4 _ 2011

Alert Diver

Digital Magazine

EUROPEAN EDITION

A QUEST FOR DECOMPRESSION
The PHYPODE project

THE DIVERS DAY
Gdansk, Poland

OUT OF CONTROL
DAN Reviews Buoyancy-Related Incidents and Accidents

FREE DIVING
In Formentera Apnea Reigns!

DIVING AND NUTRITION:
an interesting relationship

DAN Europe News - Organo ufficiale del Divers Alert Network Europe Periodico trimestrale - Aut. Trib. Pescara n. 19/91 del 4/2/94 - Anno 2011 - n.4

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DIVERS ALERT NETWORK EUROPE

Cover photo by Andrey Nekrasov

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Publisher
DAN Europe Foundation
Casella Postale 77
64026 Roseto degli Abruzzi - Italy

Editor-in-chief
Prof. Alessandro Marroni, M.D.

Managing Editor
Dr. Nuccia De Angelis

Editors
Cristian Pellegrini, Laura Marroni,
Franca Di Muzio

Graphic Designer:
Laura Volpe

Layout :
Francesca Di Ferdinando

Contributors to this issue:
Julian Boffa
Dr. Jake Freiberger
Rick Layton
Francesca Marroni
Massimo Pieri
Dr. Neal W. Pollock

Cover Photo by Andrey Nekrasov
Winner of the 2011 Photography Contest

Our Translators :

Croatian	Ivan Ivicevic
	Darko Kovacevic
Czech	Klement Hartinger
Danish	Olav Balslev
Dutch	Els Knaapen
English	Davide Arnold Lamagni
Estonian	Markko Junolainen
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Slovenian	Igor Urh
Spanish	Ramon Verdaguer
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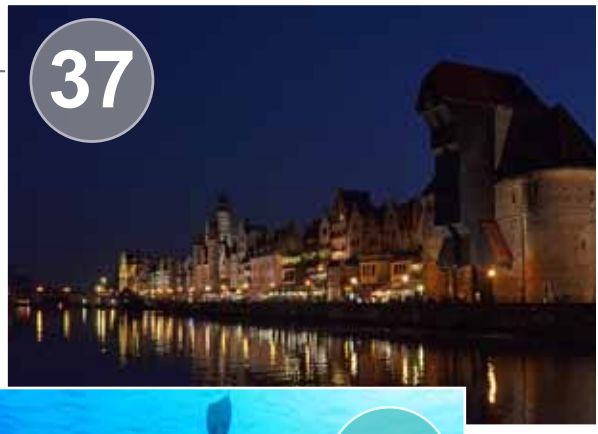
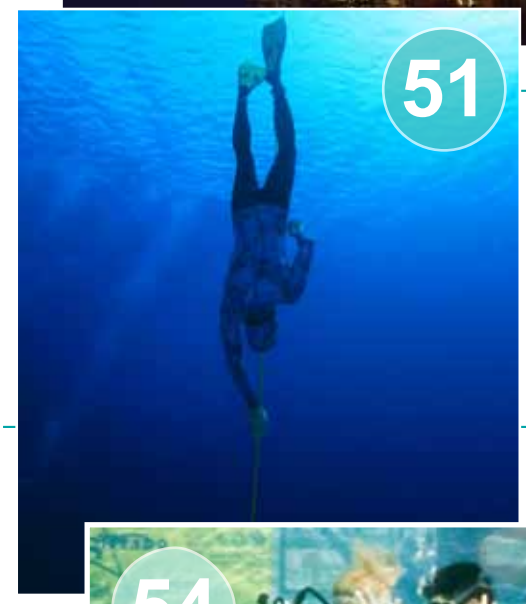
	Murat Egi

WRITE TO US!
editor@alertdiver.eu

or mail to:
Editor, Alert Diver magazine
c/o DAN Europe Foundation
Casella Postale 77 - 64026
Roseto degli Abruzzi - Italy

Summary





Editorial

Alessandro Marroni, M.D.
President, DAN Europe
President, International DAN

Dear DAN Europe Members,

Continuing in our effort to ever improve our relationship with our Members and to favour a more direct contact with the members of the DAN Europe Staff, it is my pleasure to host the following "Guest Editorial" by Laura, DAN Europe Human Resources Manager and also the Dissemination Manager and Administrator of an important EU funded research project DAN Europe is involved in.

Enjoy reading this issue of "your Diving Safety Magazine"!
Clear waters to all of you!

Guest Editorial

Laura Marroni
Dissemination Manager,
PHYPODE Project

A new Project to Better Understand Decompression

Finally, an important public institution, the EU, starts to back and promote initiatives for the safety of our wonderful sport, and recognizes the crucial role played by scientific research in diving.
Alert Diver readers know how much the *Divers Alert Network* has been contributing to this in recent years. We were pioneers and still are innovators in the research field, in and outside laboratories. This role is now being recognized at the highest levels.

In this issue of Alert Diver you will discover the details of a project called PHYPODE (Physiopatology of Decompression), which has been funded by the EU under the Marie Curie Initial Training Networks (ITN) initiative.
The project unites academic partners, international not-for-profit associations, hyperbaric medical centres and industrial partners on an international scale, with the common goal to better understand - and prevent - decompression sickness (DCS).
DCS is not only related to diving activities. As you might know, it is an acknowledged risk of every situation involving variations in ambient pressure (space flight and extravehicular activity, exposure to altitude, hyperbaric tunnelling intervention etc.).

This is why the range of both environmental conditions and population characteristics involved in such activities is now wider. ?We need a new interdisciplinary approach to decompression to reduce DCS risk.?

There is another very interesting aspect of the project: scientific development is not the only objective of Marie Curie ITN. This EU initiative also aims at **giving young researchers the opportunity to enhance their career prospects** and join established research teams.

The PHYPODE project will provide a collaborative training and research programme for 12 Early Stage and 2 Experienced (post-doctoral) researchers. In this issue you will discover more details on the DAN Early Stage Researcher.

As you flip through the magazine, you will also get information on education, disabled divers and the rehabilitative effect of scuba diving.
In *Incident Insights* you will read about weight belts, auto-inflators and other buoyancy-related incidents and accidents.

In *Successful Stories* you will sigh with relief as you learn how a professional diver got out of a very bad situation while living in Egypt. This fellow diver benefited from an insurance cover provided by DAN.

Many times divers in general and DAN members themselves enquire about the right plan and insurance schedule for them... If this is your case too, you will find the article *Pro vs Sport* quite interesting, see the new column dedicated to insurance tips.

I hope you like this issue, and I am eager to read your comments and suggestions!

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editor@alertdiver.eu

or mail to:
Editor, Alert Diver magazine
c/o DAN Europe Foundation
Casella Postale 77 - 64026
Roseto degli Abruzzi - Italy

Intraocular gas bubbles and scuba diving

Nov 6th, 2011

Dear DAN,

I recently read the very interesting article with the title "Eye surgery using intra-operative gas and its suitability for use in scuba diving", Issue IV 2010.
I would like to congratulate you and the author Dr. A. Palumbo for addressing this interesting topic.
I would like to make some remarks concerning the expansion properties of intraocular gases in relation to diving physiology and gas physics. This probably extends even further than the pure aspects and problems that derive from the Boyle's Law, which are mentioned in the article.
As stated, the main gases that are currently being used in vitreoretinal surgery are Sulfur hexafluoride (SF6), Perfluoethane (C2F6) and Perfluopropane (C3F8).
The main characteristic of these gases is their expansion properties when injected into the eye. The expansion occurs because nitrogen, oxygen and carbon dioxide from the blood and the ocular tissues diffuse into the gas bubble until equilibrium is reached. Then the bubble slowly diminishes in size. An expansion of a gas bubble in the eye can lead to a rise in the intraocular pressure and other problems, that can sometimes be massive and vision threatening. This is the reason why in most cases a mixture of air (that does not expand) with expanding gas in non expandible gas percentages in the mixture is injected into the eye and not pure gas during vitreoretinal surgery. All this happens under the usual circumstances (not in diving).

What is expected to happen during and after diving in an eye containing a gas or an air-gas bubble?

Apart from the aspects of gas volume changes during the dive according to Boyle's law it should be expected, that during the decompression phase and after surfacing during the first hours after the dive, nitrogen from the supersaturated ocular tissues and the blood will diffuse into the gas bubble, which will expand even after surfacing under constant ambient pressure (this is not explained by the Boyle's law), potentialy leading to intraocular pressure rise and other problems.This is an aspect that also has to be mentioned, since Alert Diver is also read by professionals of the diving community that possess deeper understanding of diving physics.

I would be interested in your opinion on this subject.

Sincerely

Georgios Blatsios, MD, PhD
Diver
Ophthalmologist, vitreo-retinal surgeon

The author's answer

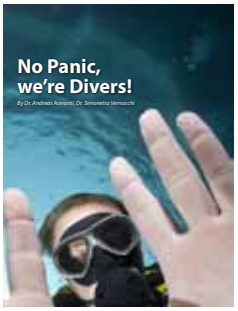
Thank you for your interesting remarks and your contribution to the topic. In order not to make the subject too complex, my paper illustrated only the effects of Boyle's Law on an intraocular gas bubble during scuba diving. You accurately pointed out that after a dive nitrogen from the supersaturated ocular tissues and the blood would diffuse into the gas bubble, which would expand and cause an intraocular pressure rise.

That happens because of the physical properties of the gas injected into the eye during the operation. As a matter of fact, nobody should scuba dive if he has a bubble of gas (any kind gas) in his eye. That is the most important recommendation we as ophthalmologists can make on this topic.

Antonio Palumbo, MD

Panic and Solo Diving

October 5th, 2011



It might sound paradoxical, but the mechanisms you described in your article about underwater panic are exactly the reasons why I mainly have been diving solo for many years.

Diving in a group or with a single partner, I always used to face several aspects of stress. Firstly, I was worried about not getting ready in time and about keeping the other(s) waiting (I usually take a lot of photo equipment with me, which is why I tend to need more time to prepare for the dive).

But a lot worse was the stress caused by the fact that I considered the other divers' safety preparations and safety measures during the dive insufficient. I was often aware of risks that were being taken. When I expressed my concerns or demanded further preparation, however, I often ended up being ignored nonchalantly, sometimes even in an annoyed manner. My concerns also often lead my fellow divers to assume that I might be a bad or insecure diver (I dive all year round, even in inland German lakes and have a record of more than a thousand dives).

Under water I rarely witnessed the kind of behavior that would have saved our lives in the event of an emergency. The carelessness of some diving groups was unbelievable. For example, some divers failed to judge distances correctly and were located so far apart from each other that in case of insufficient oxygen supply a diver would have trouble reaching his partner in time. By the time he got there he would most likely be facing extreme dyspnea. Acute dyspnea, however, can easily cause the diver to make mistakes when handling the octopus regulator, e.g. swallowing water, which immediately causes panic. My own unsuccessful attempts to make up for my fellow divers' mistakes often started me off going into anxiety. It was often forced to follow my partner who had disappeared, many times without finding him. Above water my partners' reaction was usually a comment like "don't worry, nothing has happened…"

As a solo diver on the other hand, I am absolutely calm, I can thoroughly prepare my dives, take as much time as I need and make sure that my body is in a state of calmness all through the dive in order to save up some energy reserves. I regularly practice safety elements and rescue routines – with partners or in a group I can rarely do this, and if so, only secretly (e.g. I covertly take of my mask to train the situation of mask loss). I am convinced that due to bad dive preparation and performance, which seems to be more the rule than the exception in partner diving, emergency situations will often end in severe accidents, whereas as a solo diver I am able to manage an emergency situation a lot better.

I do not want to argue that solo diving is a universal remedy against panic for all divers. In the past decades as a diver I have also met divers to whom the idea of diving without a partner was frightening and therefore would probably cause panic. But I do intend to contradict the arrogant-dogmatic indoctrination with which various diving associations and dive site tenants still treat solo diving as if it was "a crime against the crown". Your article has further encouraged me to do so. It is about time for us to consider solo diving as an optional way of diving, maybe even the preferred way of diving for those with the right mental attitude. In my opinion many divers would benefit from an article in your magazine which discusses - from a psycho-medical point of view - for whom and under which circumstances solo diving is not a crime against the crown.

Volker Grundmann (Germany)

Positive Feedback

September 23rd, 2011

Hi There, Love the magazine. Keep them coming - good work ☺
Nice format, lots of pictures, interesting content and very good for the environment.

Cheers,
Tim (UK)

Basic Life Support guidelines – a query

September 1st, 2011

Hello DAN,

I did a DAN course some time ago and last week had a discussion with a club member who told me there is no difference in providing BLS to a person who is victim of drowning or to any other person. He recently did a course with another organisation and was told that the course followed the latest guidelines.

Is it correct that now guidelines are all the same?

E.T., The Netherlands

DAN answers

Dear E.,
Thanks for your question, which is not uncommon.
You are right. There is a difference in BLS guidelines when referring to victims of drowning. This difference was published in the 2005 ERC (European Resuscitation Council) guidelines and re-confirmed in the latest (2010) guidelines.

Sudden Cardiac Arrest (SCA) is the leading cause of death in Europe. The dysrhythm (abnormal rhythm of the heart) which is mostly present in these cases is called Ventricular Fibrillation (VF). VF is what we call a shockable rhythm and therefore the resuscitation guidelines state that the initial treatment is immediate bystander CPR (combined chest compressions (30) and rescue breaths (2)) and early electrical defibrillation.

So, the guidelines are focused on the most common cause of death, and are written with reference to Sudden Cardiac Arrest and Ventricular Fibrillation.

Since CPR only normally does not restart the heart, great importance is given in getting the EMS (Emergency Medical Services) to arrive as soon as possible, and the need of having also an AED (Automated External Defibrillator) available is clearly incorporated in these guidelines. Therefore, the guidelines state that, if you are alone, you should call the EMS and get an AED (if available) before you start CPR.

However, most cardiac arrests from non-cardiac origin depend on respiratory causes, such as drowning and asphyxia.

In these cases, the depletion of oxygen in lungs and tissues causes the heart to stop working. This means that rescue breaths are even more critical for successful resuscitation. And this is also the reason why there is a difference in guidelines.

In fact, the ERC published that, in case of drowning and asphyxia, there are some minor modifications to the adult BLS sequence. These are:

- start with 5 initial rescue breaths before starting chest compressions
- if the rescuer is alone, he should perform CPR for about 1 minute before getting help.

In case of resuscitation of children, the same changes are made; moreover, the depth of the compression is different (1/3 of the depth of the chest).

I do not comment on the course your club member did, but can confirm that all DAN Europe courses follow these ERC guidelines.

Kindest regards,

Guy Thomas
Director of Training and Operations

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New abilities for the physically challenged

The experience of DAN courses in Sicily

By Franca Di Muzio

From all-round training to solidarity training

On the crest of an ambitious rehabilitation project for the physically challenged, DAN Europe Training last summer went to Messina, contributing to creating a training event of high social priority.

One mustn't in fact forget that, besides satisfying the variety of needs in first aid courses with a wide range of proposals – such as the use of oxygen in first aid with the Oxygen Provider course and Advanced Oxygen (advanced reanimation techniques using oxygen), the Marine Life Injuries course (general first aid for injuries from marine fauna) and courses in AED (Automated External Defibrillation) – DAN Europe Training Programs do not offer only a specific instruction for activities tied to diving, but also prepare pupils who may not be divers in first aid techniques.

