Manual on Community Search and rescuE

EUROPEAN COMMISSION
Humanitarian Aid

DFID Department for International Development

adpc

UNDP Myanmar

Scope of the Manual

This Manual is targeted to community volunteers who have been trained in basic search and rescue. It will assist the community to undertake basic search and rescue using locally available resources.

FOREWORD

The Cyclone Nargis of 2008 has been by far the most natural disaster in the history of Myanmar. It has brought into focus the extremely high vulnerabilities of the communities to natural hazards. This has also highlighted the need of a concerted effort towards disaster risk reduction especially at the community level focusing not only on the preparedness and response but also on prevention and mitigation measures.

Historically Myanmar is prone to multi hazards-cyclone, flood, drought, tsunami and seasonal fire. The cyclone Nargis has given an opportunity to focus on a comprehensive disaster risk reduction programme in the delta and up scaling it to other hazard prone locations of the country.

In any disaster situations the community is the first responder and the first few hours it is the community who responds to any eventualities through their existing coping mechanisms. Thus it is important that the Community Based Disaster Preparedness (CBDP) is the core and key of any Disaster Risk Reduction initiatives taken up at any level by any organizations or individuals. As the community is well informed and acquainted about the local geo-physical locations, safe evacuation routes, existing strengths and weaknesses within itself, thus the entire initiatives of Disaster Risk Reduction revolves around effective community response and preparedness measures. It can only be possible through full participation and contribution of the community in the decision-making process and leading in this initiative to achieve the real objective of the community based preparedness and effective response.

Thus there is a strong need to build the community resilience to various disasters and build their capacities and provide them technical know how in order to effectively respond to any disaster in a more scientific and organized manner. This can only be achieved through community based risk assessments, resource mapping and development of disaster preparedness and response plans through consultative process and identifying the key strengths and resources within the community.

I am pleased to mention that this manual is being developed through a consultative process including field testing and incorporating the inputs from the community members to make it more contextual to the ground. I am thankful to various UN Agencies, INGOs and Local NGOs and whole range of Disaster Risk Reduction working group members for contributing to this manual looking into the criticality of need of strengthening the community preparedness and making the response more organized and building on the coping mechanisms already present in the community. This manual will enable the community to come under one platform and plan to minimize the gaps and weaknesses and build on the strengths and strive for a better and effective community based preparedness measure in order to save the valuable lives and livelihoods of the vulnerable communities. This will also guide the communities for imbibing the skills and techniques of disaster preparedness.

I hope this manual will help and guide various DRR practitioners, communities and various other DRR stakeholders for building a disaster resilient community and strive for a disaster free tomorrow.

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Chapter 1

Introduction to Community Search and Rescue

1.1 Background

Myanmar is prone to multiple hazards including earthquake, cyclone, fire, floods and landslide. These disasters lead to not only loss of human lives, but also livestock, property, etc. The devastating Cyclone Nargis of 2008 led to the loss of 84,537 human lives, 53,836 persons missing and damage to property to the tune of approximately 4.1 billion USD.

Training on knots

In all disasters, across the globe including Myanmar, community is the first responder and they contribute significantly in the search and rescue activities. Community includes neighbours, relatives, friends, co-workers, teachers, youths, volunteers, etc. Considering this fact, it is important to train and build the capacity of the first responder i.e. Community.

1.2 What is Search and Rescue

There are several definitions of Search and Rescue (SAR). Wikipedia defines it as an operation conducted by emergency services, often well trained volunteers, to find someone believed to be in disasters, lost, sick or injured either in a remote or difficult to access area, such as mountain, desert or forest or water body.

For this manual 'Those activities directed at locating endangered persons at an emergency incident, removing those persons from danger,

treating the injured, and providing for transport to an appropriate health care facility'[1] has been used.

1.3 Why Community Search and Rescue

The capacity building of the community on search and rescue is important due to the following reasons:

(i) The first hour in the aftermath of a disaster: called 'Golden Hour' during which the survival of victims is the highest.

(ii) During disasters, family members, neighbours, co-workers, etc. will spontaneously try to help each other. Hence it is important to build the capacity of community as untrained responder can do more harm. For example, in Mexico[2] earthquake untrained volunteers saved 800 lives. However, 100 people lost their lives while attempting to save others, which could have been prevented or reduced, if community would have been trained.

(iii) In post-disaster situation, the scale of search and rescue is very high and it is difficult to meet this demand by professional search and rescue team in limited duration.

(iv) Sometimes disasters lead to the blockage of road, the failure of communication, etc. Hence response of Fire Services personnel can be delayed.

(v) In disaster, many affected people require the basic search and rescue than the advanced search and rescue.

