

Emergency Planning

When Things Go Wrong

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Emergency Action Plans (EAPs) are essential tools for dive professionals and businesses: A dive accident is always possible and we need to have a plan in place to mitigate this. However, few understand what goes into identifying, compiling, reviewing and qualifying a truly effective EAP. This article presents a guide to this process.





There are many more situations which require plans than one might realise. There are good plans and not-so-good plans; however, the most important consideration is whether the plan will actually work and whether you will be competent to follow it in a real emergency. This needs to be considered even if there is a documented and often-recited drill in place. Real emergencies frequently scare emergency responders into forgetting all that they might have learned.

In this article, we will consider what is meant by the term “emergency planning”, why we need it and what the essential elements are. We will also list examples of possible emergency situations. Additionally, there will be a discussion of how to prepare an EAP, who is responsible for the creation and implementation of the EAP, and how to make sure it works and that it will continue to work in emergency situations.

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THE EAP

Briefly stated, an EAP is a pre-determined course of action intended to mitigate a potential emergency or damaging situation that might endanger or harm people, property or the business’ or dive professional’s ability to function safely. It should consider many aspects, such as the actions taken to protect those involved, their equipment and assets; the ability to assess the severity of the situation; and the implementation of steps to mitigate the situation.

Why we need an EAP

This goes beyond “What do I do?”; we need to understand why the need for a plan exists. There are five primary reasons for an EAP, as listed below.

1. We want to protect staff, clients and the public in the vicinity from injuries, and have the ability to react and assist appropriately.
2. We need to protect our equipment and facilities, ranging from dive gear to boats and vehicles, and even the dive centre itself.
3. We want to avoid any exposure to liability risks and possible related actions, not just reinstatement but also punitive actions.
4. We need to consider the impact on the environment – whether this is the diving attraction itself, the local communities or the long-term impact on the environment.
5. Importantly, we want to retain our clients, our business and our source of income.

The essential elements of an effective EAP

Ensuring an effective plan requires a more detailed assessment and understanding of what might be necessary.

1. The vulnerability assessment

We need to know what the hazards are, and then, importantly, we need to understand which ones are real and which are purely hypothetical. There is a simple technique to decide which are important, as well as assess how important they are. We discussed this technique in a previous series of articles published in *Alert Diver* on The DAN-SA Hazard Identification and Risk Assessment Programme, or HIRA for short. The basic steps of this technique follow.

- Once we have identified the hazard, we think of how likely a situation is to occur; this is the “probability”
- We consider how often will there be an exposure to this hazard; this is the “frequency of exposure”
- We account for what the likely outcome of an accident is (“How severe are the consequences?”)

If there is any situation which has a good probability of occurring, as well as a possibility of frequent exposure and a serious impact on the diver, business or environment, it qualifies as a risk. Conversely, if a situation is improbable, infrequent and only incurs minor or no adverse results, it has little or no risk involved.

The next steps would be to determine whether we can prevent, control or mitigate this risk and what we need to do to achieve this; finally, we would need to establish who and what we need to be able to manage an emergency. These requirements include staff, equipment, procedures and training, and any outside assistance.

2. Hazard identification

The list below details the main areas where hazards can be found.

- The environment (above and below the water): fire, social instabilities, marine life and remoteness
- Diving risks: injuries, DCI, lost divers, drowning and gas intoxication
- Workplace-related risks: electrocution, sunburn and sunstroke, stress, cylinder and other vessel ruptures, and chemical exposures
- Breathing gases: contamination, incorrect gas used and compressor hazards
- Equipment: boats which might break down at sea, capsize or be lost and vehicles which may be involved in accidents or hijacked

Of course, some of these will be area-specific. However, the best diving spots are usually located in areas that are remote or less developed and can even be in unstable countries. Therefore, getting help will not always be as easy as a quick telephone call or a handy helicopter.

3. Immediate responses

We need to be able to respond immediately in an emergency and therefore cannot waste time with stopping to deliberate.

- Mitigate the initial situation: extinguish, contain, control and react appropriately (such as in the event of any threatening behaviour)

- Communicate the situation to obtain rapid assistance: This might be to the land-based operation, others in the vicinity or to emergency responders
- Take care of the injured: Remove them from the risk, apply first aid, stabilise them and get them ready for emergency evacuation or professional assistance
- Emergency equipment needs to be readily available and functional: first aid, fire containment, communications and recovery gear
- Follow the plan: React appropriately and do not over-think your actions

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4. Other elements to be included

What else should be considered?

- Standard operating procedures: If followed, these will preclude many of the emergencies. They are preventative, and allow for early warning and liability reduction
- Checklists: These provide structured reactions, reduce the need to think, ensure consistency in actions taken and assist in training staff
- Reporting documents: These offer excellent learning opportunities and can reduce liabilities due to the recording of actual events
- Training: This is the cornerstone of prevention, preparedness and competence
- Practice, practice, practice: Only through realistic and frequent drills will you be able to react appropriately, rapidly and without panicking

These elements will ensure that you can better defend yourself and your business if your activities and practices are called into question during accusations, investigations or even criminal hearings.