In Messina, training and rehabilitation have thus gone step-by-step with the "solidarity training" carried out in the context of the project **Con Te Oltre l'Ostacolo** *(with you beyond the obstacle),* organised by the non-profit organisation "Equitando" with the contribution of the Department for Equal Opportunities of the Cabinet. A project born to provide physically challenged pupils with the tools for acquiring greater independence in daily life, through multiple re-educational activities, games, sports and psychosocial and pedagogical activities. The event, lasting from March to July, saw the participation of Dr. Cosimo Muscianisi, a surgeon and DAN instructor, who taught two courses: BLS (Basic Life Support) and First Aid.

The importance of made-to-measure teaching

In the pleasant setting of the **"La Palma"** horse-riding club for the whole month of June, fifteen physically challenged people followed a course conceived for their particular personal characteristics. As is well know, DAN courses pay particular attention to the quality of materials provided for pupils and instructors, through a wide range of modern and high quality educational materials; in this case, besides the teaching materials and the DAN kits, exhibition panels were made to publicise the topics covered.

The **DAN student kit**, available in at least six different language versions, stays with pupils throughout their learning process (before, during and after the course) and it contains, according to the course: a bag, a pen, the full-colour student manual, flow charts, and the DAN First Aid Provider certificate and badge.

On his part, during the course, the instructor uses slides and films designed so as to deal with the topics in the programme and introduce the techniques which are to be applied. The use of these media keeps classroom time to a minimum without sacrificing teaching quality: pupils don't get bored and are attentive for the whole lesson. After that, during the demonstration of the techniques, the DAN instructor introduces pupils to realistic scenarios which cover all possible first aid situations, avoiding both overly simplistic situations so as to not make the students feel too complacent and overly complicated scenarios which cause a loss in confidence.

Step by step to the rescue

Sicilian students began their training with the DAN BLS (Basic Life Support) course, the first step in aid: here they are taught not only how to reanimate a person with cardiac arrest, but also how to prevent this happening, preparing themselves to react properly in the case of accident. The final objective is to give pupils basic life support skills in life-threatening situations, before the arrival of emergency medical services or Advanced Life Support (ALS) on the scene of an accident: let's not forget that the prompt arrival of emergency services and prompt BLS are two of the four links in the "survival chain".

In this particular case, Dr. Muscianisi adopted a mainly practical teaching methodology, which allowed the group to reach the set **learning objectives.**

DAN Basic Life Support learning objectives

A the end of the programme, pupils are able to:

- Explain basic Anatomy and Physiology
- List the 4 links in the "survival chain"
- Explain why Basic Life Support – BLS is important
- Name the objectives of BLS and reanimation
- Recognise dangers and carry out an environmental safety assessment
- Protect themselves from infection
- Describe the function of cardiac compression and ventilation
- Explain how to avoid gastric distension Verify the state of consciousness
- Reassure an injured person
- Open airways
- Check that breathing is normal
- Activate the emergency system
- Carry out cardiac compressions and artificial ventilation - CPR
- List the advantages of a face screen and mask for reanimation
- Explain the advantages of oxygen use during reanimation
- Explain the importance of defibrillation
- Name the most common causes of suffocation
- Describe the differences between severe and slight obstruction of airways
- Provide first aid for suffocation
- Explain why a breathing unconscious victim must be placed in the safety position
- Place a breathing unconscious person in the safety position
- Describe the functions of blood
- Provide aid for external haemorrhage (severe)
- Explain what shock is
- List at least 3 causes of shock
- List at least 7 indicative signs of shock
- Provide aid to injured people in shock

The Messina pupils showed their great desire to learn and great concentration and memorisation abilities. They thus moved on to the **DAN First Aid course.**

For a development of rescue skills: the DAN First Aid course

The DAN First Aid is an "additional component" of the DAN Basic Life Support course. The First Aid programme illustrates many First Aid techniques for slight and severe lesions, including:

- The assessment of lesions
- Assessment of diseases
- Immobilization techniques
- Treatment of injuries and bandaging
- Transport of an injured person
- Heat exhaustion and heat stroke
- Hypothermia

Teaching method: every DAN First Aid course is in two parts. There is a first academic session, during which students learn to recognise the revealing signs of a lesion, why and when to use First Aid equipment and the advantages this brings.

The second part of the course, which is also the biggest, is a session for the development of practical skills, during which pupils are able to practice techniques until they have mastered the use of the First Aid materials.

Seeing as First Aid techniques are forgotten over time, training for most DAN First Aid courses is repeated every 24 months; after the success of this event, new DAN Training expeditions to Sicily are not being ruled out.

From non-profit initiatives to prestigious show cases

Among other events, one must remember the participation of the DAN Europe Foundation in the **Salone Nautico dello Stretto** (Strait of Messina boat show). The event took place from last May 20th to 22nd with many visitors to the dedicated DAN Europe stand in the elegant surroundings of the Messina Fair.

Research Weekend in Wyregg am Attersee

(08/10/2011 – 09/10/2011)

By Francesca Marroni

We spent a beautiful weekend in Wyregg, Austria, devoted to research activities and courses. It was brilliant to see our classroom full of enthusiastic divers and future researchers! Some of our Austrian friends joined us as tutors, and helped us greatly during the practical sessions.

On Saturday we started with the **Research Operator course** and an explanation of several research projects, such as “Flying after Diving”, “Nitrox versus Air”, and the diabetes studies.

Module 1 ran very smoothly. We then had the pleasure to show how the **ARL (Advanced Research Laboratory)** actually works. With the precious help of our friends from the local Police department, we arranged an examination room in a few minutes.
The dive was planned in the early afternoon. The outside temperature was very cold, only 3 degrees, and weather was rainy and windy.

While divers reached their dive spot, we prepared the examination room. There were two Echographs, a bed where the diver could lay down and be examined, a Doppler Unit and a Termographic Camera.
This is how the Advanced Lab was organised: Termographic photo first, then Doppler evaluation, Heart Echography and finally Lungs Echography.

After the Lab, course attendants exercised in downloading their dive profile. Everybody did a great job and, at the end of this long, yet exciting working day, we had 14 new Research Operators!
On Sunday, participants learned how to use a Doppler unit and how to send Doppler profiles to DAN. After many practical exercises and a final examination, they gained the title of Research Technician.

Overall, it was a very intense and productive experience. We would like to give our warmest welcome to the new DAN DSL researchers!

The *motto* of the weekend? As Massimo Pieri used to sing all along these two days:

“All we need is DAN!”

DAN Europe included in the list of the Italian Research Institutes

By DAN Europe Staff

The latest, prestigious acknowledgement of DAN's role in the scientific research field arrived on Dec 16th, 2011, when the Italian Ministry of Education, University and Research included DAN Europe Foundation in the **official list** of Authorized Research Institutes. This gives DAN a new, interesting prerogative in the field of international exchange programs, allowing DAN to sign agreements for the acceptance of non-European researchers.

A fact that underlines the international reputation of DAN Europe as a research institute, already acknowledged by the European Union within the **PHYPODE** project (see the article A quest for Decompression included in this issue).

New hyperbaric chamber in Sharm el-Sheikh

By DAN Europe Staff

During the 7th DAN Divers Day, the Board Meeting of DAN Europe Directors took place.
Dr. Adel Taher, Regional Director of DAN Egypt and Director of the Hyperbaric Medical Center of Sharm el Sheikh and Dahab, announced an upcoming "face lift" in the Hyperbaric Medical Center of Sharm el-Sheikh.

A new sign for the new 12-person HAUX decompression chamber will be displayed on the new Center, being clearly visible from the main street and carrying three logos: Ministry of Tourism, Hyperbaric Medical Center, DAN Egypt. Another welcomed piece of news regarded the agreement between DAN Europe and MISR, the Egyptian National Insurance company.

Meet the sharks with us at the Oceanográfico, Valencia

By DAN Europe Staff

A new partnership has recently been signed between DAN and the City of Arts and Sciences, Valencia. This includes the Oceanográfico, the largest aquarium in Europe.

As a result, DAN Europe members will be entitled to get a 10% discount on the entrance fees of all buildings and attractions proposed by the **City of Arts and Sciences**.

One of the most original attractions is the Shark Encounter , proposed to qualified divers, who will be surrounded by 1.350 specimens of 51 different species, among which the impressive Sand Tiger Shark, Grey Reef Shark, Nurse Shark, Houndshark, Sawfish and Sunfish.

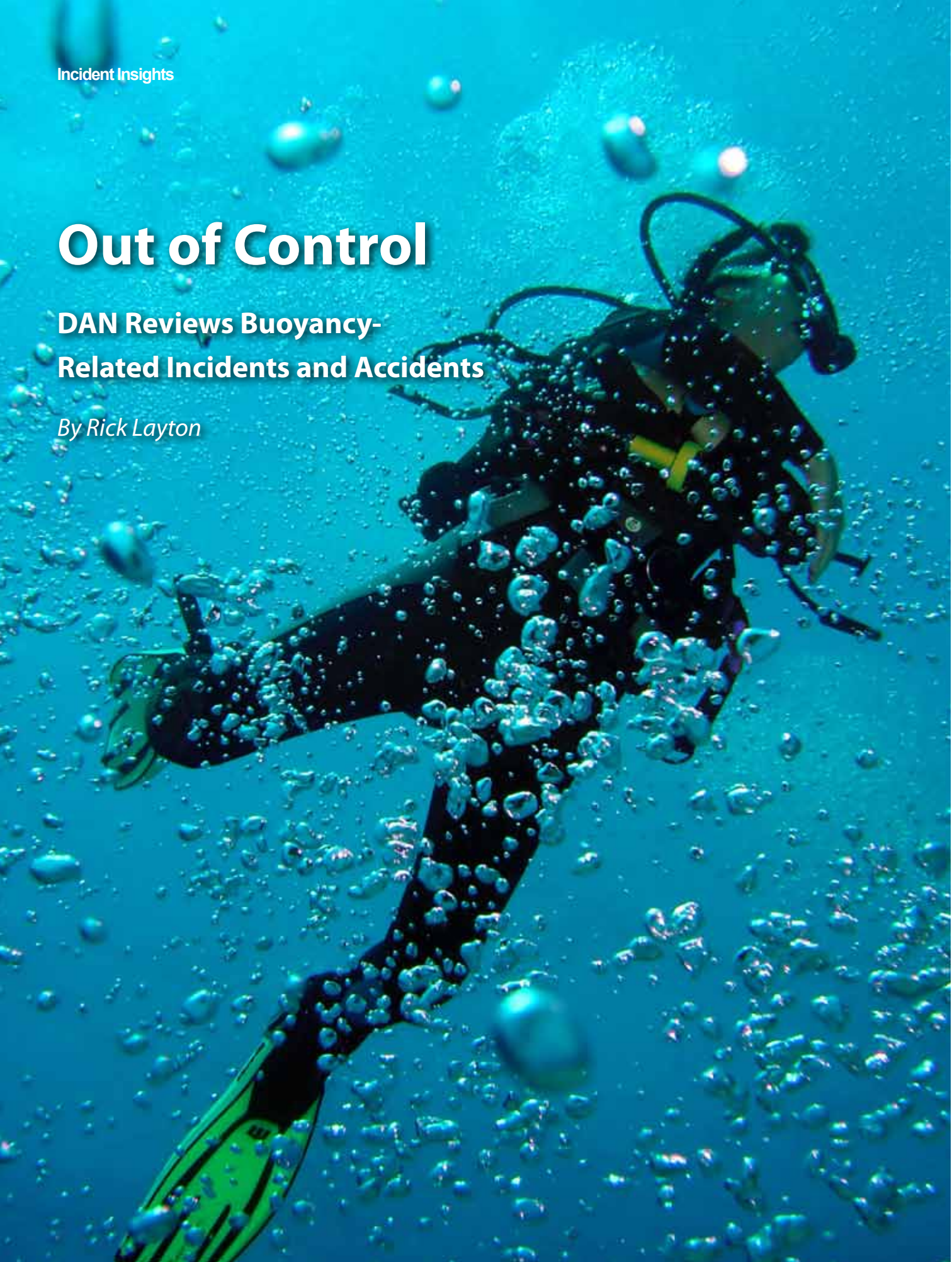
10% of the income of this activity will be donated to shark research and conservation projects.

DAN Europe, through its own International Diving Assurance Ltd. (IDA), is the official insurer of the event

Out of Control

DAN Reviews Buoyancy-Related Incidents and Accidents

By Rick Layton



Buoyancy control, perhaps one of the more confounding aspects of safe diving, is the subject here. Regulating buoyancy is not always easy, especially for beginners, and even experienced divers can lose control of it from time to time. Unfortunately, when buoyancy becomes a problem, peril may follow.

DIVER 1

That's what happened a few years ago to a 24-year-old open-water certified diver. According to the DAN Report on Decompression Illness, Diving Fatalities and Project Dive Exploration (the 2004 edition based on 2002 data), this diver had received her certification seven months before the accident. In that time she had completed 15 dives.

The trouble started when she was diving with a buddy at a depth of 60 feet (18 meters). The buddy experienced difficulty with his weight belt, and, while trying to assist him, she dropped her regulator from her mouth. Her buddy tried to help her, but his own situation wasn't improving. He lost his weight belt and had to surface. On the way he lost a fin, and his cylinder became detached from the tank harness.

It's unclear what exactly transpired next, but about 15 minutes later, she was found unconscious on the bottom with her regulator out of her mouth. She had made her final dive.

We don't know the experience level of the surviving buddy or why he had such difficulties on this dive. Neither do we know what caused the diver to lose her regulator and be unable to recover it.

It appears that the pivotal problem around which the tragedy unfolded was the surviving buddy's difficulty with his weight belt. Once you've lost or dropped a weight belt, there's no turning back. The beltless diver is positively buoyant and will most likely end up at the surface sooner rather than later. As this accident illustrates, dealing with any other problems can become impossible when buoyancy control is lost.

Problems with weight belts can take many forms. The first stems from the simple fact that as a diver descends, the wetsuit compresses, and unless it is adjusted, the belt becomes loose. In some cases, a loose belt can rotate around the diver's waist, positioning the buckle behind the diver's back. When that happens, it's nearly impossible to make further adjustments or to ditch the belt. At other times, divers slip up and accidentally drop their belts while attempting to make those needed adjustments.

DIVER 2

A completely different problem comes when a weight belt (or weight) is suddenly and unintentionally dropped during a dive. While the problem can arise from a diver's failure to make careful and timely adjustments to belt tension during the dive, it can also arise as the result of an equipment malfunction or failure.

Consider the diver who had purchased a new pocket belt and had just made his second dive with it. At the conclusion, he noticed that the stitching on one of the pockets had failed, and the two-pound weight was dangling precariously from what remained of the pocket. It was a close call, indeed. Had the failure occurred any sooner or progressed any further, a serious accident could have happened.

While it's easy to assume that the diver's belt was faulty, we shouldn't overlook the possibility that a close examination of the belt before the second dive might have given the diver a clue that the belt was literally coming apart at the seams. Certainly any new weight belt should be durable enough to survive two

dives, but we should never assume that because a piece of equipment is practically new that it is in good working order.

