

Firefighters rescue assignment



**ASSIGN
BUSTER**

What happens when a home catches on fire and there are helpless citizens trapped inside or when a firefighter is injured inside a fire and can not get out? Firefighters train long hours sacrificing their blood, sweat, and tears to be prepared for any situation that may arise during a emergency such as search and rescue, rescue of a downed firefighter, high angle rope rescue, water rescue, and also confined space rescue. Not all firefighters are trained in search and rescue; only the most qualified firefighters become certified members of a technical rescue team.

Technical rescue teams train for hours upon hours to be the best they can be whether there answering a call to a car accident or a burning building.

Search and rescue is defined as actions that trained members of rescue teams perform at emergency scenes to remove some one from immediate danger, or to extricate victims if they are already entrapped (“ Indiana Fire Department ” 4-3). Hazards are associated with every type of rescue operation, such as tunnel vision which is when a firefighter focuses on a particular problem with out regard for possible consequences or alternative approaches to the situation.

It is very easy to get tunnel vision when a firefighter is involved in a complex rescue. In many cases, tunnel vision can keep rescuers from seeing an obvious solution or, more often impending danger. “ Indiana fire department ” 4-3 Other hazards that can happen during rescue operations are structural collapses were the building will give way and sometime firefighters can fall hundreds of feet, the greatest example rescue operation hazards would be September 11, 2001 when 343 firefighters lost there lives trying to rescue

thousand of people when both towers gave way and killed hundreds of firefighters and civilians.

One of the most dangerous rescue operations faced by firefighters today is the search of a burning structure (“ Indiana fire department ” 4-3). While searching burning building firefighters must work in teams of two or more when entering an involved structure, or a structure that is fully engulfed in flames, a minimum of two fully equipped firefighters and a charged hose line should be ready to go in and assist the team with any problem, this is known as the two in/ two out rule (“ Indiana fire department ” 4-3). In some situations the two in/ two out rule has saved some rescue teams from some near death situations, for example say a ouse is burning and the rescue team comes to a room inside and they have spotted back draft conditions a two man hose team can come extinguish the flames so that the rescue team can proceed with there search for the missing victims. Search and rescue teams are the most advanced teams when it comes to equipment, when conducting any search firefighters should carry a forcible entry tool, a flash light, and a radio (“ Indiana fire department ” 4-3). Most rescue teams also use thermal imaging cameras or (T. I. C) which will give an approximate temperature of the fire and will provide an outline of any object that is radiating heat on the screen.

Rescue teams will also have to wear a self contained breathing apparatus, or (SCBA), according to NFA 1975 a firefighter must wear an SCBA when in an environment with less than 19. 5 % oxygen if the firefighter dose refuse to wear the SCBA he will suffer severe lung and heart damage and in some cases could even die or collapse during a fire. In the world of technical

rescue there are two different types of searches the Primary search, and the secondary search, these two searches are extremely dangerous. The primary search is the first and most dangerous of the two searches.

It is a quick attempt to locate any potential victims who are injured or in danger (" Indiana fire department " 4-3). The primary search should be as thorough as time and conditions permit (" Indiana fire department " 4-3). The search teams are sometimes ahead of the hose lines which means that they do not have a hose with them if a room that they enter flashes over which could be an immediate danger to the search teams life or health. The secondary search is conducted after the fire is out or under control it consists of search mainly for any survivors or bodies (" Indiana fire department " 4-3).

This is a more thorough search as the immediate threat of a fire flashing over is eliminated during the secondary search, areas that still need to be extinguished may be found. Rescue operations are one of the most dangerous operations on a fire scene because some rescue teams are going in before the hose lines and are facing temperatures anywhere from 100 degrees to 2500 degrees which means that any injuries to a firefighter is very serious (Leland Fire and Rescue). Some injuries that can occur during a rescue operation are, burns, cuts abrasions, eye injuries, collapses, and even as serious as death.

Firefighters have one of the most dangerous jobs in the world, which is why training is one of the most important task a firefighter performs during his day, even with all the training involved in search and rescue firefighter are still dying everyday from any number of things such as structural collapses,

flashovers, and back drafts, but the most common way firefighters are killed is oxygen deficiency, elevated temperatures, smoke, and also toxic atmospheres (Leland Fire and Rescue).

Victims are the main priority in a rescue operation however some of the time rescuers do not arrive on scene quick enough and some time fatalities occur because of it. In 2009 rescuers of the Leominster fire and rescue in Leominster, Massachusetts arrived to an apartment fire and immediately a rescue team initiated a primary search and saved a 13 year old girl but could not find her 16 year-old brother passed out on the bed “ The bed was next to the window. We couldn’t see a hand in front of my face.

It was that black in there, the smoke was right to the floor. ” said firefighter Scott LaPrade(“ The Boston Channel”). Victims are the main priority in any emergency situation especially in any type of search and rescue whether a firefighter or a civilian, to make search and rescue more efficient fire departments have developed search patterns such as the conventional right/left hand search, PASS device assisted search, Radio assisted search, rope assisted search, and a thermal imaging camera assisted search.