(vi) Capacity building of community on search and rescue or other disaster management related activities give the message to the community regarding their roles and responsibilities in mitigation and preparedness.

(vii) The trained Search and Rescue Community can function as an extended arm of the Fire Services Department.

[1] National Fire Protection Association, United States of America
[2] Community Emergence Response Team

1.4 Basic Equipment Needed

In most cases, communities will have to manage with equipment that is readily available locally. However, following basic resources and equipment can be useful for Search and Rescue operation:

- Ladders
- Ropes
- Spades (shovels)
- Picks
- Crowbars
- Axes
- Steel tubes
- Wooden planks
- Buckles
- Hose pipes
- Heavy gloves
- Thick pieces of cloth and blankets
- Torches
- First Aid box
- Pulley
- Bamboo
- Life buoy
- Life jackets
- Boats

1.5 Scope and objective of the Manual

First Aid is an integral part of the search and rescue as in some cases first aid is given to victim before shifting for other medical treatment. Though this manual includes the community first aid in brief, it is suggested that this manual should be used in conjunction with the *Community First Aid Manual*. The manual is targeted to community volunteer who has been trained in basic search and rescue. It will assist of the community to better preparedness and undertake basic search and

rescue using locally available resources. The manual aims to help the community to understand the concept and application of basic search and rescue tools. It can also be used as a reference document on community search and rescue training.

1.6 Introduction to the Manual

The manual includes 13 chapters.

Chapter 1 'Introduction to Community Search and Rescue' gives rationale, scope and basics of the community Search and Rescue manual.

Chapter 2 'Basic Principles and Key Steps' includes principles, key steps and considerations of Search and Rescue.

Chapter 3 'Water Rescue' includes principles and steps involved in water rescue. It also includes usage of local resources for water rescue.

Chapter 4 'Rescue from Electric/ Live Wires' covers key considerations and how to rescue in context of electrocution.

Chapter 5 'Fire: Community Search and Rescue' includes broad category of fire, usage of fire extinguisher and other fire fighting techniques.

Chapter 6 'Basic Search and Rescue: Collapsed Structure' explains box cribbing and leveraging techniques for rescue.

Chapter 7 'Landslides: Community Search and Rescue' includes basic safety measures in landslide.

Chapter 8 'Rope Rescue: Knots' includes types of knots and its usage.

Chapter 9 'Rope Rescue: Pulleys' captures the steps involved in making a pulley.

Chapter 10 'Rescue from Height' includes a few basic techniques for rescue from height.

Chapter 11 'Stretchers' explains types and methods of preparing stretcher.

Chapter 12 'Transportation/ Shifting of Victims' includes methods to shift a victim.

Chapter 13 'Basic First Aid' includes selected basic first aid techniques.

Chapter 2

Basic Principles and Key Steps

2.1 Primary principles of search and rescue

The primary principles of search and rescue are as follows:

- Maintain rescuer safety at all times.
- Rescue the greatest number of people in the shortest amount of time.
- Rescue the lightly trapped victims first.

2.2 The Three Basic Key Steps of Search and Rescue

Search and rescue consists of three different steps that must be planned carefully and practiced in advance.

Step 1: Size up – involves assessing the situation and determining what one is going to do and if yes, then how. The decision whether to attempt a rescue should be based on:

- The risks involved.
- Achievement of the overall goal of doing the greatest good for the greatest number.

Step 2: Search – involves locating victims and documenting their location.

Step 3: Rescue – involves the procedures and methods of extricating and moving victims to safety.

Tips 1

Use hand whenever possible for search. Spades to be used cautiously to avoid inadvertently injuring a casualty.

2.3 Key considerations

Survey the site: At the disaster site, there are chances of fire, hanging electric wire, falling objects, etc. which are threat to rescuer, victim as well as by standers. It is important to consider the followings.

(i) What has happened, what is occurring and what is likely to happen.

(ii) Bystanders at the scene can help rescuers by taking care of casualties, calling ambulance, Fire Services Department, Police Force or finding out anything available at the scene for rescuing causalities.

(iii) Rescuers should listen carefully the call for help such as scream, moan and cry of casualties.

(iv) Call the missing person by name or in case, rescuer doesn't know the name of missing person, call 'Is anybody there?' After call, wait for some time to get response before giving the next call.

(v) When search is at night, keep the lantern/lamp below waist level.

Tips 2

Rescuer should not become victim in a rescue operation.

Chapter 3

Water Rescue

Myanmar has a long coastline and a large number of water bodies such as rivers, ponds, lakes, etc. and is prone to flood and storm surge. During Cyclone Nargis of 2008, 95% of the deaths were due to the storm surge. Hence, water rescue is an important element of community search and rescue.