Diver 3

Another case involves a diver who was wearing a borrowed weight belt. While attempting to ascend from a depth of about 35 feet (10 meters), the diver realized that he was unable to kick hard enough. Rather than ditching the weight belt - and risk losing it - the diver used the auto inflator to help himself ascend.

Such incidents point out a common malady among divers - they worry more about the equipment they are wearing than about their own safety. While nobody wants to lose a perfectly good piece of dive gear, we would do well to remember that the whole purpose of our dive gear is to keep us alive. If that means we lose the gear in the process of staying alive, then so be it!

Over-weighting is another oft-ignored issue. When divers carry more weight than necessary, they also carry more air in their buoyancy compensation devices (BCDs) than needed. As the diver changes depth, the resulting change in buoyancy is greater. For example, consider a diver who is overweighted by 3 pounds (43.75 oz.) and offsets that with enough air to generate 3 extra pounds of buoyancy at depth.

When that diver ascends, this extra air expands, making him more buoyant than he would be if he had been properly weighted to begin with. If he descends, that air compresses, and more air must be added to remain neutrally buoyant. As a result, it is more difficult to control buoyancy throughout the course of

a dive, and the potential of overcontrolling or losing control is heightened.

Weight belts are not the only problem when it comes to buoyancy control. Buoyancy problems can also develop as a result of a BCD failure or malfunction. The underlying cause may be a manufacturing defect, design flaw or maintenance oversight as in the following case.

Diver 4

The 35-year-old open-water certified diver with more than 100 logged dives experienced a “near miss” while on a training dive that was part of a program in advanced-diver certification. It was the second dive of the day, and the diver had begun ascending from a depth of 83 fsw (25 msw) when he realized his buoyancy was improperly adjusted.

As he tried to inflate his BCD with the auto-inflator, bubbles gushed from an open port on the device. About that time, the instructor approached the diver with a spring-valve seat and screw-on cover for the BCD overpressure relief system in his hand. Apparently, the relief valve cover had been loose and fell off during the dive. Fortunately, the diver was able to continue his ascent and reassembled his BCD after he left the water.

It's common for divers to give themselves "mental head-slaps" when situations such as this occur, but in reality, such situations can be much more serious than we like to admit. Perhaps the only thing separating this final incident from the fatal injury of our first report's victim is dumb luck, and that's nothing to trust your life to.

By looking at these accidents and incidents, we can fine tune our procedures and attitudes, and enjoy safe diving.

About the Author
Rick Layton is a veteran diver and DAN Member.

Diving and nutrition: an interesting relationship

The collaboration between the DSL Nutrition Observatory project and Dr. Paolo De Cristofaro

By Franca Di Muzio

Paolo De Cristofaro, M. D.

An illustrious food expert and the European leader in scientific research on scuba diving safety: the collaboration between the DAN Europe DSL (Diving Safety Laboratory) Nutrition Observatory and Dr. Paolo De Cristofaro, manager of the Abruzzo Regional Nutrition Physiopathology Centre, fellow director of the SINU (Italian Human Nutrition Society), lecturer at the Postgraduate School of Food Science at "Gabriele d'Annunzio" University of Chieti and director of the continuing education school on food pathology, besides being the author of the book Basi metodologiche dell'approccio psiconutrizionale (Methodological bases of the psycho-nutritional approach).

Professor, please tell us how and when your encounter with the Research division of DAN Europe began.

It began through common interests and desires: last summer, the DAN Diving Safety Laboratory was starting a new and interesting project centred on nutrition; I had just been involved in the personalisation of a diet for setting a sports record... I'd say it was a fated encounter! Our intent is to examine the relationship between sport and food, in particular between eating and diving, so as to set up a database on the bio-psychosocial and behavioural aspects of the scuba and free divers' population, furthering the knowledge of their characteristics, needs, behaviour and risks. The final objective is to find a correlation between eating habits and risk factors in diving, so as to improve overall safety, preventing accidents and improving performance in sport.

Could you illustrate for us the phases of this collaboration?

The work with the DAN experts is a team effort, analogous to that carried out at the Physiopathology Centre I direct, an integrated multidisciplinary structure active in the field of eating disorders. The collaboration is therefore planned to have an initial medical evaluation phase (clinical/anthropometric and metabolic) of scuba scuba/free divers who wish to personally contribute to the Diving Safety Laboratory research, "donating" their dive profiles. After collecting the data it will be elaborated, enriched with the study of live subjects (we are thinking of groups of a maximum of 10, 15 people) to which we'll apply new systems of analysis, monitoring them with a multi-sensor which measures the glycaemic Holter variables, energy consumption and all the other physiological variables.

Is there an ideal diet for divers?

The question is simple, the answer complex... I would begin from the word "diet" which I consider obsolete, penalising and misleading: I would rather speak of a dialogue with one's body. A dialogue which not everyone cultivates as they should and which is of fundamental importance to sports practitioners. The main vehicles for this bodily awareness are keeping an eating journal and responding to the investigative questionnaire.

Another key concept is that of "nutritional personalization", a mission which I've always been pursuing and with great passion: there are no ideal nutritional recommendations which are universally valid; we each have our needs... all the more when you practice sports like scuba diving! First of all you have to look at many variables (habits, life styles, etc.), analysing them through the questionnaire and eating journal, to then elaborate an adequate food programme for the physiological changes that the practice of such disciplines bring.

Let's look at this tool in detail: how is it structured and why is it so important?

First of all I would like to point out a fact: it's a truly unique questionnaire in its kind, devised together with DSL researchers so as to cover many different aspects, adapting it to the peculiarities of scuba/free divers. It has four parts, respectively for general details and bodily measurements, lifestyle and sporting activity, behaviour and eating preferences, and state of health. A simple but detailed wide-ranging instrument, which stimulating self-observation and self-assessment by subjects, puts them in a position of contributing first hand in the development of the research programme.

Filled-in questionnaires are integrated into the eating diary for the 24 hours of the diving day, fundamental for individuating any correlations between eating certain foods and substances and the incidence of disorders or even injuries. It is fundamental that besides solid foods, the food diary also reports drinks taken: as highlighted by some DSL studies, there is in fact a connection between divers' hydration levels and the appearance of DCS symptoms – those of decompression sickness.

At the beginning of this conversation, you mentioned the personalisation of a sporting record: can you tell us any more about it or is a professional secret of yours?

I'll do it gladly. I have been following the sporting ventures of athlete Mirko Fazzini for years, last summer he set a record for open water sea crossing in a kayak. An impressive feat: Fazzini covered 163 kilometres in 24 hours, travelling at the speed of 7.4 km per hour, making 72,000 paddle strokes. In total, he used 5,700 calories and took 3,500, 2,200 of which in prerace phases, and these were composed by: 60% carbohydrates, 32% fat and 8% protein. The technical resting time was just two hours, less than the planned six, with 22 hours of actual paddling.

To set such a complex record, the nutritional programme I devised was fundamental. It was based on the intake every two-three hours of a high quantity of very digestible fats, sequential release carbohydrates mainly containing maltodextrin, in the form of a kind of pastry made with mother culture dough, wet and flavoured with a mix of olive oil and MCT oil which is characterised by medium-chain fatty acids which are used directly by muscles, providing athletes with a source of energy ready to use.

One last curiosity: has your collaboration with DAN Europe made you want to experiment the sensations and feelings of diving in first person?

I'm not a scuba diver, but I wouldn't rule out taking a Diving Test soon!

Practical Thoughts on Physical Fitness and a Return to Diving

By Neal W. Pollock

The term "fitness to dive" includes a wide range of elements: medical and psychological fitness, appropriate knowledge, adequate physical skills and adequate physical fitness. Breaks from diving can compromise readiness in many of these areas. This article will discuss physical fitness in light of breaks from diving.

Some divers can get in the water regularly. Others may face substantial breaks between dives, with activity restricted to annual vacations or seasonal conditions. A host of factors can result in extended periods of time spent on dry land.

Periods of nondiving may be associated with greater or lesser physical activity than might be normal during diving. Picture the triathlete, for example, who may not make time to dive for many months while training for a competition. Declining physical fitness is not likely to be an issue.

For each case like this, however, there are probably far more in which the hiatus is associated with reduced physical activity: Life gets busy, and things get put off. The forces that keep divers out of the water may also have them cutting back on regular exercise. In such cases, the return to diving can be problematic.

Use It Or Lose It

If they are not practiced, physical skills will deteriorate; this is the use-it-or-lose-it adage at work. Some divers take advantage of refresher programs or review training materials when they feel they might be rusty. Physical fitness requires the same consideration. Has your fitness level suffered? Will you be able to comfortably squeeze into your suit?

The experienced diver knows that good neutral buoyancy skills can make the overall energy demands of most dives pretty modest. But did the refresher training do enough to bring buoyancy control back to a high standard? What about the most physically challenging elements? Standing up and walking in full gear, surface swimming, water exits and, of course, any unexpected or emergency events. A little bit of "what if" time should remind you that a series of small compromises could turn a nonevent into a serious situation.

The solution? Well, you could always hang up your fins for good. Everyone should probably do that eventually. We have a lot of control, though, on when that "eventually" needs to be. A better strategy would be to make sure we are ready to play our games when we want to play. The things we need to maintain our options are honest self-appraisal, habitual physical activity and consideration of activity-specific fitness needs. Meeting these obligations not only reduces the challenge of return to diving after a break, it improves readiness for all diving and other physical activities.

Honest self-appraisal is a challenge to us as a species. Common lapses range from unawareness to self-delusion. While issue avoidance and the proverbial

About the Author

Dr. Neal Pollock is an a research physiologist at the Center for Hyperbaric Medicine and Environmental Physiology, Duke University Medical Center, in Durham, N.C.

rose-colored glasses can be compelling, a pattern of honest, objective appraisal is healthier. If we are honest with ourselves, most of us are reasonably capable of judging our readiness to perform in an arena we understand. Such an admission is the first step to recovery.

Act On It

Once you've identified the problem, the next step is to act. Physical fitness over the lifetime is important to protect our general health and our capabilities. By staying in reasonable shape, we eliminate a huge barrier to participation in or return to diving, or almost any other activity. The U.S. Surgeon General has long recommended regular physical activity on most days of the week (Physical Activity and Health, 1996). We did not need the Surgeon General to tell us that, though. We just need to do what we know is reasonable.

The choice of physical activities for general health is wide open. Good choices will include components for strength, aerobic and dynamic/flexibility. Running, swimming, cycling, walking, volleyball, racquetball, soccer and dancing are just a few examples of activities that can form the core.

The most important thing is to choose those that fit your preferences, schedule and abilities. Alternating activities can make things more interesting and reduce the likelihood of overuse injuries. Working with a partner will make it easier to keep going. Joining or establishing a peer group and/or combining physical activity with other interests can also be effective. For example, hiking and kayaking might be combined with bird watching and/or photography.

Swimming is a great choice of exercise for many reasons. It involves many muscle groups and improves aerobic capacity.

It produces relatively low joint forces and thus is less likely to cause injury. It will also improve comfort in and around the water. While many debate the threshold swimming ability appropriate for safe diving, most will acknowledge that enhanced skill would be a good thing generally and a definite plus in emergent events.

There are a lot of ways to get into swimming. For many, simple lap sessions might be appropriate both for fitness and as an escape from the stressors of the day. Traditional lessons and stroke improvement classes may help those needing assistance. The more social lap swimmer may prefer a master's club. Others near active aquatic centers could find or encourage intramural water polo, underwater hockey, breath-hold training or other programs.

You need not be an expert in an activity to get a physical benefit. A poor swimmer, for example, working for every stroke, can get a better workout than a skilled swimmer lugging along. Additionally, the satisfaction of developing new skills may be motivational in its own right.

Think About It

The conversation to this point has focused on regular physical activity. This is important in the return-to-diving question since maintaining fitness reduces the problems of a break in activity. Exercise should be a part of our basic routines.

Good intentions aside, though, we know that this is often not the case. A recent study found that only 20 percent of the adult population reported strength training more than two times per week (1998-2004), less so with increasing age and despite initiatives to increase participation (Kruger et al., 2006). We each need to draw on our personal initiative to reverse this trend.

So, what about the dive trip coming up right away? Are you ready? It's honest self-appraisal time. Take stock of your situation. Gather your gear. If you hesitate at all in setting it up or mentally walking through the steps of dive planning, refresher training should be top priority. Using your own gear for the retraining will allow you to test it and yourself under supervised conditions.

Check Your Gear

Ensure that all the appropriate servicing is complete. Address any fit issues to reduce the chance of unpleasant experience. If a suit is tight when you put it on in the living room or poolside, it will probably feel worse as you enter the water after too long on dry land.

Check Yourself

Refresher dive training will frequently focus solely on basic diving techniques. It is in your best interest to test your general abilities as well.

Are you physically, medically and psychologically fit? Stressful times and excessive fatigue might make a dive too much to handle. In such cases, it would be best to delay diving until you have had some recovery time. Enjoy a bit of vacation time before you get into the water. If physical fitness is the only question, then the pool may be the best place to answer it.

Can you complete a continuous 200-meter (656-foot) snorkel swim in less than seven minutes without difficulty and without needing to rest after finishing?

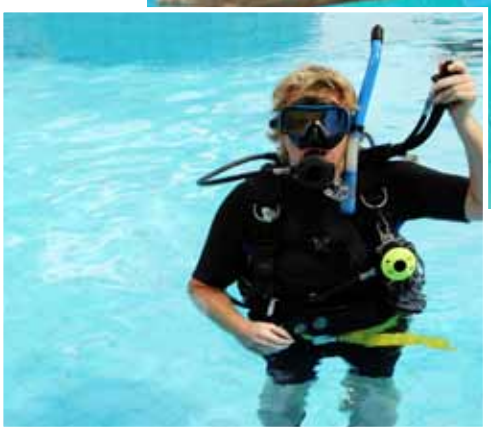
Can you do head- and feet-first surface dives to the bottom at 12-15 feet (4-5 meters)?

References
Physical Activity and Health: A Report of the Surgeon General, 1996. http://www.cdc.gov/nccdphp/sgr/ataglan.htm.
Kruger, J., Carlson, S., Kohl, H., "Trends in strength training - United States, 1998-2004,"
Morbidity and Mortality Weekly Report 2006; 296(12): 1459-1460.