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Where the most likely emergencies might occur

The possible areas of risk vary between centres and areas of operation, so a careful analysis is needed to determine what the real issues are. This is a partial list to assist in identifying areas of concern.

- The dive centre: fires; explosions of high-pressure cylinders, gas tanks, or containers of hazardous fluids; contact with chemicals or other hazardous materials; injuries from electrocution; or even engagement with aggressive people or social unrest
- The pool and training areas: exposure to hazardous substances (such as chlorine); medical emergencies (including from pre-existing health issues); injuries (slipping, diving, falling or lifting heavy objects); or drowning
- The dive: diving and other physical injuries (from propellers, ladders, slipping, heavy objects); hazardous marine life; lost divers; drowning; and medical emergencies due to pre-existing conditions. Do not forget entry and exit hazards when using rocky shores or difficult-to-access caves or pools
- Means of transport (boats and vehicles): lost or defective boat; a fire in the vehicle or boat; inclement weather; capsizing; launch accidents; road accidents; and even hijacking of a vessel or a vehicle
- Other areas of concern: These hazards might appear obscure or unlikely, but always consider the location and the surrounding conditions
 - A lost, abducted or wounded guest
 - Unacceptable or aggressive behaviour by a guest or a member of staff
 - Sudden ill-health or a medical emergency unrelated to diving or related operations
 - Criminal activity or arrest, death or homicide involving a guest or a member of staff
 - Access to and reliability of local emergency, medical, and law enforcement services



Managing an EAP

So, now that we have agreed on the need for an EAP, how do we go about compiling a realistic, practical and effective plan? How do we ensure that it will be optimal in containing and managing an incident, accident or occurrence with potentially dire consequences? How do we address real concerns, rather than endless theoretical hazards?

This is often where haste, bare-minimum compliance to specified requirements, inexperience or unrealistic expectations lead to an EAP which is ineffective or even useless.

To reinforce this point, consider this: How often do airline staff go through their drills? Have you ever seen the staff on a cruise-liner practising life-boat drills between cruises? Or, to put it differently, would we be willing to accept firefighters or ambulance staff who are relying only on the haphazard experience that they have gained through emergency situations when they come to our aid?

In truth, few professionals would consider themselves fully prepared for what goes into identifying, compiling, reviewing and then verifying an effective EAP. So, this is the shortfall we want to overcome: How do you “get it right”? We will consider how to structure the EAP, who is responsible (and what they are responsible for), and the “acid test” to determine whether the EAP will work.

Preparation of an EAP

While each emergency situation will differ to some extent, the critical variables can typically be attributed to two factors. These are the geographic region (remoteness, local customs, laws and regulations); and the local area (availability and quality of emergency services; access; communication systems; and safety and security issues). Based on these key variables, eight essential elements should be included in all EAPs.

1. Hazard identification

Hazards depend on the location, environment, activity and process. Each aspect of the diving operation needs to be assessed. The following analysis serves as a guide to what hazards one can expect.

When identifying a hazard, one should consider the *type of harm* it would cause, typically categorised into three groups: injuries, illnesses and losses (these include property, equipment and the business itself),

Hazards themselves may then be grouped according to their *nature*, as identified below.

- Physical: noise, temperature, sun exposure, pressure, electricity, heavy loads
- Chemical: gas contamination, asphyxiants, irritants, toxic substances
- Biological: macro (rodents, maggots) and micro (bacteria, viruses, fungi)
- Ergonomic: ventilation, exhaustion, strains, limb injuries
- Psycho-social: stress, burnout, violence, physical and substance abuse
- Mechanical: machinery, slips, gas cylinders, heavy objects

Hazards may also be allocated according to the various areas of a diving operation. For details, see DAN-SA's blog article on HIRA and download the free HIRA guide at <https://goo.gl/RE4vSo>

Focus on the major risks; those that will cause injuries, fatalities or major loss to property.

2. Importance: how big the risk is

Obviously, we want to focus on the major risks; those that will have the biggest impact on the business, and typically those that cause injuries, fatalities or major loss to property. The way we quantify the risk is detailed previously under the heading, “The vulnerability assessment”. Each business might do this differently but if done consistently, the net result will be a list, in order of priority, that applies to the business. The list should contain true, real-life emergency situations where immediate and clearly considered actions are concerned.

3. Nature of the emergency

Here we need to identify what the emergency might relate to, such as fire, explosion, injury, aggression or missing persons. A list of examples of these potential hazards was included previously under the heading, “Where the most likely emergencies might occur”.

4. Required emergency responses

These are situation-dependent, but the following are some examples.