3.1 Drowning symptoms and sequence

Drowning is a silent killer. People who are drowning may not be able to call for help because they are using all their energy to breathe or to keep the head above the water. Furthermore, as water is introduced into the respiratory tract, the airway may go into a spasm, making it difficult to cry for help.

Be alert for signs which indicate that someone may be in trouble.

- A person in the water flailing his or her arms
- Displaying uneven swimming motions
- Lying face down in the water
- Only the head showing above water with the mouth open

The drowning sequence

- First, the person panics or struggles followed by submersion with breath-holding.
- Loss of consciousness can begin within three minutes of being under water.
- The brain may suffer damage if it is deprived of oxygen for more than six minutes.
- The heart may go into an irregular rhythm that doesn't allow the heart to pump blood, if it too is deprived of oxygen for more than a few minutes.

3.2 Key Considerations in water rescue

3.2.1 Tidal Conditions

Some rivers, inlets and all estuaries are influenced by tides often at some distance from the coast. It is worth noting that the depth of water will sometimes change very rapidly. Ground that has dried out following a low tide can be rapidly flooded during high tide and care must be taken to avoid being cut off or isolated from exit points. The rate of flow can change from nil to rapid and the direction of the flow may reverse. These effects may occur over a very short time interval at least twice a day, and will vary from day to day.

3.2.2 Force of Water

The force of water exerted against an object is directly related to the speed of the flow. A flow of 1m per second exerts a force of almost 8kgs on a person's legs (in a depth of approximately 1 meter). If the flow doubles to 2m per second the force quadruples to 32kgs.

Double the water speed = quadruple the force

Tips 3

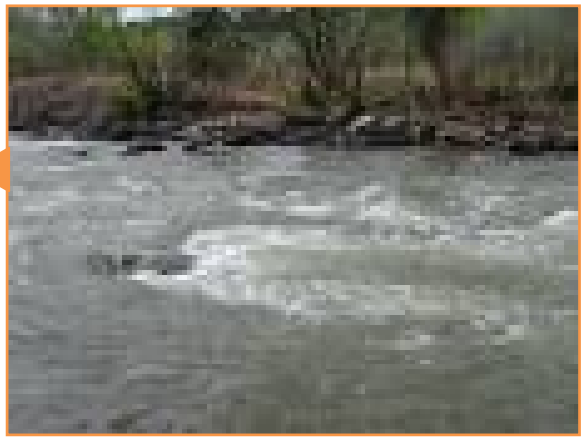
Standing in even shallow fast flowing water is extremely dangerous!

3.2.3 Temperature

- In cold water, irrespective of air temperature, a good strong swimmer can quickly be reduced to a non-swimmer because of the effects of immersion hypothermia.
- The depth of water will affect the temperature, as the water becomes deeper it will be much colder.
- In such temperatures, survival time may be as little as 2 minutes and death by drowning is a likely consequence. For comparison purposes, swimming pools temperatures are approximately 24-28^{o}C.

3.2.4 Eddies

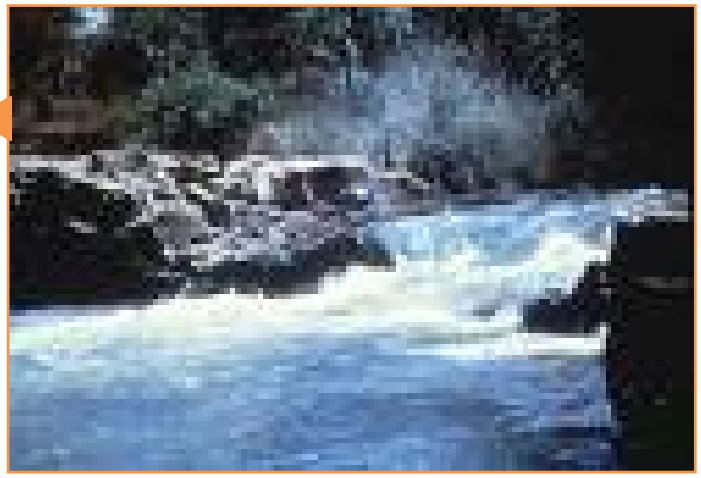
Where water flows around an obstacle, such as a boulder or car, the area behind the obstacle is usually calm water or may possibly be flowing back upstream.



This can provide a good area for a swimmer to rest or to bring a casualty ashore. However, in fast flowing rivers with a high volume of water, the current in the eddy can be fast flowing and turbulent.

3.2.5 Weirs/Stoppers

Weirs have fast flowing water, dangerous currents, erosion, changing levels and possible undertows. Some weirs have a series of large blocks or stones at the bottom of the weir drop to break the flow of water to reduce the amount of erosion due to the water flow.