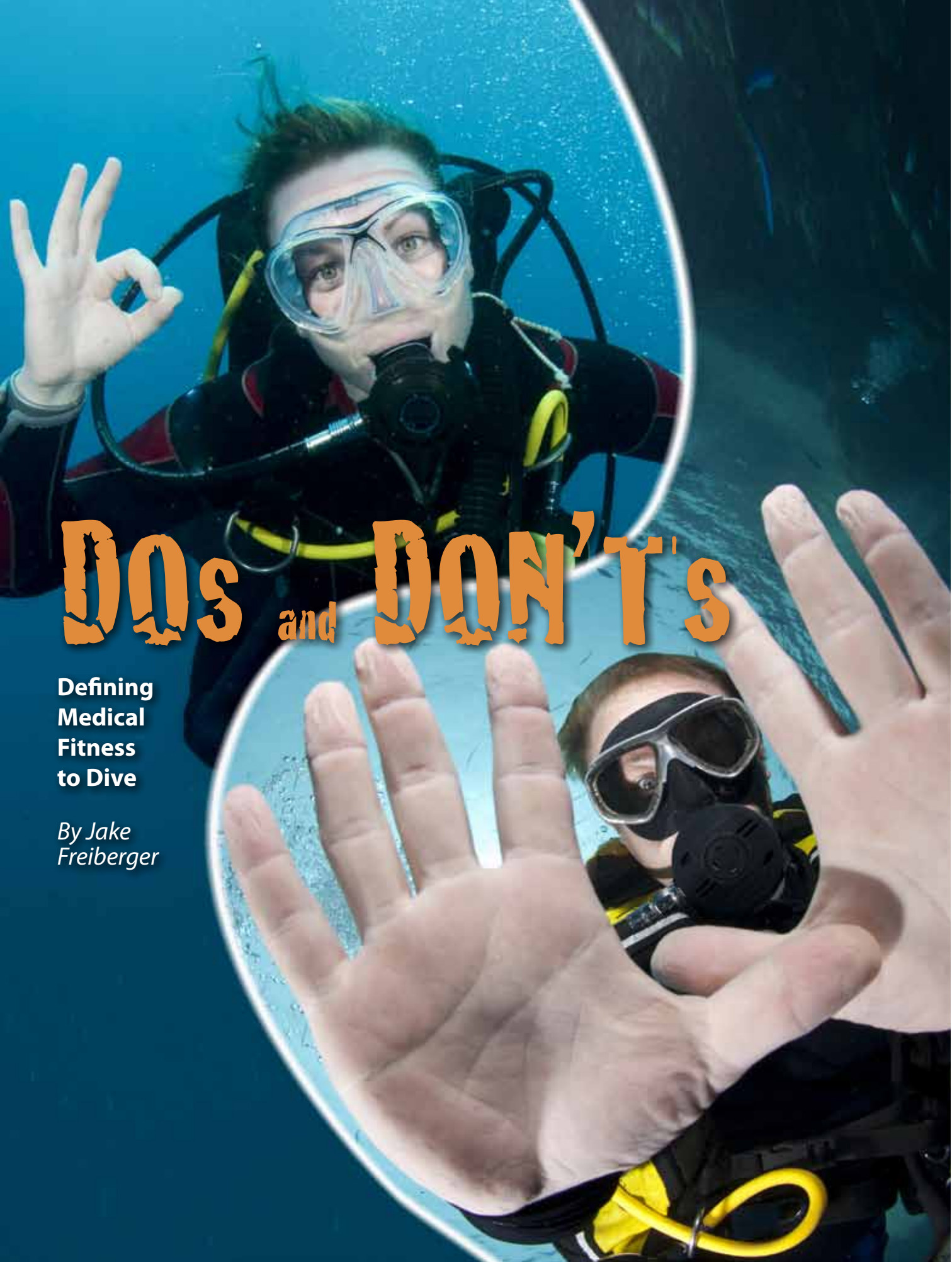
Can you pick up, don and clear your mask and snorkel from the same depth on one breath?
These quick tests are not definitive, but if you can complete all of them, then your physical fitness and snorkeling skills are probably reasonable. Immediate practice of each skill will not improve physical fitness, but practice will improve physical competence, which is always important but even more so if your fitness is not optimal.

Dunk It

The pool is also a great place to first test your neutral buoyancy in full gear. Yes, you will have to add weight to be neutrally buoyant in salt water, but the pool test will get you close. Remember that the amount of weight required often changes as experience grows. Most divers require less weight as they relax and gain comfort and confidence underwater. Conversely, putting on weight in personal soft issue may demand additional external weight. In either case, it is better to get close to appropriate weights in the pool without the additional pressures of holding up a group or making major weight belt adjustments under less ideal circumstances. If your performance is far off the mark during your pool session, you may want to postpone your return to diving and work a little more on your skills. After all, you have to consider the health, safety and enjoyment of yourself, your buddy and anyone else who would be affected by your performance. At the start of the trip, if you are close but not sure, schedule a one-on-one or small group session with a diving instructor under entry-level environmental conditions before your main dives.



While it may not seem like an auspicious beginning, starting with a relaxed, problem-free dive may be the best way to make it a relaxed and problem-free trip. When you get home, you will be in the right frame of mind to think about additional steps to take to ensure your readiness for the next trip.



Dos and Don'ts

Defining Medical Fitness to Dive

By Jake Freiberger

Determining medical fitness to dive is not an exact science. Like most topics in medicine, opinions about an individual's fitness to dive should be conditional on their personal medical history as well as on the type of diving planned.
For that reason there are few unambiguous criteria, and exhaustive lists of general prohibitions are usually either inadequate or overly restrictive. From a regulatory point of view, North American recreational divers are free to do whatever they desire once they are certified.
However, the actual health status of all divers can change over time, and often divers are not aware of important individual risk factors, especially those that have developed in the years (or decades) following their initial certification. For that reason any fitness to dive evaluation should have an educational as well as an evaluative function. The encounter should serve to inform and assist prospective candidates to become aware of potential health-related dive safety issues.

This two-part article will outline a strategy to determine fitness to dive based on an individual diver's mental and physical strengths and weaknesses in the context of the types of planned dives.
It will also consider the individual candidate as a potential member of a dive team. Part 1 discusses the many existing sources of information about fitness to dive and the problems inherent in their use. Part 2 (in a future issue) creates a strategy for the evaluation of individual divers. It also discusses some of the more problematic topics, including selected specific diseases and medical conditions and their impact on diving fitness.

Existing Regulations And Recommendations

Because each diver is unique, precise lists of exclusionary medical conditions are insufficient to determine general fitness to dive. However, many such lists exist, and it is useful to review the policies of some of these diving organizations. Furthermore, even for commercial and scientific divers, fitness is not regulated by statute but is self-regulated by the different trade organizations. Each organization sets its own medical fitness standards, and they are not all the same. This sometimes causes confusion.

For example, the U.S. Coast Guard and the Occupational Safety and Health Administration have regulatory authority over commercial diving vessels and practices (OSHA 29 CFR 1910 subpart "T", U.S. Coast Guard - 46 CFR 197.200), but OSHA does not regulate who may dive, only where and how you dive and with what support.

On most commercial dives, voice communication with the surface is required by law. If it is lost, the dive is terminated. OSHA mandates that a medical exam be performed, but how it is performed or what the results are is not stipulated.
In commercial diving, the specific medical fitness de-

tails are left up to the trade organizations. Each organization has its own set of standards. For example, the Association of Diving Contractors (ADC) requires a medical exam every two years for divers younger than 35 (yearly thereafter) plus after each dive injury requiring hospitalization.

The ADC exam must include an electrocardiogram (EKG), pulmonary function tests (PFTs), audiogram, and bone and joint X-rays. Selected disqualifying conditions for the ADC include seizures (not childhood febrile - i.e., induced by high fever), cavitary pulmonary disease, obstructive or restrictive pulmonary disease, inability to equalize sinuses or ears, significant hemoglobinopathies (blood disorders such as sickle cell anemia), diabetes, psychiatric disease, alcohol or drug abuse, impaired hearing (35 db < 3000hz) and pregnancy.

The American Academy of Underwater Scientists prohibits its members diving with angina, pregnancy, epilepsy, pulmonary cysts and tympanic membranes with one layer. The National Oceanic and Atmospheric Administration (NOAA) Diving Manual has yet another extensive list that rules out divers with skin, psychiatric, neurological, opthalmological, ENT, oral, pulmonary, cardiovascular, hemotological, gastroenterological, endocrine, musculoskeletal and obstetric problems.

It should be evident that the recommendations presented above are always subject to individual interpretation and may not be useful when evaluating a unique case. To its credit, NOAA recognizes that problem and suggests that if there are questions one can always consult with DAN. DAN, however, can advise only on the known medical facts of diving-related conditions, and the doctors and medics at DAN cannot and do not make individual medical decisions regarding fitness.

Sport Diving

Recreational diving is less clearly regulated than commercial or scientific diving. Worldwide, there are many other agencies certifying sport divers and allowing them to request air fills. Some training agencies like the Professional Association of Diving Instructors (PADI), the National Association of Underwater Instructors (NAUI) and Scuba Schools International (SSI) have suggested medical questionnaires that all students must complete prior to participation in training. If any questions are answered “yes,” then students are required to receive signed, medical clearance to participate in scuba training.

The Recreational Scuba Training Council (RSTC) was incorporated in the United States in 1986 to establish minimum training standards for recreational scuba diving to promote public safety. Although the RSTC is primarily involved in training, it has a “Medical Statement” in which divers are informed of some potential risks involved in scuba diving. The statement includes a medical questionnaire, the purpose of which is to determine whether a diver should be examined by a doctor before participating in training.

A positive response to a question does not necessarily disqualify divers from diving. However, it means that there is a pre-existing condition that may affect safety while diving, and the advice of a physician prior to engaging in dive activities is required.

Rules are different outside the United States. In the United Kingdom, divers may not be trained without a medical declaration form or an examination. The UK Sport Diving Medical Committee advises the British Sub-Aqua Club, Sub-Aqua Association and Scottish Sub-Aqua Club on diving medicine issues, including assessment of fitness to dive. This is conducted through a national network of medical referees with accredited diving medicine expertise, using a uniform set of medical standards that are continually reviewed as new research is published. These standards are reasonable, and because most diving in the United Kingdom is done through the aforementioned clubs, the rules are enforceable.

Despite the apparent confusion, it is possible to appropriately determine whether an individual is medically fit to dive.

About the Author

Dr. Jake Freiberger is board certified in anesthesiology, critical care medicine and undersea and hyperbaric medicine. He holds a master’s degree in public health in environmental management and policy. He works as an attending physician at the Duke Center for Hyperbaric Medicine and Environmental Physiology.

Trachinus Araneus Warning!

Too close an encounter - the tale of a Spanish DAN member

By DAN Europe Staff

Barcelona, September 26th 2011

Hi, this is just to communicate and report an accident that I suffered last Saturday (Sept 17th). I was snorkelling in the Castelldefels beach (near Barcelona), 20 m away from the shore and in 2 m deep water. I saw a group of three spotted weevers (Trachinus Araneus) in the sandy bottom, and the group split. I then dove down about 1.5 m to see one of them a little bit closer and then the fish suddenly jumped out very quickly off the sand and hit my face (cheek) and chest (two times) with its poisonous fins, attacking me directly. I was not wearing any wetsuit or protection, just mask, snorkel and fins. I was extremely surprised by the aggressive behaviour of the fish... it was a very, very painful experience.

I got out of the water, bleeding, and rushed to a local emergency service in the hospital. I was treated there on Saturday, and on Sunday in a Barcelona hospital as well, as inflammation was increasing. I got urgency treatment and received everything (morphine, voltaren, etc), antibiotic (Amoxycillyn) and Enantyum (anti-inflammatory).

Now the pain is almost gone, and I'm recovering well from a very large inflammation in face and chest. I'm visiting a National Health Service toxicologist doctor in Barcelona again tomorrow, for a final check. So in general, I have had no personal expenses.

What I would like first of all is for DAN to record the accident, and then if possible to have a campaign about how dangerous is this fish in the Mediterranean, and how careful should be everybody when snorkelling or diving near one of those Trachinus Araneus. I think the risk and the consequences (the amount of pain is unimaginable, and death is possible, I understand) well deserve the effort.

Another improvement area should be for hospitals to know well about the protocol and the heat application, this is important to ease the pain and not so easy to obtain in an emergency service.

Thanks,

Daniel Fuhrmann Verdaguer

Barcelona (Spain)

The weever fish: know it to avoid it

(taken from the book Animali marini pericolosi (Dangerous Marine Animals) by Prof. Ferruccio Chiesa, IRECO, 2002, pages 104-106)

Weever fish are Osteichthyes of to the Trachinidae family. Of average size, between 20 and 50 cm long, they are widespread in the temperate and cold waters of the Mediterranean, North Atlantic and North Sea. They are the most venomous fish in this marine area. One the most common and populous species is the **spotted weever** (Trachinus araneus), only found in the Mediterranean.

Weevers typically inhabit flat and sandy seabeds, lying half-buried in the sand or mud, with just their heads visible, constantly lurking for prey. They are often very aggressive, earning them the Old Saxon name “viper of the sea”. Great to eat, these fish have to be handled very prudently, each having anything between 5 and 7 venomous dorsal spines as well as an opercular spine, just as venomous, next to the gill openings, on both sides. Their erectile dorsal fins can also act as a great defence, against being trodden on and against predators.

Weever fish use their venomous apparatus to attack prey or fish which invade its territory. Divers have reported being attacked and stung by weevers just by having gone too close to their hiding places.

The action of the weever’s poison is haemolytic and neurotoxic. The predominating initial subjective clinical symptom is pain: instant, burning pain which spreads rapidly from the area stung, usually a lower limb, right up to the root of the limb.

The pain peaks after 20-30 minutes and can in some cases last for more than 24 hours, even a few days even though lessened. The initial intensity of the pain and its immediateness can cause delirium and a syncopal attack, bringing the consequent risk of drowning for swimmers and divers.

Local anaesthesia and analgesics are generally not very effective - it is more useful to immediately place the stung limb in very hot water, as hot as is bearable. There is no specific antidote in commerce: that’s why the only option is symptomatic and adequate treatment, case by case adapted to the needs of the victim. Antibiotic coverage and anti-tetanus jabs are obligatory.

From giving First Aid to teaching it: First Aid for Hazardous Marine Life Injuries

The DAN course in First Aid for Hazardous Marine Life Injuries is an initial training level to instruct divers (and qualified non-divers) on how to identify dangerous forms of marine life, how to recognise the injuries caused by them and how to provide first aid for them?

Course Objective
The Objective of this course is to train anyone interested in first aid techniques how to handle an injury suspected to be caused by a dangerous marine animal. The course also deals with how to recognise potentially dangerous marine life-forms and how to prevent injury by them. This programme provides an excellent possibility of continuing with one's underwater education, both for experts and instructors.