A conventional right/left hand search is used when a firefighter is blinded by smoke or lack of light and cannot see, the firefighter will use the right or the left hand to feel their way around the room or sweep it across the floor to find a victim the lead firefighter will keep constant communication during the search. A firefighter has a device called a personal alert safety system, or PASS, the PASS device is used if a firefighter is injured or has a low amount of air in his air pack.

If the PASS device is triggered whether it be manually or automatically it will provide a bombastic noise to alert any rescuers that are passing or to aid rescuers to find the downed firefighters position. When searching through a structure with an activated PASS system a search team will be able to move through the structure more efficiently. The basic concept of this search pattern is that a team listens and moves toward the activated PASS device (McCormack).

Another search pattern would be a radio assisted search which can be used for a downed or injured firefighter if the missing firefighter is equipped with a radio and the radio is turned on or the firefighter is conscious it may be possible to radio him and find out key elements of his condition such as how much air the firefighter has left or if he is hurt or entrapped by debris also the incident commander can have the firefighter describe his location and see if you the search team locate him quicker. (McCormack)

Rescue ropes and hoses can also be used as a rescue tool say a child is trapped on the second floor of a house but no one knows where and suddenly a firefighter sees a rope roll out the window the incident commander now has a fixed location of where the entrapped child is. Hose lines are also a useful tool in searching for downed fireman, if a rescue team knows that the injured firefighters were on an attack line (hose line) then the team can follow the hose line until they reach the nozzle which would be where the downed firefighters would be.

Firefighters have a device that is specifically used for search and rescue this device is known amongst fire fighters as a T. I. C but to civilians it is known

as a Thermal Imaging Camera, this device uses thermal imaging software to see images with large amounts of heat through the smoke which will increase the time a firefighter can reach civilians or another injured firefighter. McCormack) Firefighters must learn how to be able to operate in a hostile or dangerous situations, which means they must learn how to use an SCBA and a PASS device, they must learn the fundamentals of their Personal Protective Ensemble, and they also must learn how to perform a search size up. An SCBA and a PASS device are usually connected a SCBA is used to assist a firefighter in breathing fresh air instead of being blinded and choked by the lack of oxygen and visibility in a burning structure.

The PASS device is connected to the SCBA and has the amount of air left in the bottle displayed on the screen, also when the SCBA air tank becomes low the PASS device will start beeping and the bell on the firefighters SCBA will start ringing, when this happens it usually means a firefighter has an average of 500 psi or 5 minutes to exit the building. (Leland Fire and Rescue) There are many components to the Personal Protective Ensemble such as the turn out coat, bunker pants, boots, helmet, eye protection or SCBA mask, and a nomex hood. The turnout coat is a 3-layer heavy kevlar material with reflective trim around the coat.

There are 3 layers of any NFPA approved turnout coat the outershell, the moisture barrier, and the heat barrier. The outershell is meant to protect a firefighters body from cuts and abrasions. The moisture barrier harnesses the sweat of the firefighter to cool him off, but when the sweat turns into steam the firefighter will start to become steam burned. The last layer is the thermal barrier this layer of the turn out coat is used to protect the firefighter

fighter from the extreme temperatures such as the average temperature of 1250 degrees which a firefighter would encounter when they are searching a burning structure.

The bunker pants are made from the same material as the turnout coat and also has the same three layers, the pants are held to the body by suspenders or belt. A firefighters boots are a very important part of the PPE, they protect a firefighters feet from cuts and abrasions burns and punctures. The boots of a firefighter are made of either rubber or leather, the boots are required by the NFPA to have a steel toe and also a steel shank to protect the wearers foot if anything is dropped on the toe or if something punctures the bottom of the boot. Leland Fire and Rescue) The most iconic image of a fire fighter is a firemans helmet. Along with being stylish the helmet is actually used to protect the head of a fireman if he falls or something falls on him. The helmet componets are the inner shell, the long bill in the back, and the leather front. The inner shell is composed of the shock absorber which will take all the power of a fall. The long bill in the back will help a fire fighter so that when he is using the hose scalding water and hot ash does not burn the neck of the firefighter.

Also the leather front shows who firefighters are with at the fire the leather front will usually include thier department name, station or truck number, job assignment such as firefighter, rescue, or EMT, and the helmet will also include the last name of the firefighter (Leland Fire and Rescue). According to NFPA 1975 all firefighter must have some form of eye protection when not wearing an SCBA mask some appropriate eye protection could be saftey goggles or safety glasses. An SCBA mask can be used as a firefighters eye

protection as long as the mask covers all of the firefighter's face. (Leland Fire and Rescue) When wearing an SCBA a firefighter is required to wear a protective hood which will provide the full head protection from burns and cuts, it will also provide an extra seal for your SCBA mask. The protective hood is made from only two things: Nomex or charcoal because those two materials will not absorb liquid (Leland Fire and Rescue). A firefighter to be on a technical rescue team must know how to perform a search size up when they arrive on scene of any type of rescue, for an experienced this should take no more than a minute.

