cardiac disease it's more than likely that not one, but several factors caused her episode of IPE. Let's first consider what happens even as you step into the water. The pressure of immersion (in even a few feet of water) forces fluids from the outside parts of the body into the circulation. Further, if the water is cold, surface blood vessels constrict also shunting fluid into the circulation. Those tight wetsuits that look great on those TUSA models, can also force fluid from the edges of the body into the circulatory system. All of this pushing can load the circulation with almost an extra litre of fluid. Over-hydrating can be another culprit, again increasing the fluid load in the circulatory system. As an aside, that's why you have to pee shortly after a dive. Yup, the kidneys want to maintain homeostasis by getting rid of that extra fluid that got pushed into your circulation at depth.

The second part of IPE has to do with the blood vessels that course through the lungs. Pulmonary blood vessels, in order to allow gas exchange between circulating blood and inspired air, must be thin. Thin vessels are fragile and if the conditions are right fluid can leak from the circulation into the airspaces of the lungs. In fact, if the vessels are damaged badly enough not just fluid but whole blood can leak into the lungs. This can cause you to cough up blood; one of the symptoms of IPE and a real date killer. Several conditions can influence the leaking of fluid into the lungs. First, think of any leaky water system, two things make it worse. One would be increasing the pressure inside the pipes, as we discussed above. The second would be lowering the pressure outside the pipes. Experts think that conditions that both increase the pressure in the vessels and lower the pressure in the lungs cause IPE. We already discussed how immersion pressure, cold and over-hydration will cause more pressure inside the circulatory system. Other factors such as anxiety and exertion also



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lead to increased blood pressure and again increase pressure in the blood vessels.

Lowering the pressure in the lungs themselves is another way to encourage fluid to move into the lung airspaces. Lower pressure in the lungs can result from any situation where you feel like you are working harder to breathe. For example, breathing dense gases, high resistance from poorly maintained or adjusted regulators, breathing quickly or tight suits constricting the chest. The perfect storm of IPE happens when the pressure inside the vessels is high and inside the lungs is low. While IPE tends to happen more often in older divers with pre-existing cardiac issues, it can also happen in very fit divers when the conditions are right. There is also considerable debate among experts about the safety of returning to diving if an IPE event occurs. Although IPE is less common than other diving problems several common sense strategies can lower the risk:

Avoid tight fitting suits

Don't dive without sufficient thermal protection-comfortable is better

Don't over-hydrate before a dive-there is too much of a good thing

Avoid undue exertion-slow and easy

Use well serviced and adjusted regulators-breathing should always be easy

Divers with cardiac issues should consult a diving knowledgeable MD

Coughing blood and shortness of breath obviously require medical attention

*"I was gratified to be able to answer promptly, and I did. I said I didn't know."*

— Mark Twain





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### September's Featured Course

#### Divers Alert Network

Basic Life Support / Emergency Oxygen for SCUBA Diving Injuries Course



#### Basic Life Support: CPR and First Aid

The DAN Basic Life Support: CPR and First Aid (BLS: CPR&FA) course offers entry-level training in providing basic life support to adults with life-threatening injuries while activating emergency medical services.

This program meets 2010 International Liaison Committee on Resuscitation and American Heart Association guidelines on Cardiopulmonary Resuscitation and Emergency Cardiac Care.



#### Emergency Oxygen for Scuba Diving Injuries

The DAN Emergency Oxygen for Scuba Diving Injuries course is designed to train and educate interested individuals in the techniques of using oxygen as first aid for a suspected dive injury. In addition, this course will introduce the fundamentals of recognizing diving injury warning signs, response and management. This program also provides an excellent opportunity for experienced divers and instructors to continue their education.

#### Course Cost:

**\$99.00+HST each course**

**--- or ---**

**\$168.30 + HST for both together  
(September Only)!!!**





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### SEPTEMBER'S FEATURED PRODUCTS

**Hollis**

#### F1 "BAT FINS"

**POWER WITHOUT COMPROMISE...** The Hollis fin blends graceful movement, power and bulletproof construction. Meet the new standard in diving. Now shipping in standard black or with yellow tip for High Visibility!!



~~\$240.00~~ **\$216.00**



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### Photo of the Month

This photo was taken by **Connie Bishop** in August. Joe was just coming out of the water after an awesome dive on the **Empress of Ireland!!** Note the water was very calm!!

**Awesome picture Connie!!**

For this great photo, Connie has one **two free movie passes** to see **The Guardians of the Galaxy!!** (Joe's Favorite!!)

**Great Job Connie!!**



**Keep sending in those pictures!!**



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### Other News

We would love for you to follow us on Facebook. Become a friend of COJO Diving at <http://www.facebook.com/COJODiving>

Our book "Sidemounting for the Recreational Diver" is available either In Store or by e-mail. For information about the most awesome way to dive send a note to [info@cojodiving.com](mailto:info@cojodiving.com) !!



Our new book, "The Technical Tao of Joe" will be out any time now!! Don't miss out!! This book gives you insights on Joe's ways of teaching. Awesome for anyone taking a course through COJO or anywhere!!

Come in and visit us at the [COJO Diving World Headquarters!!](#) We have a beautiful facility with a nice fireplace to sit and warm up at after a cold day of diving. There is always lots of coffee and hot chocolate and Joe usually has fresh popcorn on!!

Thanks and we are looking forward to diving with you soon!!

Connie and Joe!!