Learning Objectives
At the end of this programme, participants will be able to:

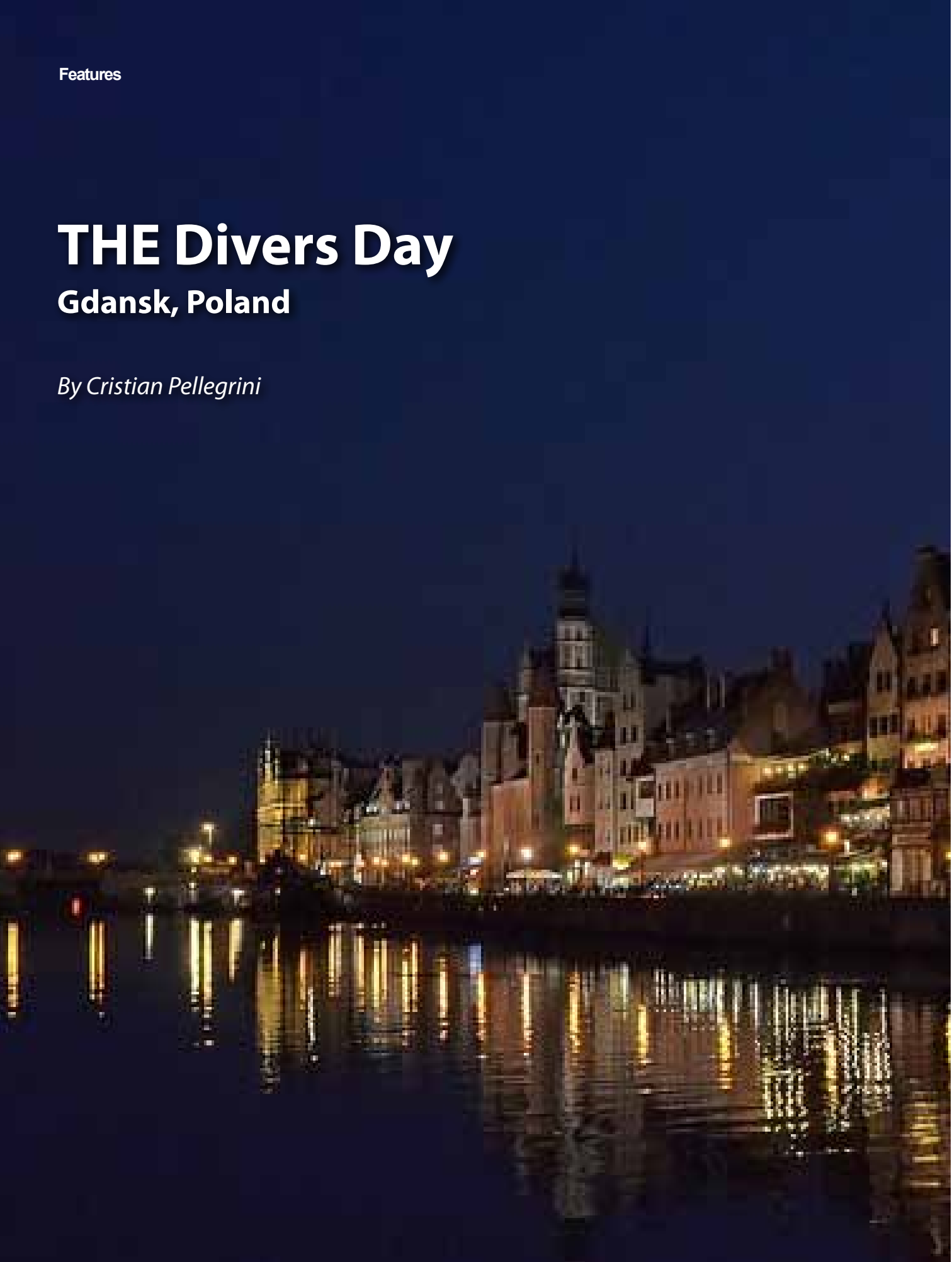
- identify the four types of lesions caused by dangerous marine organisms
- name at least five species of venomous animals
- name at least five signs of poisoning from sting/bite/urtication
- describe the appropriate first aid techniques for lesions from venomous marine animals
- name at least three marine animals that may bite a scuba diver
- name two common signs of bites
- describe the appropriate first aid techniques for bites from marine animals
- name at least three kinds of marine animals that can cause irritation
- name at least four signs of irritation
- describe the appropriate first aid techniques for irritations from marine animals
- identify two forms of food poisoning from "marine" food
- name at least three kinds of animals that can cause food poisoning
- name three common signs of food poisoning
- explain why a doctor's opinion is necessary in cases of suspected food poisoning
- describe the appropriate first aid techniques in a case of suspected food poisoning
- carry out an environmental safety assessment
- name the steps taken in assessing environmental safety
- carry out ABC First Aid (airways, breathing and circulation) for an injured diver
- show the correct behaviour in treating sick or injured divers
- open airways and keep them open, keep an injured diver breathing (artificial respiration)
- describe the importance of the use of supplemental oxygen as a first aid measure for injured scuba divers
- show the techniques for controlling a haemorrhage, including direct pressure (pressure immobilization, lifting the injured part) and the pressure points
- localize and show a pressure point to control an external haemorrhage
- apply dressings and bandages for lesions caused by hazardous marine animals
- show how to carry out a secondary evaluation and how to treat for shock
- demonstrate pressure immobilisation techniques
- name the components of the Emergency Assistance Plan
- describe at least five techniques or guidelines to reduce the risk of lesion by marine animal.

The nature and aim of the course are limited to the training of scuba divers, as well as those, such as boat captains, friends or relatives that may have an interest in recognising potentially harmful marine animals, in the first aid treatment and in the prevention of injury by these animals. The course does not include CPR (cardiopulmonary resuscitation) or water rescuing. The scope of application is for after the victim has been taken in and placed on the beach or onboard.

THE Divers Day

Gdansk, Poland

By Cristian Pellegrini



The audience of the conference room - Medical University of Gdańsk

The speakers' stage - Medical University of Gdańsk

Dr. Nicholas Bird, CEO of DAN America, introduces Prof. Elliott

Enthusiasm, participation, information: three features that well describe the 7th DAN Divers Day, held last August 28th in Gdańsk, Northern Poland.

The Divers Day has come to crown a week full of scientific meetings and social gatherings. In fact, the same venue, the Medical University of Gdańsk, also hosted the EUBS (European Underwater and Baromedical Society) annual meeting, the DAN Europe Board of Directors Meeting and the International DAN Meeting.

Compared to other events of the week, the Divers Day was more addressed to the general public. This time the audience was not only composed of doctors and professionals, but also of all those who animate the diving community: teachers, guides, managers of dive operations and clubs, journalists and fans. Because the goal of every DAN Day is to speak directly to the divers, listening to their doubts and questions, and trying to provide real answers.

The program

Prof. David Elliott, diving medicine expert and consultant to the Royal Navy, opened the lectures.
Prof. Elliott first gave a definition of diving, focusing his attention on **commercial and recreational diving**. He talked about inherent risks and safety rules, trying to go beyond stereotypes and identifying common mistakes, also through the use of pictures and funny cartoons. 100% British humor and aplomb...

Prof. Costantino Balestra continued the program, showing the **most recent studies conducted by DAN Research**. Among them, the relationship between muscle contractions and respiratory rate, and the so-called "comets", a

Francois Burman, executive director of DAN Southern Africa

The speech of Dr. Van Laak

Dan Orr, President of DAN America

name given to traces indicating the presence of water in the breath-hold divers' lungs (and therefore the possibility of pulmonary edema). Prof. Balestra lastly remembered the figure of Patrick Musimu, apnea recordman, who recently passed away. Patrick was a true athlete, who contributed significantly to research conducted by the DAN Europe team in the Brussels laboratories.

Dr. Ulrich Van Laak, our director for Germany, Austria and Hungary, continued with the subject **"In-Water Recompression for diving emergencies in remote locations,"** a controversial subject but one of great relevance and interest.

Dan Orr, President of DAN America, concluded the morning program with the subject **"Diver Fatalities: How Good Divers Get Into Bad Trouble".** A long series of data related to accidents, analysis of possible causes and consequences, practical advices on how to stay out of trouble underwater. He delivered to the public a "personal safety envelope" in which one can place experience, training, qualifications, technology, positive attitude.

After the lunch break, Petar Denoble, another guest from the DAN America, spoke about **accidents and technical diving.** Dr. Jacek Kot, one of the local organisers (DAN Polska), explained to the audience some aspects of the **role of oxygen in decompression.**

Before the coffee break, Guy Thomas has shown in detail **what DAN does and why it is so important to join the Divers Alert Network**. This was an occasion to remember another friend of DAN who recently died: Witold Smilowski, our training coordinator for Poland. Michal Kosut, DAN Instructor Trainer and close friend of Witold, was there on behalf of the Smilowski family and received a glass sculpture dedicated to "Witek".

Dr. Adel Taher with a friend of the Polish site divers24.pl

Betty Orr with Guy Thomas

Francois Burman, from DAN Southern Africa, spoke about a series of DAN programmes aimed at **improving safety of hyperbaric chambers**. Among these, **RCAPP** (addressed to hyperbaric centers) and **ChAtts & ChOps** (addressed to staff). So far about 140 hyperbaric chambers in the world have been visited, and 101 among them have been assessed and have received specific advices on safety.

Prof. Alessandro Marroni closed the DAN Divers Day with a comprehensive report: **scientific research and participated science**, collaboration with other research institutions, practical tips on diving safety.
Because, as mentioned, this is the spirit of the Divers Day: to speak clearly to divers and provide them with "take-home messages".
Information that are reliable, comprehensive and valuable.

Prof. Marroni together with the local organizers, Dr. Sicko and Dr. Kot

In Memoriam of Witold Smilowski

One of the DAN slogans translated in Polish: "Dive safe without borders"

The DAN Shop " on the road"

See you in Belgrade, on
September 16, 2012,
for the
8th DAN Divers Day!













EUBS holds its 37th Scientific Meeting

By DAN Europe Staff

During the week preceding the 7th DAN Day, from 24th to 27th August 2011, the 37th Annual Scientific Meeting of the European Underwater and Baromedical Society (EUBS) took place in Gdańsk, Poland: an event attended by 220 people coming from 40 countries. Among the many issues debated concerning diving and hyperbaric medicine, are worth mentioning the studies about the treatment of decompression sickness and the monitoring of performances during scuba diving; other lectures were devoted to topics such as the relationship between recreational diving and diabetes, the biophysical models of decompression and the physiology of decompression (PHYPODE project, see following article).

The event was held under the honorary patronage of Lech Wałęsa, former President of the Republic of Poland, and Nobel Peace Prize Laureate 1983.

Lech Wałęsa receives the visit of a DAN Europe and EUBS delegation.

A Quest for Decompression

DAN Europe and the PHYPODE project

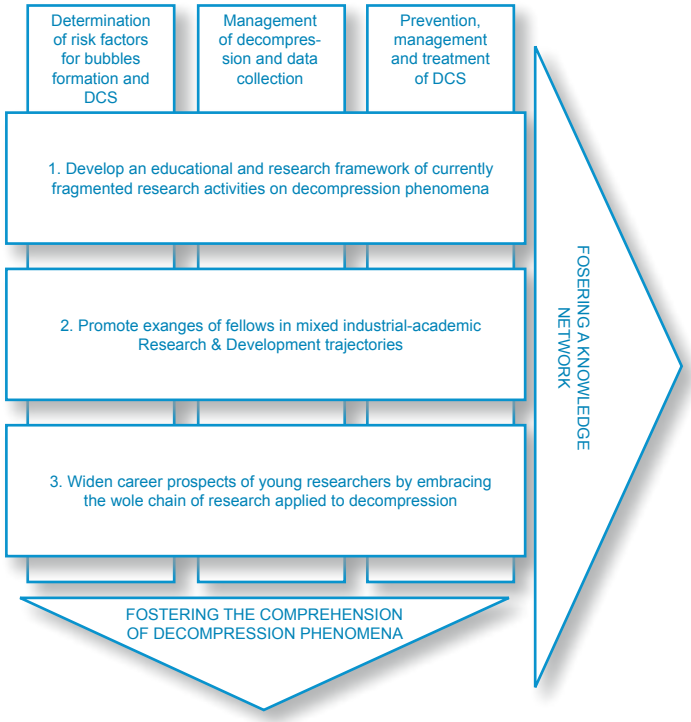
By DAN Europe Staff

Advancing knowledge on the physiopathology of decompression, highlighting the risk factors for the formation of intravascular bubbles: it's the objective of PHYPODE, a European Union-funded project under the Marie Curie Initial Training Networks initiative.
Uniting academic and industrial partners, international nonprofit associations and hyperbaric medical centres on an international scale, PHYPODE aims to provide a collaborative training and research programme for twelve Early Stage and two Post-doctoral researchers, improving their skills and enhancing their career prospects. Started in January 2011, the project will finish at the end of 2014.

An innovative, interdisciplinary approach

Decompression sickness (DCS) is caused by circulating inert gas bubble formation in blood vessels and tissues, resulting from supersaturation during inadequate decompression. It is an acknowledged risk of situations involving variations in ambient pressure, such as space flight and extravehicular activity, exposure to altitude, hyperbaric tunnelling intervention, as well as recreational and commercial underwater diving.

Because of new industrial challenges (human space flight programs, deeper planed tunnelling interventions and offshore oil excavation) and emerging recreational demands, the range of both environmental conditions and population characteristics involved in such activities regularly widen. Thus, in order to reduce risk for DCS, new interdisciplinary approaches are needed, fostering knowledge of decompression phenomena by:



- developing an educational and research framework for the cross-fertilization of currently fragmented research activities concerning the physiopathology of decompression, with specific attention to the formation of intravascular bubbles
- providing young researchers with opportunities to share research techniques and resources, participate to courses, seminars, workshops and events in order to benefit from the best international scientists knowledge in this field, get the benefits of interactions and exchanges among industry, medical centres and academia
- widening the career prospectives of young researchers by enabling them to embrace the entire chain of research activities: from fundamental research for pathophysiological understanding of decompression, to applied research in the industry for management of decompression

The present understanding of the DCS mechanisms implies that there are at least 3 different kinds of

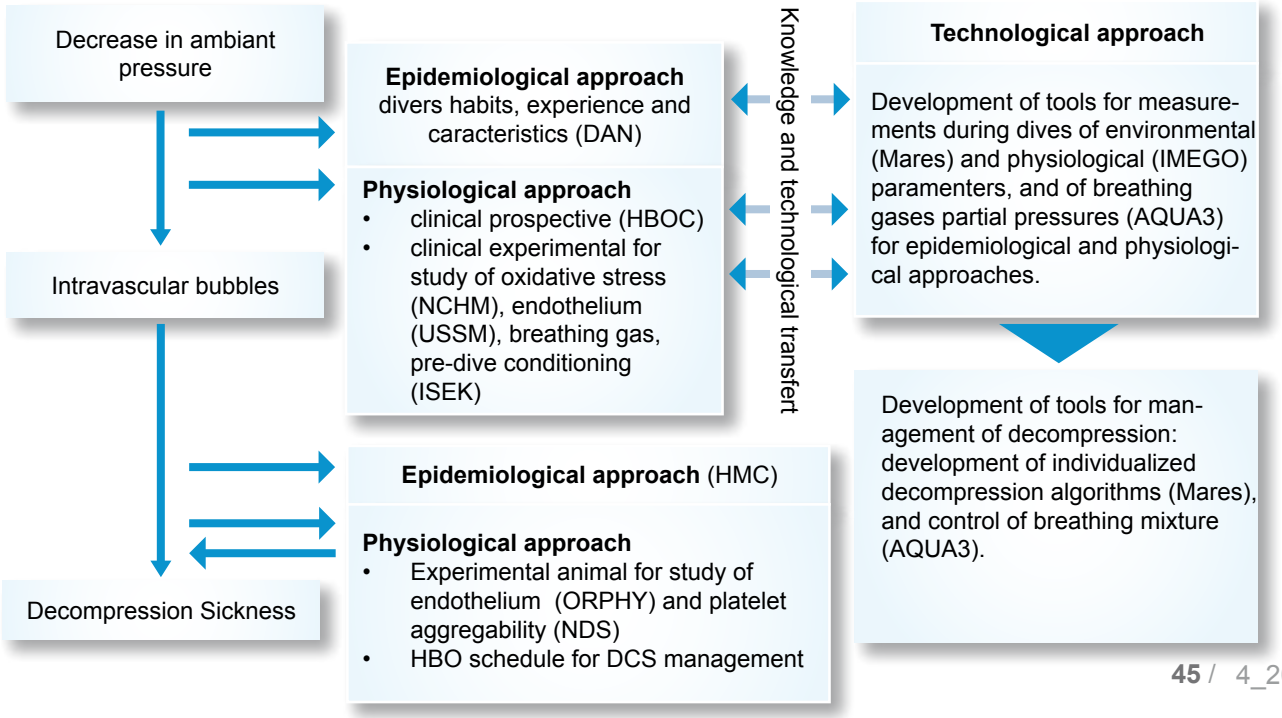
symptoms involved in the onset of decompression sickness. It is believed that these symptoms correspond to three different bubble scenarios:

- central or vestibular symptoms, related to the presence of a vascular bubble in the brain
- spinal symptoms, related to the venous damping of the vessel draining the spinal cord
- articular symptoms, related to the presence of a large bubble in the tendons and the ligament of the articulation.