A search size up is when a search and rescue team each look at a way to rescue a victim or a way to perform a search for victims (McCormack). When a firefighter has found a victim he must find some way to remove him/her from the burning structure. Before the victim can be moved, the search team must be sure the victim is in the proper condition to be moved by performing a very quick check over your body, then after the search team has checked the victim out they will decide whether to carry or drag the victim usually carrying will only be used on smaller people.

To drag a victim out a firefighter will cross their arms, put his arms under the armpits of the victim, and proceed to pull him/her out. When a firefighter is removing a victim there are only certain places a firefighter can go to have the victim exit the burning structure, the most preferred route would be the way the search team came in, but in a burning structure, circumstances change such as the stair; or the roof could collapse a victim can be removed by a ladder truck through the window of a burning structure or can be removed by another exit of the burning structure. (McCormack) Firefighters are a

persons lifeline to safety when their home catches fire, but what happens when a firefighter is trapped and can't get out of a situation or when he is injured while trying to save another human life? The answer to that is a Rapid Intervention Team (R. I. T), which a fully geared team of skilled and trained firefighters, will immediately rush in to the last known position of the firefighter and search for him. It's said in the fire department that "you never leave a brother, you find him. Do whatever it takes.

Sacrifice your life for his. You never leave a brother to the deep clutches of death" (Ladder 49). Firefighting is not a job for some it is a way of life. A Rapid Intervention Team (R. I. T) is only activated when a "mayday" is issued. A "mayday" is a call for help when any type of mayday is issued all radio traffic will end and only the incident commander will try and communicate with the downed firefighter, if possible, to find a fixed location on where the firefighter is. There are two types of maydays a PASS activated mayday and a radio activated mayday.

The PASS activated mayday is activated when the incident commander is told by a firefighter that a firefighter's PASS device is going off if the incident commander tries to reach the firefighter with no response he will activate a mayday and will send the fully geared up R. I. T team inside to find the injured firefighter. The second type of mayday is a radio activated mayday, where an injured firefighter says mayday mayday in to the radio, all radio traffic will stop and the incident commander will find the approximate location of the firefighter and will send in the fully geared up R. I. T team. "Indiana fire department" 4-3) Once a firefighter is found, there are only two ways they can remove him from his position; the Rapid Intervention Team

can drag him or carry him. The new NFPA turnout coats now have to come with a device that will allow firefighters to drag any firefighter out of a burning situation, or a firefighter could perform a tool drag were the firefighter will place a tool inbetween the SCBA belt and the turnout coat, then they will secure it and start to pull and check the tool to make sure that the tool will not slip and possibly further injure the firefighter (“Indiana fire department ” 4-3).

Search and rescue is not just in the space of a burning building but also if a car falls off a cliff but the driver is still on the cliff. Firefighters would use high angle rope rescue to rescue the driver. High angle rope rescue is used in situations that involve a firefighter being supported by a rope to rescue a victim from any type of danger whether it be a building ledge or a cliff . There are many specifics to rope rescue such as ropes and knots, anchors, mechanical advantage, rappelling and ascending, belay, mainlines, and tower rescue lead lines.

Ropes and knots are one of the main components to high angle rope rescue because a rescuer can not use high angle rescue equipment with out ropes and the knots on a rope rescue call must be perfect or else the knot could come loose and not support the weight of the rescuer and his victim and will cause the victim or the rescuer to either fall or become in a dangerous situation that could lead to death.

Anchors are people who sit down and control the rope speed for the rescuer and they hold all of the weight of the rescuer as he descends to the victim and the anchor will also help pull the rescuer and the victim up and back

over the wall or cliff . Mechanical advantage is the use of pulley systems and how to instead of use human anchors to use a direct system of pulley to support the weight of a victim and a rescuer.

A belay is the main person who is spotting the rescuer and is the rescuers life line if the anchor or mechanical advantage fail this will ensure that there is another way to help secure the rescuer into place the belay will also control rope speed if needed. The mainline is the line that is directly supporting the rescuer.

Rope systems are how a rescue team would set up the ropes depending on how steep the drop is to the victim and also it will calculate how much slack is needed to bring up the rescuer and victim. Tower lead lines are used when a firefighter has to go over the side of a building because the concrete will wear off cliff side ropes and could cause the fire fighter to fall and die (Shoreline Fire Rescue). Why is there only a select few brave men and woman that run into burning buildings when everyone is running out ?

Courage, dedication , honor , and passion for the most dangerous job a person can hold, which is the title of rescue technician a person holding that title shows that they are willing to risk their life to save another in any situation, whether it be high angel rescue, confined space, water rescue, or even saving a fellow firefighter who was injured during the line of duty there is no doubt about it. The bravest of the brave are the rescue technicians.