

Lost fire fighters

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The thoughts and ideas that you will find in the article are based on studying procedures from different countries, talking to fire fighters that have been in a similar life threatening situation and my own experience. This is definitely not all the answers we need, but to be considered as a contribution to a debate around the issue: "smoke diver safety"

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Lost fire fighters

A smoke diver loose his hose and gets lost in a building. There is no longer radio contact and we are having a big problem to solve.

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This is a scenario we all fear but a scenario we all must be prepared for. The Norwegian Fire Academy writes in an article that all Norwegian fire departments should have a procedure that tells us how to assist a smoke diver that's lost or trapped. My goal is to write an article that will give you some thoughts and ideas that will help you make a procedure. The most important thing is that the problem must be discussed among fire fighters.

Many different scenarios

There are so many different possible scenarios that it is impossible to make a procedure that covers them all. What we do right in one scenario may be totally wrong and maybe lethal in the other. The most important thing is to have many different solutions in your toolbox and pick up the ones that will fit in the scenario your at. It's good to have some "advance thoughts" when your head is boiling.

The emotional factor

To experience a scenario where your colleague is in a possible life threatening situation is one of our worst nightmares. It might be too much to ask to stay calm, but in the other hand it's absolutely necessary. The best medicine against a panicky and headless rescue is that you are mentally prepared through training and communication between you and your colleagues. It's important that everyone participate in this kind of exercise cause everyone will be involved if a smoke diver gets lost.

Mayday

The call: Mayday, must never be misunderstood and be a clear signal of a situation that a fire fighter is in a life threatening situation. Mayday is not a signal for something that can be dangerous like an open shaft, gas bottles or whatever. The call must be repeated three times Mayday – Mayday – Mayday followed by an immediate 100 % radio silence. It is of vital importance for the success of a search party that the message that follows is as clear as possible. It must be short and contain all necessary information. This will be a great challenge. It is a fact that many fire fighters in distress wait too long to call Mayday. They fear the commotion it will create.

Organization

How you react to a distress call like this depend on the situation your in and the structural object. The most important thing is that enough smoke divers appear on the base where the smoke diver job started. It's also very important that fire fighters that

are not used for the immediate search and rescue meets at a certain point outside where the officer in charge can organize the whole incident site.

The incident site in whole

Even if a situation like this may be called a "state of emergency" it's important to not forget to see the incident site in whole. Again depending of what scenario you're in, but the situation for the missing smoke diver may worsen considerably if all fire fighters drop their tools and run to assist. To continue fire fighting in one part of the object might be as important as the direct search. If the fire fighter that's cutting a hole in the roof to let out smoke put down their tools to go for a rescue, we might put our self in a more difficult situation than necessary. To continue cutting that hole might be the one thing that saves your colleagues life. If everyone uncritical drops down their nozzles and tools to search for their colleague we might have a serious problem. This situation demands a strong leadership.

Strong leadership

A strong leadership is necessary in all situations, but in particular in a situation where we have a lost fire fighter. We are pressed for time and the emotional stress extreme and the incident site officer must be able to take a step back and make quick and concise decisions.

Evaluations:

Assistance

Will it be necessary to request assistance in shape of more fire fighters and/or tools and materiel? Will it be necessary to request assistance from neighboring fire departments in order to get crews that are not that emotional connected with the missing fire fighter?

Doors

All doors that might lead in to the search area must be opened. We must of cause not forget the fire technical aspect and let air in where it shouldn't, but we have to make sure of that the lost firefighter isn't stopped by a closed door. We must also consider the possibility that the smoke diver have fell down to a lower floor or tried to escape through a higher floor.

Windows

It may be necessary to evacuate the smoke diver through a window and it's often easier for the smoke diver to find a window than a door.

Light

The reason why the smoke diver find the window easier is the light and leading light is a well known escape tool. Parallel with the search after the lost smoke diver we can direct light through windows necessary. After you open a door in to the search area you can place a light directing towards the search area.

PPV

Positive Pressure Ventilation must be considered .

Thermal Imaging Camera

There is no other tool that's better suited for this kind of situation than an imaging camera.

Radio communication

An orderly smoke diver radio communication is a challenge in particularly large fires and it's not getting any better if we receive a message of a lost smoke diver. Good radio and human communication is the key to a successful operation. I might not know the situation the lost smoke diver's in and we might not be able to establish contact with

him. The smoke diver might just be able to send one single message and with a overloaded radio net the message might not get through. We must try to make contact with the lost smoke diver, not just to locate him, but it also a great comfort for him to have a calm voice to listen to.

To search for a lost smoke diver

You can ask your self what's the difference between searching for a smoke diver than an ordinary search and rescue. The most important difference is the emotional factor and that might be difficult to prepare for. It's obvious that the smoke diver's leader have valuable information and a key role in this situation. The leader has to decide right away if he should try to assist himself or send someone else. The partner of the lost smoke diver is also a key figure and will play an important part. If the hose still is in the same position as when the smoke diver was reported lost it will be a good guide and start of a rescue operation. It's important not to just use the hose as a transportation-guide with the nozzle as a goal. If the smoke diver has fainted cause to dehydration or something he is likely to be found near the hose. The search team must cover both sides of the hose as they approach. The last place of where the smoke diver was last seen is a good place to start the search. Remember that you are searching for a colleague that have the same education as you and most likely will think the way you do.

The leader of the search team must consider letting the first smoke diver team decide for them self where to search depending of the situation. No one knows better what the situation is like inside then them. The next search team or teams can do a more systematic search.

The partner

If a smoke diver loose his partner he must consider what to. If the lost smoke diver is conscious he will try to find the hose and the partner most consider if it's necessary to pull out, search him self, stay where he is and wait for assistance. He must know that if he pulls out with the hose it will be difficult both for the search team and for his partner that might be looking for the hose. In the other hand the situation might be that it's absolutely necessary to pull out right away and bring the hose to protect the withdrawal.

The lost smoke diver

Smoke divers that can't find their way out of an object without help must call for help at an early stage. The MAYDAY call must be followed by a 100 % radio silence and the smoke diver or his partner must give an accurate description of the situation their in. The lost smoke diver knows the drill and knows what's to do to help out the search. If the lost smoke diver is conscious an able to move it will help the search if he can move over to a wall. In that way it will be easier for the search team to find him. He must use his light actively to draw attention.

Go or No-Go

Either we like it or not, there might be situations where we have to stop any life saving operations within an object. Sometimes we have to admit that it's impossible to do a smoke diver effort cause to the conditions. This is an order every leader must be ready to make. Like it or not.

Practical solutions

To physically get a smoke diver out of an object is hard work, but can be made easier if you practice and find the best solution. Using the harness to pull/drag the smoke diver is a start and easier than to carry.

The cylinders will protect the maybe unconscious smoke diver under transportation. The backside is that the smoke diver will be in a position that will close his respiratory passage.

The partner of the unconscious smoke diver must ask him self certain questions before acting.

Have I given a right description of our problem through the radio?

Will I manage to pull my partner out alone?

Does the situation I'm in allow me to let the nozzle behind?

Do I see the door out?

Will I be able to follow the hose at the same time as I'm pulling my partner out?

Should I stay where I am, protect my partner and wait for assistance?

When I get assistance, should I protect the withdrawal with my nozzle, open doors and move objects that's in the way?

Should my colleagues outside pull the hose out while I'm pulling out so the hose don't cause an unnecessary obstacle?

How much air do you have left?