The PHYPODE project concentrates on research of the first two cases:

- mechanisms involved in intravascular bubbles formation during decompression,
- mechanisms linking intravascular bubbles to decompression sickness.

Mechanisms leading from decrease in ambient pressure to formation of intravascular bubbles and, then, to DCS are investigated using both epidemiological and physiological approaches, thanks to development of technological devices. On the basis of data obtained from these investigations, industrial partners will develop devices for the management of decompression.



PHYPODE objectives, in detail

(taken from: "Oxygen in Decompression" by Dr Jacek Kot, MD, PhD, Deputy Medical Director DAN Europe Polska and Medical Consultant - 7th DAN Divers Day, Gdańsk, Poland, August 28th 2011)

- Epidemiological approach for determination of risk factors for intravascular bubble formation
- Clinical experimental approaches for determination of risk factors for intravascular bubble formation
- Impact of Patent Foramen Ovale
- Vascular endothelium as potential source/target for intravascular bubble formation
- Pre-dive conditioning for management of decompression
- Monitoring and control of dive parameters for management of decompression
- Epidemiological approach for determination of risk factors for DCS
- Role of vascular endothelium in the development of DCS
- Oxidative stress on the prevention (O2 breathing) and treatment (HBO) of DCS
- Treatment of DCS

Joining PHYPODE

In order to achieve the objectives of this ambitious training and research programme, 13 members among academic and industrial partners, not-for-profit associations and hyperbaric medical centres have formed an international consortium with complementary expertise in:

- Epidemiological research
- Prospective clinical research
- Experimental physiological approach, using fundamental and clinical research methodologies
- Technological development for the management of decompression

Partner short name	Partner full name	Country
UBO	**Universite de Bretagne Occidentale** EA 4324 - ORPHY (project director: F Guerrero)	FRANCE
GUMed	**Gdanski Uniwersytet Medyczny** National Center for Hyperbaric Medicine (NCHM)	POLAND
ISEK	**Haute Ecole Paul Henri Spaak - Institut Supérieur de l'Etat de Kinésithérapie** Environmental & Occupational Physiology Department	BELGIUM
DAN	**Divers Alert Network Europe**	ITALY
HBOC	**Military Hospital Queen Astrid** Centre for Hyperbaric Oxygen Therapy	BELGIUM
AQUA3	**G.T. di Trampus Graziella - AQUA3**	ITALY
MARES	Mares S.p.A.	ITALY
USSM	**University of Split - School of Medicine** Department of Physiology	CROATIA
IMEGO	**IMEGO AB**	SWEDEN
HMC	**Hyperbaric Medical Center**	EGYPT
SU	**Stellenbosch University, Faculty of Health Sciences** Department Interdisciplinary Health Sciences (Field: Hyperbaric Medicine and Research)	SOUTH AFRICA
COMEX	**COMEX S.A**	FRANCE
NDS	French Navy French Navy Diving School	FRANCE

Some PHYPODE people

Prof. Costantino Balestra, PhD
Vice President DAN Europe Research & Education
Area Director DAN Europe Benelux and France
Environmental & Occupational Physiology Laboratory - Haute Ecole Paul Henri Spaak

Prof. Costantino Balestra

Professor, how was PHYPODE born?

The PHYPODE project was born from a discussion of a few years ago with Dr François Guerrero of the University of Brest, whom I'd met as a member of the examining commission at his thesis presentation. Then when the idea to launch a European research consortium on decompression mechanisms was born, I told François that I didn't have any more time to deal with it personally, but that I would have put him in touch with the people most interested in this field. We thus proposed a project to the «Marie Curie», knowing well that the acceptance rate for proposals was very low, only 16%. A proportion in which we also ended up!

What is the role of DAN Europe in the project?

The role of DAN Europe has been fundamental since the beginning, in providing contacts and the necessary know-how to undertake a truly European project. Until today, PHYPODE is the only programme which will allow about ten researchers to work for three years full-time on the physiopathology of decompression. To crown these years of research the "DAN Deco Book" will be published.

Which aspects of decompression will be examined?

The work of researchers involved in PHYPODE will revolve around different decompression issues: preconditioning which also includes the concept of "wellness", the study of peripheral and central endothelial parameters; the automatic measurement of circulating bubbles in echocardiography, the objective measurement of narcosis; also the detailed analysis of available data (data-mining) and the formulation of proposals for the adoption of individual decompression algorithms for divers. In other words: there's a lot to be done!

Amir E. Fakhry
Early Stage Researcher, Marie Curie Fellow at DAN Europe Foundation

Amir E. Fakhry

Amir E. Fakhry is a young Egyptian Medical Doctor wishing to develop his skills in the field of decompression phenomena. After gaining his bachelor degree in medicine and surgery at Ain Shams University of Cairo, he started his training in hyperbaric and diving medicine at the Hyperbaric Medical Center of Sharm El Sheikh, under the supervision of Dr Adel Taher, Regional Director of DAN Egypt.

Having all the prerequisites listed by the Marie Curie Actions (including a degree obtained not earlier than 2007), Amir applied successfully as an Early Stage Researcher (ESR) for the PHYPODE Project, and was offered a 36-month contract at DAN Europe Foundation, Continental Europe Office in Roseto degli Abruzzi (Italy). A lucky chance, since DAN Europe is one of the world leaders in medical and scientific research on diving safety, conducting several research projects on medicine and physiology in diving. The results obtained by its researchers have become a point of reference for the international medical scuba diving community. Volunteers from every country in Europe have been involved in collecting data according to scientifically and epidemiologically appropriate methodologies. Thus, the DAN Diving Research Laboratory database is collecting and analysing hundreds of thousands of real dives, which allow investigation on a number of different aspects of diving safety.

Amir's tasks in the frame of PHYPODE will include training divers for field data collection and supervising a multicentric epidemiological study on determination of risk factors for intravascular bubble formation.

Data sampling will include:

- questionnaires forms previously developed for recording diver characteristics and dive details;
- recording of dive parameters using diving computer specially adapted as "blackbox" to not interact with diver during unrestricted recreational diving;
- doppler examination of venous gas bubbles after each dive.

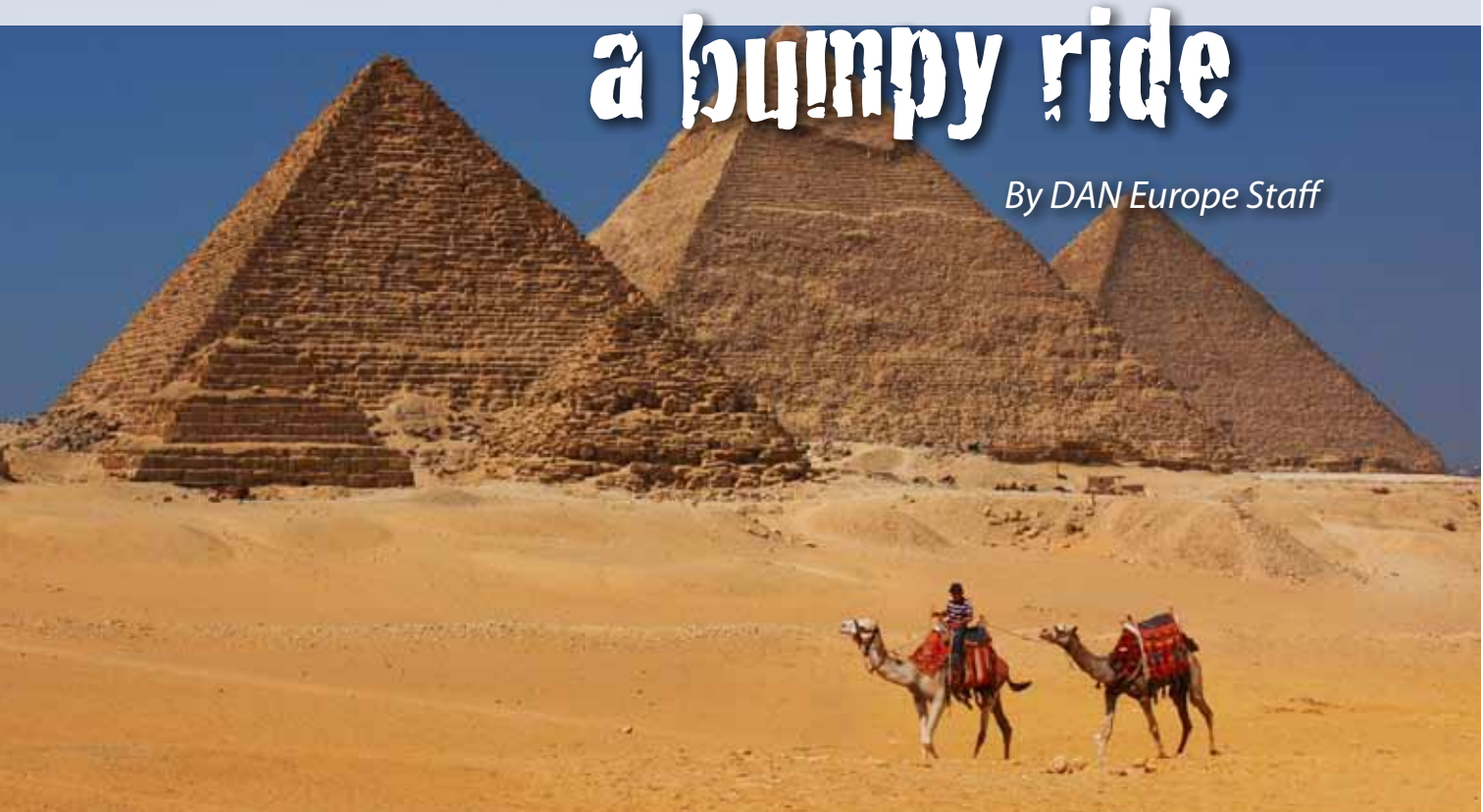
Data will be entered into a software database prepared for the project by DAN Europe Research.

Successful Stories

Learn how DAN made a difference helping divers in need

From Austria to Egypt: a bumpy ride

By DAN Europe Staff



From riding a motorcycle to racing to the hospital: this was the end of the Egyptian stay of a 40-year-old Austrian enjoying a sabbatical to pursue his passion for diving.On 24 June 2011 he was on the road with his motorcycle. Suddenly and unexpectedly a police truck, which was proceeding along the left lane, turned right and invaded his lane. Too late for evasive maneuvers.There was a nasty crash, the motorcycle slipped under the truck and the man was run over, fracturing his pelvis and sacrum as well as suffering other contusions and injuries.
Fortunately for him, DAN Europe follows its members everywhere: the man had in fact recently subscribed to the new **Pro Gold Family** plan introduced in 2010. This provides insurance cover for the nominee and their family of up to 4 people even for medical emergencies not related to diving as well as assistance in travels abroad.

The efficiency and responsiveness of DAN services have once again been tested on Egyptian territory, where DAN Europe is well-known and appreciated: as soon as the doctors of Hurghada's Nile Hospital, where the victim was taken urgently, heard that he was a DAN member, they immediately got in touch with **DAN Europe's International Emergency Operations Centre**. Once the man's data and membership had been verified, DAN assistance provided an immediate Guarantee of Payment for transport and hospital costs.

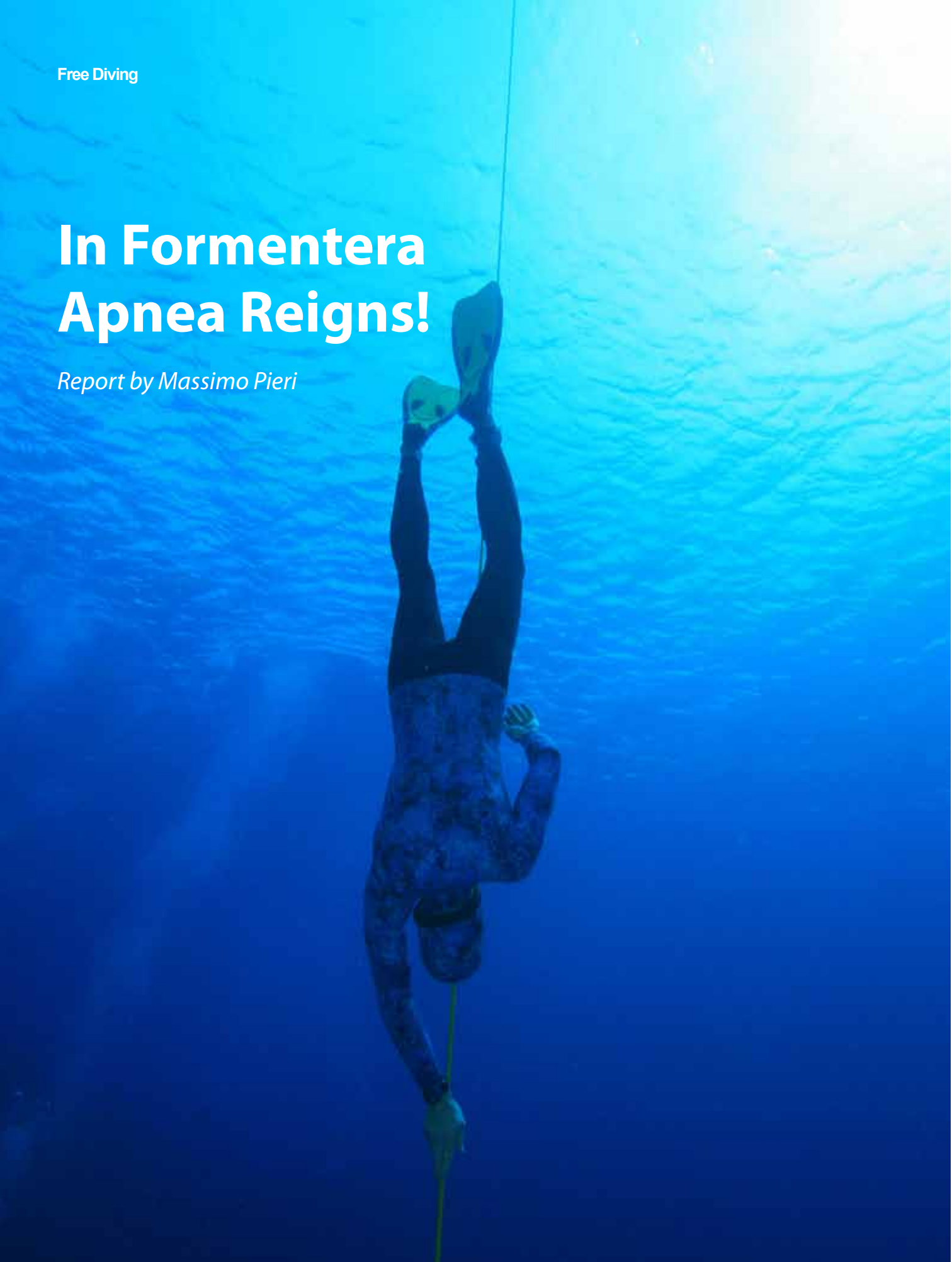
The aim of the assistance in the following days was also that of accelerating as much as possible the time taken to get the member back to his own country. Dealing with the accident necessitated all the documentation associated with the accident to be accessed several times a day: his passport, visa, driving licence, the motorbike's log-book, the accident report and medical records (including their translation from Arabic) and an estimate of the costs. For the whole period of the hospital stay in Egypt, DAN offices also kept in constant contact with the victim's wife, until his conditions stabilised. At that point DAN Europe was able to organise the return to Austria by air ambulance with medical assistance. On board were the injured man on a stretcher, his wife and the DAN doctor. The man's holiday thus ended on 7th July in a hospital of his choosing, where he was taken in for the continuation of his treatment and rehabilitation therapy. The total cost of the assistance was about **45,000 Euros** between air transport and hospital costs, for which the grateful DAN member did not have to pay a penny.