- Search and rescue: missing divers and missing persons
- Injury management: stabilisation, resuscitation and medical treatment
- Fire management: extinguishing the fire and evacuation
- Rapid communication: quick response to obtain fast assistance
- Recovery: recovery from and clean-up after the emergency
- Respond to aggression: respond appropriately to threatening or aggressive behaviour

5. Assistance available

A careful examination must be made of all the possible resources that can be used in the event of an emergency. These include evacuation services (ambulance, aircraft, vehicle or boat); search and rescue (private sea-rescue, coast guard or navy services); medical services (doctor, paramedic or EMT availability); and security services (law enforcement and private security).

6. Equipment required to deal with an emergency

Appropriate equipment is needed to address most situations. You may need fire protection equipment; communication devices; medical equipment and supplies; and recovery equipment (stretchers and hoisting devices).

7. Training and preparedness

To ensure both appropriate and rapid response in the case of an emergency, there are some important steps that can be taken. Firstly, assign each task to the right person who will not panic and will keep a cool head. Use straightforward

and short checklists (containing no more than five to six immediate actions). Provide training on how to respond as per the EAP and on the rapid use of emergency equipment.

8. Competence and confidence

- Review: All EAPs need to be reviewed by the team who will be involved in mitigating and containing the situation. Plans need to take into account the abilities of staff, with realistic equipment and resources
- Verify: EAPs must be carried out with attention paid to all the details, possible complications and shortcomings, to ensure that they achieve the desired aim. Consider obstructions, equipment failure, unavailability, impassable areas and a breakdown in communications. There should always be alternative plans if the primary plan is rendered ineffective
- Competence: Training in the use of resources and equipment, practice, and regular planned and unplanned drills will ensure that emergency personnel know exactly what to do
- Confidence: The whole team of operational staff will have confidence in their ability to contend with whatever is thrown at them if they have the following: a proven, effective plan; and competent colleagues who can respond rapidly, effectively and without confusion or panic, with the knowledge that all foreseen emergencies can be effectively managed

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Then, there are few additional considerations to keep in mind. Firstly, ensure that your EAP is in no way a “cut and paste” plan; each dive centre, site, dive operation, location and staff complement differs from the rest. Secondly, make



sure that your EAP is realistic: Assess what can be done, what is actually, readily available, and what the capabilities and qualifications of the staff are. Finally, gather all the relevant contact details, such as contact numbers for emergency responders and DAN.

Roles and responsibilities

These can be divided into five levels, depending on the size and complexity of the operation.

- Leadership: If they want to have a set of effective procedures and competent staff, management must demonstrate buy-in and lead by example, with commitment and intent. After all, it is these very procedures that will ensure that the business can recover from most emergencies
- Compiler: An experienced person or consultant should be delegated to draft the procedures. Management should then review and adjust these
- Implementer: A staff member with credibility, authority and attention-to-detail should be tasked with implementation. Very often this is the sticking point; no one wants to make time to put procedures into practice
- Trainer: This requires someone with teaching skills and the ability to command attention
- Staff: It is important that staff take these procedures seriously and accept their roles. Acknowledgment and

encouragement from management will go a long way to keeping staff interested and committed. Management has the essential role of ensuring that EAP drills are performed both frequently and with intent

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Emergency drills: practice makes perfect

In short, an EAP is only as good as the practice it receives. Only practice will ensure that skills and reactions remain effective. Frequent drills will help you determine whether your plan is effective; flexible (allowing for problems and alternatives if necessary); realistic (according to staff





capabilities and resources); and reliable (staff have developed confidence in the plan and know it will work in a real, stress-filled situation).

These aspects can be achieved during compilation, implementation and regular practice. EAP drills should be provided both regularly and, at times, unannounced. The use of performance stress (putting someone on the spot), time-keeping, observation and review will aid in developing the confidence levels of staff and emergency personnel. It is also better to reward and acknowledge good performance during drills rather than to punish failure. Ensure that staff take their drills seriously every time. Maintain a structured system of retraining and practising, and keep records of all drills performed.

Debriefing after EAP drills is just as important as it is following an actual emergency. It is a significant liability to abandon staff to their thoughts or to leave them stranded in a state of failure, guilt, shame or self-doubt. It is also a predictor of future performance failures, as well as being a risk factor for adverse psychological consequences and

post-traumatic stress. When used constructively, EAP drills build individuals' resilience to stress, team-spirit, staff loyalty and a sense of confidence that will benefit the business day-to-day, as well as serving everyone's interests in those rare and unexpected times of crisis, for which the EAPs were originally devised.

BE PREPARED FOR EMERGENCIES

It is certainly clear that we need to understand and be able to prioritise in hazardous situations. By illustrating some of the potential concerns, we hope that the diving business or the self-employed dive professional will gain a clearer idea of the importance of this often-quoted term: the EAP. There will always be risks. However, better knowledge, understanding and preparedness remain our best means of reducing the possibility of emergencies, and containing the consequences of those we eventually face. Implementing effective EAPs is yet another step in showing preparedness and therefore reducing the added burden of liability in the event of any emergency. **AD**