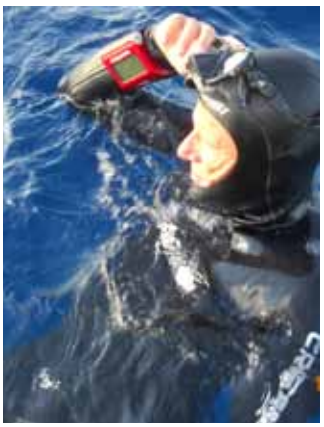
Fitting epilogues to the affair were the report written by the man during his convalescence and the enthusiastic Facebook post by his wife, addressed to all travellers and divers:

"When you travel, make sure you have taken out a **good insurance policy**! I have just experienced how great it is to feel safe and properly taken care of when something goes wrong!
Look after yourselves and you can't go wrong with DAN Europe!"

In Formentera Apnea Reigns!

Report by Massimo Pieri





An apnea workshop with Umberto Pelizzari: what an excellent opportunity for our DSL (Diving Safety Laboratory) to collect relevant data for our research activities on free diving! Also a chance to continue studying a phenomenon that the scientific community has been investigating for years: the *Taravana*.

In the magnificent scenary of the Balearic Islands, our researchers monitored Umberto and his staff, composed of Apnea Academy instructors. They concentrated on the search for silent bubbles, through Echocardiography and Doppler examinations after each diving session.

Dr Danilo Cialoni developed and applied a new protocol for data collection, specifically designed for apnea. The monitoring began on the boats, continued a few minutes after each dive, up to 90 minutes after the dive. The Vellmari diving centre offered logistical support in Formentera.

The moments preceding a free dive are marked by an exciting countdown, an emotion that involves the audience as well. Then the descent begins. It's a fascinating and silent journey, in which you look into yourself and explore the deepest parts of your soul.

"In such particular conditions - says Dr. Cialoni - our body reacts with a series of changes in the cardiac and pulmonary system. When properly analyzed, these changes allow us to deepen our understanding of some diseases that can affect divers. Our research now mainly focuses on *Taravana* (a kind of decompression sickness found in free divers), the causes of which are not yet clear. In addition, data collected under extreme conditions, such as the ones experienced in apnea, are often useful to better study common diseases and disorders, like pulmonary edema, syncope and sleep apnea ".

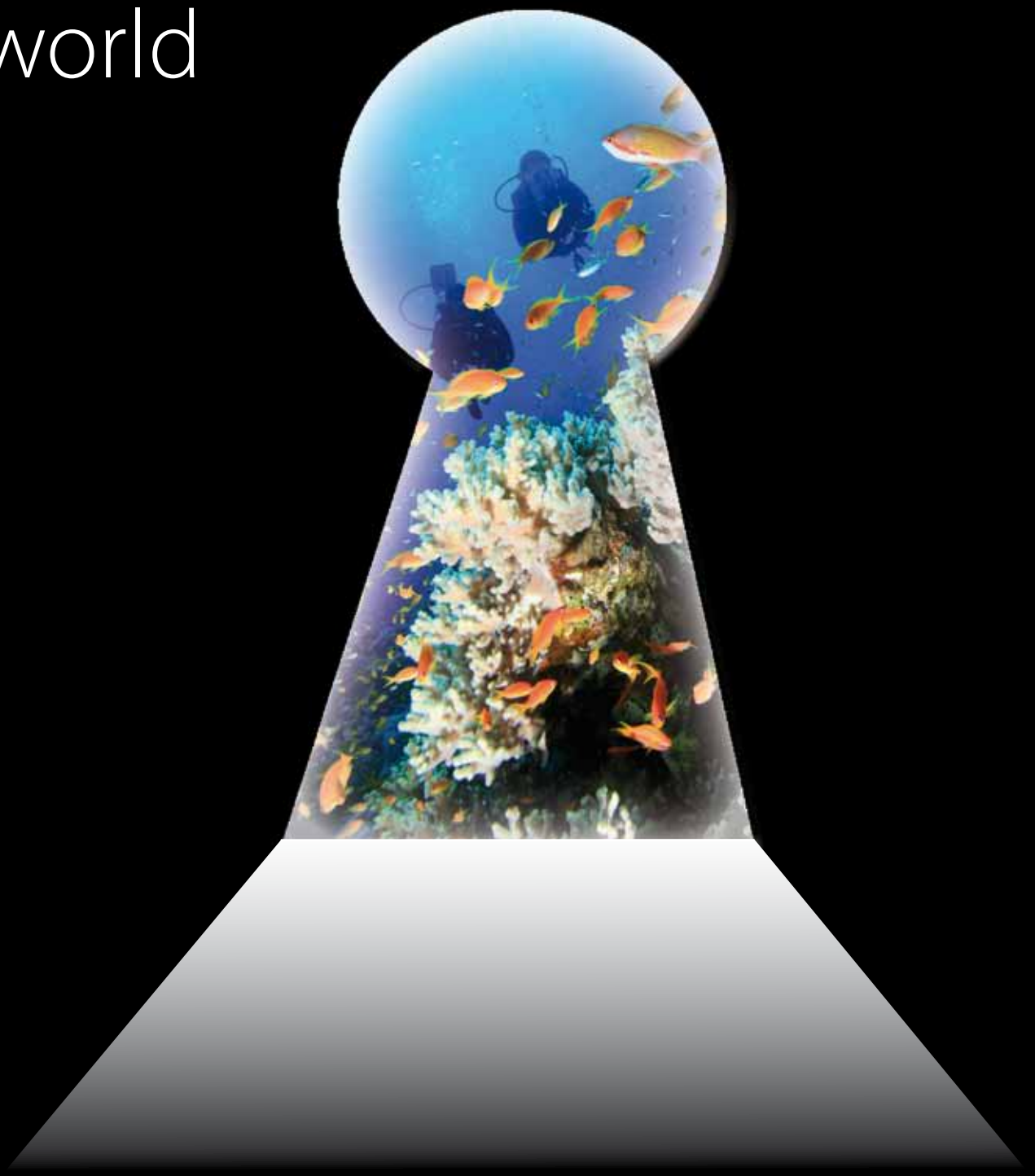
By cross-checking our data with dive profiles downloaded from dive computers, researchers are gaining valuable information on the study of *Taravana*.

Research and data analysis will continue in the next few weeks, with our researchers busy studying the Spanish National Spearfishing Team.

Our work continues and we really hope to contribute to a better understanding of the phenomenon.

We wish safe diving to everyone of you: hold your breath, look within yourself and discover the fantastic and silent inner world...

Curiosities
From the underwater world



Underwater dancing, the first steps

By DAN Europe Staff

Tanks, weights, snorkels and deep pools... not the ideal equipment and place for dancing, but there are those driven by their love for both diving and dancing who have wanted to also experiment its possibilities. After wedding ceremonies and the two-seated scooter, now we have a new sport dance on our hands, the latest curiosity in the diving world.
A unique experiment in the world: there is no record of any other similar feats which have nothing to do with the aerial choreographies of synchronised swimming.

Our protagonists are also unusual: two adolescent brothers, Angelo and Cristiana Serena, respectively 15 and 14. They are athletes and registered divers (they got their diving diplomas in 2010) as well as being champions in Sport Dance. Last September, the two diving dancers performed a true and proper underwater rumba, three metres deep in a Rome pool. Five minutes of lifts, torsions, spins and typical rumba steps, hindered by the difficulty in falling and maintaining position and in concentrating on the music being played through the speakers.
They prepared for the feat with dedicated training on the dance floor and in the pool, here using 7 kg and 200 atmosphere rebreathers with 3 and 5 kg weights.

Naturally they wore appropriate costumes for the occasion: an elegant black diving suit for him and a radiant fuchsia outfit for her.

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Insurance Matters

Pro vs Sport Membership: which is the right plan for you?

By Julian Boffa,
Manager On Behalf Of International Diving Assurance Ltd

Many times at DAN our members enquire about the right plan / insurance coverage for them. Is any type of insurance coverage good enough? A very simple question, but the reply needs some reflection.

This question can be tackled in the best way we all know: the diver's way. When we go for a deep dive, is diving on air sufficient, or do we need to use mixed gas solutions? As we all know, the answer is that it depends on how deep one wishes to go. For some depths, air will be more than appropriate, but for dives beyond certain depths, mixed gas solutions are better suited.

The same applies when it comes to insurance coverage. Insurers, and in particular DAN, together with its insurance company (International Diving Assurance Ltd) design different coverages and plans to suit the different needs of divers based on the type of diving they undertake, the different risks of a claim also based on the diving undertaken and, even more importantly, the different sizes of divers' pockets.

Whilst DAN and its insurance wish to offer their services with the least financial burden on its members and the diving community at large, they need to be prudent to collect enough funds to be able to pay all the claims suffered by the member divers and continue to offer their services in the longer term. Our vision is that since the different types of diving present different levels of the risk of a claim occurring, it is only fair that the price paid depends on such levels of risk. Having said that, it would not be practical to have an individual price for every different type of diving activity. Therefore the most realistic solution is to divide the diving world into those who undertake Sport diving exclusively and those who undertake diving also as a Professional activity.

What is the distinguishing factor between a Sport diver and a Professional diver? A Professional diver is an individual who earns money out of his/her diving activity and/or bears responsibility and duty of care towards diving students or customers, even if doing so without remuneration. Examples would include a paid diving instructor, guide, photographer, videographer, biologist and similar professions or activities where diving is involved for work (and money-earning) reasons, as well as Dive Club Instructors or Dive Guides acting on a volunteer basis within the activities promoted by their Club. These would all be considered as diving professionals.

From the experience gathered from tens of thousands of claims handled by DAN over the years, Professional divers tend to have more claims, both in frequency and severity, than Sport divers. Although Professional divers are normally more experienced than Sport divers, this higher frequency and severity of claims is normally caused by:

- Professional divers being more often in the water than a Sport diver would. For example, a Sport diver would normally, on average, dive around 15 to 20 times a year, whereas a diving instructor could be expected to be diving almost every day of the year.
- Professional divers needing to dive in riskier environments, for example having to take care of inexperienced divers.
- The tendency of certain experienced divers to be complacent about their own safety (have you ever heard an experienced diver who pushes safety boundaries, saying “I know what I’m doing, I have done it before and never had any problems”?).
- Professional divers being more exposed from a ‘liability to others’ perspective

Therefore Professional divers face a situation of having more chances of something going wrong, and that is why they need to use their experience to take even greater care.

Having made this consideration, it would be fair to say that, therefore, a Sport diver should not be paying as much as a Professional diver for his/her insurance coverage. The question remains, though, in terms of how good enough is a Sport type of coverage for a Professional diver, with regard to particular diving instructors.

One can distinguish between Sport and Pro plans on two levels. The cover offered is for both "accident" and "liability". Therefore, a professional diver such as an instructor should avoid the pitfalls of distinguishing between a Sport and a Pro plan purely on the basis of whether he or she needs the liability coverage. Let us consider two typical queries in which divers wish to avoid purchasing the wrong type of plan or insurance policy.

Question 1

"I am a diving instructor (or guide), but my liability insurance is already covered by my association. Is a Sport Plan suitable for me, as I wish to save some money?"

Answer

No. Since the Sport membership is priced and intended for Sport divers, the coverage only applies to Sport Diving. Any kind of Professional activity is excluded, since a Professional needs to pay his/her fair price (which is the one of a Pro membership) even for the "Accident" part of the coverage. This does not mean that a diving instructor enjoys no coverage from a Sport plan, but only his/her recreational diving activities as a Sport diver would be covered. If an instructor has an accident whilst s/he is working as an instructor or guide, the accident coverage is not triggered under a Sport Plan (and neither is the liability coverage). Remember that you buy the insurance to be covered, not to pay a cheap premium. In any case, the premium for the liability coverage normally costs as much as the price of one dive and it is anyway beneficial to have your own individual liability insurance in place, as it could be the case that the liability insurance of your association might have limitations.

Question 2

"I am a qualified instructor but I do not work anymore as a diving instructor or guide. However I have retained the qualification in order not to lose my teaching status. Is a Sport Plan suitable for me?"

Answer

Once again we have to distinguish between the two sections of coverage. In this case, there would be absolutely no problem with the "accident" coverage as the diving activity undertaken is not of a professional type. When it comes to the liability aspect, however, the issue is a little more complex. Although the Sport policy would still cover your legal liability (if you have any), the limit of liability insured might not be sufficient. This is because when we discuss liability insurance, we

have to first look at what “duty of care” the diving laws of different countries put on a qualified instructor. The laws of a number of countries consider an instructor as always having a “duty of care” to fellow divers who are less qualified, even if s/he is not working as an instructor for that particular dive. This would therefore put a much higher level of responsibility on qualified instructors during fun dives, and therefore the need to be insured properly with high liability limits remains.

Our recommendation, therefore, is to look at the situation from this angle: if you are a Pro, you are always a Pro, and you need to cover yourself as a Pro. A Sport coverage might not be enough and the few Euros saved in buying only a Sport coverage instead of a proper Pro coverage could end up being very costly for you if something goes wrong. Just as you always listened to what your Diving Instructor had to say when you learned to dive, listen to the diving insurance experts when you look at your insurance coverage.

Photocontest

Winners of the
4th Session 2011

HELMUT THEISS
Results by the pool
of expert underwater photographers.

OMER AKSU
People's choice award,
results from online votes

DAN Mission Statement

Divers Alert Network (DAN), a nonprofit organization, exists to provide expert medical information and advice for the benefit of the diving public. DAN´s historical and primary function is to provide emergency medical advice and assistance for underwater diving accidents, to work to prevent accidents and to promote diving safety. Second, DAN promotes and supports underwater diving research and education, particularly as it relates to the improvement of diving safety, medical treatment and first aid. Third, DAN strives to provide the most accurate, up-to-date and unbiased information on issues of common concern to the diving public, primarily, but not exclusively, for diving safety.

DAN EUROPE FOUNDATION
Territory: Geographical Europe, European territories and protectorates, with regional IDAN responsability for the Mediterranean Sea and Shore, the Red Sea, the Arabian Gulf, Ethiopia, and the Maldives.

Registered Address and Headquarters:
26, Triq Fidel Zarb, Gharghur NXR07, Malta;
TEL. +356 2141 9804 - FAX. +356 2141 9294

Operations Head Office:
P:O: BOX: DAN, 64026 Roseto Italy,
TEL. +39 085 8930333
FAX. +39 085 8930050
E-mail: mail@daneurope.org
Web: www.daneurope.org

DAN Europe Regional Offices

DAN Europe Balkans
(Serbia and Montenegro, Bosnia and Hezegovina)
Area Drector: Prof. Alessandro Marroni
Regional Director: Dr. Dragana Ivkovic,M.D.
Milovana Marinkovica 17. 11000 Belgrade, Serbia and Montenegro
TEL. and FAX. +381 (0) 11 247 10 40
MOBILE. +381 (0) 63 8129 687
E-mail: Balkans@daneurope.org

DAN Europe BeNeLux
(Belgium, Netherlands, Luxembourg)
Area Director: Prof. Costantino Balestra Ph.D.
Area Medical Director: Dr. Peter Germonpre M.D.
National Medical Director for The Netherlands: Dr. Menno Gaastra M.D.
Regional Head of Training (Dutch): Guy Thomas
Regional Head of Training (French): Frédéric Venderschueren
Phone and Fax: refer to Central Office in Italy
Email: benelux@daneurope.org

DAN Europe Česko
Area Director: Prof Alessandro Marroni
National Director Dr. Pavel Macura M.D.
K Břízkám 4/7, Hradec Králové, PSC 500 09, Česká Republika
Phone + 420 495 516 147
Fax-phone + 420 495 264 641
Email: cekia@daneurope.org

DAN Europe Croatia
Area Director: Prof Alessandro Marroni
National Director Dr. Darko Kovacevic M.D.
Kruge 19A, 10000 Zagreb, Croatia ,
Fax +385 (0)1 6151900
Email: croatia@daneurope.org

DAN Europe France
Area Director: Prof. Costantino Balestra Ph.D.
Area Medical Director: Dr. Peter Germonpre M.D.
National Medical Director:
Dr. Bruno Grandjean M.D.
Service de Médecine Hyperbare,
Centre Hospitalier d'Ajaccio, 27 Avenue Impératrice Eugénie, 20303 AJACCIO CEDEX.
Phone and Fax : refer to Central Office in Italy
Email: france@daneurope.org

DAN Europe Germany, Austria & Hungary
Area Director: Dr. Ulrich van Laak M.D.
Eichkoppelweg 70, 24119 Kronshagen, Germany,
Phone +49 (0)431 549 861
(Monday and Thursday, 18 until 21 h CET),
Fax +49 (0)431 544 288,
Email: germany@daneurope.org
Hungary
National Info-line Tel.: +36 30 8114451,
National Emergencies Tel.: +36 30 5222497

DAN Europe Hellas
Area Director: Prof Alessandro Marroni
Medical Director: Dr Bassilis Zachariades
C/o Hyperbaric Medical Center:,
5 Klazomenon st., Tavros Athens, 17778
Tel/Fax +30 210 3462898
(workdays,14:00 to 19:00 pm)
e-mail : Hellas@daneurope.org

DAN Europe Ibérica (Andorra, Portugal, Spain)
Area Director: Dr. Jordi Desola, M.D., Ph.D.
CRIS Unitat de Terapèutica Hiperbàrica,
Dos de Maig 301, Hospital Creu Roja,
08025 Barcelona, Spain,
Phone +34 93 347 7366,
Fax +34 93 450 3736,
Email: iberica@daneurope.org

DAN Europe Italia
National Director: Dr. Nuccia De Angelis
Medical Director: Prof. Alessandro Marroni M.D.
P.O. Box DAN, 64026 Roseto , Italy,
Phone +39 085 893 0333,
Fax +39 085 893 0050.
Email: italy@daneurope.org

DAN Europe Malta
National Director:
Dr. Ramiro Cali Corleo M.D.
26, Triq Fidiel Zarb, Gharghur NXR07, Malta.
Tel: +356 2141 9804; Fax: +356 2141 9294 ; Email: malta@daneurope.org

DAN Europe Polska
Area Director: Prof Alessandro Marroni
Medical Director, Zdzislaw Sicko, M.D., Ph.D.
Membership Assistance Coordinator, Jacek Kot, M.D., Ph.D.
National Center for Hyperbaric Medicine,
Institute of Maritime and Tropical Medicine,
Medical University of Gdansk
Powstania Styczniowego 9B
Gdynia 81-519, Poland
Phone +48 58 699 8610 (08:00 – 15:00)
Fax: +48 58 622 2789
Email: polska@daneurope.org

DAN Europe Skandinavien (Denmark, Norway,
Sweden, Finland)
Area Director: Dr. Ole Hyldegaard, MD, Ph.D.
P.O.Boks 11, 2830 Virum, Denmark.
Tel +45 45 836330
Fax +45 45 836 331.
Email: skandinavien@daneurope.org

DAN Europe Slovenia
Area Director: Prof Alessandro Marroni
National Director: Prof. Dr. Igor Mekjavic
Department of Automation,
Biocybernetics and Robotics
Jozef Stefan Institute
Jamova 39, SI-1000 Ljubljana, Slovenia
Tel +386 41 696 558

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Questions? *Call DAN Europe al +39 085 893 0333 or any of your regional offices indicated above*

Fax +386 1 423 2209
Email: slovenia@daneurope.org

DAN Europe Portugal
National Director: Dr. Oscar Ferraz Camacho
Apartado 3046, 4451-801
Leça da Palmeira, Portugal
Info Line: +351 910 49 2121 (1-5, 15:30 – 17:30)
Email: portugal@daneurope.org

DAN Europe Suisse
National Director: Dr.Jürg Wendling M.D.
Faubourg du Lac 67, 2502 Biel,
Switzerland, Phone +41 32 322 3823
Fax +41 32 322 3839.
Email: suisse@daneurope.org

DAN Europe Türkiye
Area and Medical Director :
Dr. Ramiro Cali Corleo
National Medical Directors: Dr Salih Aydin,
Regional Managers : Murat Egi, Ali Konoklu
C/o Yavuztürk Sok, No32, D:1;
Söğütlüçeşme
34716, Kadıköy ISTANBUL
Phone: +90 533 341 5404
+90 533 448 0458

DAN Europe United Kingdom Gibraltar & Ireland
Area Director: Dr. Ramiro Cali Corleo, M.D.
Regional Manager:
Christopher Young CertEd
EMP House, Telford Way
Coalville, Leicestershire, LE67 3HE
United Kingdom
Phone:
National 0845 029 1990;
International +44 845 029 1990
Fax :
National 0845 029 1991;
International +44 845 029 1991
Email: uk@daneurope.org

DAN Europe Affiliate Organizations

DAN Maldives
Area Director: Prof Alessandro Marroni
Medical Director. Dr. Guenter Frey, M.D.
Bandos Hyperbaric & Medical Clinic - Bandos Island Resort. Republic of Maldives.
Fax +960 44 0060
Email: maldives@daneurope.org

DAN Egypt
Area Director: Prof Alessandro Marroni
Regional Director: Dr. Adel Taher, M.D.
Hyperbaric Medical Center
Sharm el-Sheikh, Egypt
Tel.: +20 69 3 660 922 or 23
(from 10:30 till 18:00 - daily)
Fax: +20 69 3 661 011
E-mail: egypt@deneurope.org

DAN Israel
Area Director: Prof Alessandro Marroni
Regional Director: Mr. Shai Roth
P.o.box 36667 , Tel – Aviv, 61366 , Israel
Fax :+972-3-9213838 .
e-mail: israel@daneurope.org

The other International DAN Organizations

DAN America
territory: United States and Canada, with regional IDAN responsibility for Central and South America, the Caribbean, Polynesia, Micronesia and Melanesia (except Fiji), and any other area not designated for the other DAN entities
President and CEO: Dan Orr
The Peter B. Bennett Center, 6 West Colony Place, Durham, NC 27705, USA,
Phone +1 919 684 2948,
Fax +1 919 490 6630
Email: dan@diversalertnetwork.org .
Website: http://www.diversalertnetwork.org

DAN America - Mexico
Director, Dr. Cuauhtemoc Sanchez, M.D.
Indiana 260-907, Col. Nápoles Mexico, D.F. 03710, Phone +52 55 5568 8082,
Fax +52 55 5568 8083
Email: danmex@hotmail.com
Website: http:// www.diversalertnetwork.org

DAN Japan
Territory: Japanese mainland and islands, with regional IDAN responsibility for Northeast Asia-Pacific
Director Prof. Yoshihiro Mano, M.D.
DAN JAPAN /J apan Marine Recreation Association
Kowa-Ota-Machi Bldg,2F, 47 Ota-machi 4-Chome Nakaku,
Yokohama City, Kagawa 231-0011 Japan
Tel:(81)45-228-3066
Fax:(81)45-228-3063
Email: dan@danjapan.gr.jp
Website: http://www.danjapan.gr.jp

DAN Asia-Pacific
Territory: Australia and New Zealand, with regional IDAN responsibility for Papua New Guinea, Fiji, Indonesia, Malaysia, Vietnam, Singapore, Cambodia, Myanmar, Philippines, Vanuatu, Solomon Islands, Brunei, Thailand, Hong Kong, Korea, China and Taiwan
Director Mr. John Lippmann
49A Karnak Rd, Ashburton, Victoria 3163, Australia.
Postal address: PO Box 384 Ashburton, Vic. 3147, Australia.
Tel: +61-3-9886 9166;
Fax: +61-3-9886 9155
Email: info@danasiapacific.org
Website: http://www.danasiapacific.org

DAN Asia Pacific - Philippines
Medical Director, Dr. Benjamin G. Luna, Jr.M.D.
Makati Medical Center; 2 Amorsolo St.;
Makati City 1200; Philippines
Phone/Fax: +63 (0)2 817 5601 (office hours); or Phone: +63 (0)2 815 9911 (ask for Ext. 2123; office hours);
Email: blunamd@cnl.net

DAN Southern Africa
Territory: Austral Africa, Comoros, Madagascar, Seychelles Islands, plus Kenya and Zanzibar (for residents only, European expatriates refer to DAN Europe)
Director Dr. Frans J. Cronje, M.D.
DAN-SA Building, Rosen Office Park, Cnr Invicta and Third Roads, Halfway House, South Africa 1685
Telephone: + 27 11 312 0512
Fax:+ 27 11 312 0054
Email: mail@dansa.org
Website: http://www.dansa.org

DAN Europe E-mail address list
General mail@daneurope.org,
Membership members@daneurope.org
Medical medical@daneurope.org
Training training@daneurope.org
DAN Europe Sponsor Program
sponsors@daneurope.org
Insurance Claims claims@daneurope.org

Moving? *If you have moved in the last year, please send DAN your new address.*
Questions? *Call DAN Europe al +39 085 893 0333 or any of your regional offices indicated above*

DAN Partner Program

DAN
Business Partner
Gold

ACQUATICA SCUBA ASD
VIA RAFFAELLO SANZIO 197 - 65124
PESCARA - Italy
Telefono 328-4410287
dive@acquaticascuba.it

CODE BLUE
Instant Offices, Great West House Great West Road Brentford - TW8 9DF Middx - United Kingdom
Telefono 8444142977
chantellenewman@aol.com

DAN EDUCATION NETWORK
International Office - Dr Natterergasse 6/2/5 - 1020 Vienna - Austria
Telefono 06642025865
office@dan-education.net

DUIKPUNT OOSTENDE BRUGGE
torhoutsesteenweg 551 - 8400 Oostende - Belgium
Telefono 59800951
info@duikpunt.be

SCUBA DEVIL
Oude Amersfoortseweg 22 - 1213 AD
Hilversum - Netherlands
Telefono 653358491
info@scuba-devil.com

ZPV - PIRANHA
DRIENERLOLAAN 5 - 7522 NB ENSCHEDE - Netherlands
opleidingen@zpv-piranha.nl

DAN Business Partner Silver

DANIEL RANWEZ
Brusselsesteenweg 644 - 1731 Zellik - Belgium
Telefono 24780739
info@cooldivers.be

PROF. DIVING INSTR. ASSOCIATION
Almirante Riera Alemany 22 - 07157 Puerto Andraitx - Spain
Telefono 609600544
pdia@pdia-divingcenter.de

DAN Business Partner Bronze

LATINO DI INVERSIONES NV
Kaya Gobernador Debrot # 73 - - Kralendijk - Netherlands Antilles

ROB'S SCUBA SERVICES
Vauwerstraat 8 - 6121 XS Born - Netherlands
Telefono 622791138
info@robsscubaservices.nl

UDIVING, UNIPESSOAL, LDA.
Estrada Nacional 125, Lote 4, R/C Esq - 8005-145 Faro - Portugal
Telefono 936260247
info@udiving.pt

DAN® Shop

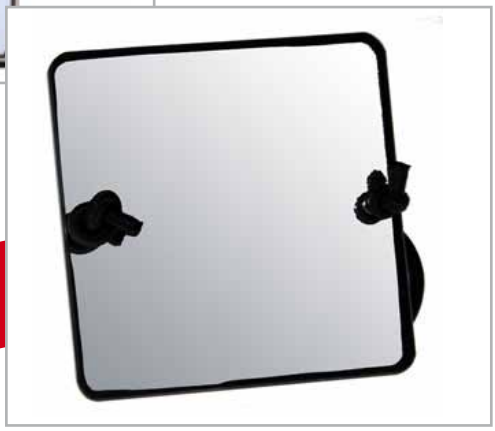
€ 2.10
+ VAT

Roman diver Fridge magnet

Funny fridge magnet showing a modern recreational diver in ancient Roman times. This " Roman Diver" design by the artist "Schlomo" is one of a series of funny, limited edition, DAN Diver designs, made exclusively for DAN Europe.

More info:
Hight: 100 mm. - Width: 50 mm.
Made of MDF with magnet attached.

€ 12,00
+ VAT



Scuba Sight mirror

ScubaSight is a useful and innovative tool that enlarges the visual field in diving, which is often limited by encumbrance and difficoulties due to the dive equipment. This special dive mirror makes it easier to locate your dive buddy without unnecessary movements; check your equipment; solve diving problems and make visual signalations.

DAN Europe Product Selection

Visit the online catalogue today and discover the complete range of DAN products!

€ 21,42
+ VAT

Deluxe DAN Europe T-shirt

This grey T-shirt is made of 90% Cotton and 10% Elastane and designed exclusively for DAN Europe.
The T-shirt represents the DAN colours red, white and grey, while the number “83” refers to the year DAN Europe was founded.
Next to the word DAN on the chest, the wording “Divers Alert Network Europe” on the back and a special DAN-patch on the left sleeve, there is some further personalisation in the collar and at the end of the polo (front) where a label with the slogan “Helping Divers Since 1983” is attached.

€ 31,46
+ VAT

DAN Europe Shirt

Sportive, white, 100% cotton, long sleeve Shirt, personalised for DAN Europe with a DAN logo above the front pocket, the diving / Alfa flag (blue/white) on the right sleeve and a nice patch with DAN logo and the image of an octopus on the left sleeve.

Organo ufficiale del Divers Alert Network Europe
Periodico trimestrale - Anno 2011 - n.4
Sped. in abb.post. art.2 comma 20/c
Legge 662/96 - Filiale di Teramo