All personnel are advised to be especially cautious when working near a weir or stopper.

The hazards presented by these currents to a person in the water are that they will be drawn upstream and then forced under the surface, to be flushed out further downstream.

3.2.6 Other Hazards Associated with a Water Rescue

- The river banks may be quite slippery and rescuer may slip.
- Be aware of the action of by standers.
- The victims may be in panic.
- Dusk might be approaching and there might be inadequate light.
- There might be debris, fallen trees, and sharp objects in the water.

3.3 How to do water rescue

3.3.1 Reach

- This is the safest method of helping a victim get out of water but has limited application due to the fact that the victim must be in close range to the rescuer. Reach with a bamboo, rope, clothes, etc.
- It is important to crouch down low or lie flat with the ground to prevent being pulled in.

3.3.2 Wade

- Test the depth of the water with a long stick or equivalent before wading in and then use the stick to reach out.
- Always try to hold the bank or something which can prevent you falling in.

3.3.3 Throw

- A rope is the best here, using a rope means you can pull the victim back to the shore or back to the boat with relative ease.

- Otherwise throw an empty plastic gallon, a ball or other buoyant objects; this will help the victim keep afloat until further help comes.

3.3.4 Row

- If you're in a boat or have access to a nearby boat, use to oars to move the boat closer to the person in the water or call out to a nearby boat for help. It is important that you should consider to make allowances for the water conditions.

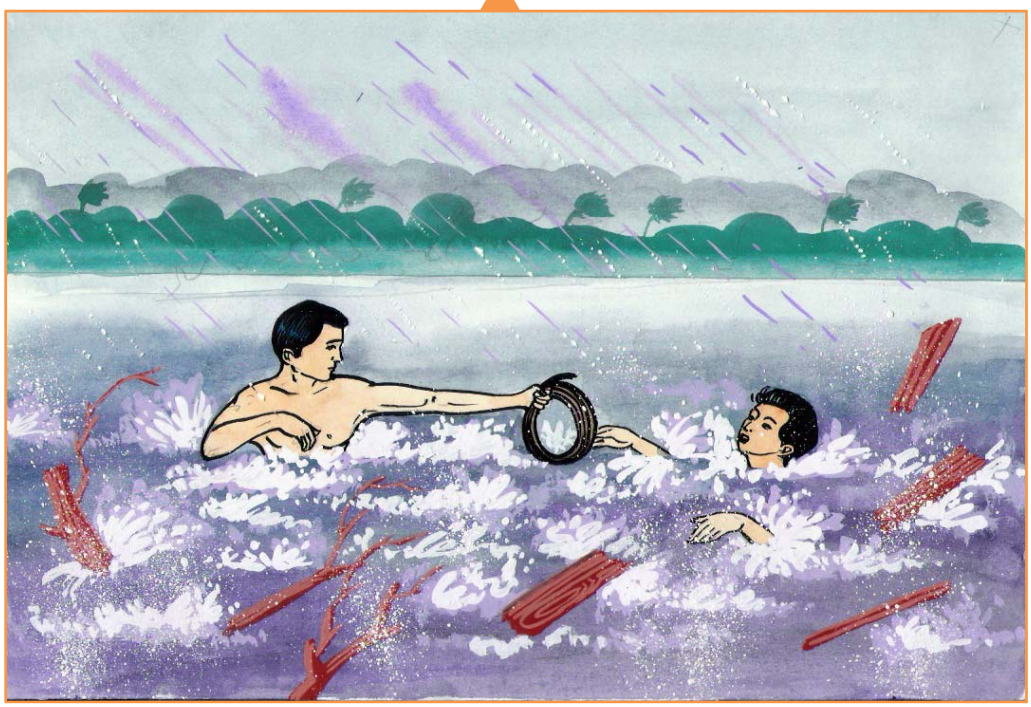
- Do not try to pull the victim on board in case of panic and capsize the boat. Instead pass a rope to the victim and tow the victim back to the shore. Don't use the boat's motor close to a person in the water, as he can be injured by the propeller.

3.3.5 Swimming and Towing

- Use of swimming to rescue a victim from water is extremely dangerous; hence, utmost care is important. Currents below the

surface and extremely cold water can take over even the most competent swimmers.

- Towing requires a rescuer to be an extremely strong swimmer and must not be attempted by anyone who is not. If conscious you can ask the victim to hold the rope or vine while you swim him back to the shore or the nearest safe point. If the victim is unconscious you may need to tie the victim to yourself.



- Don't swim alone. You may need someone to rescue you.
- If in any doubt wear something which will keep you afloat such as a bottle belt, life-buoys and life-jackets.

3.4 Floating devices using local resources

3.4.1 Plastic Bottle

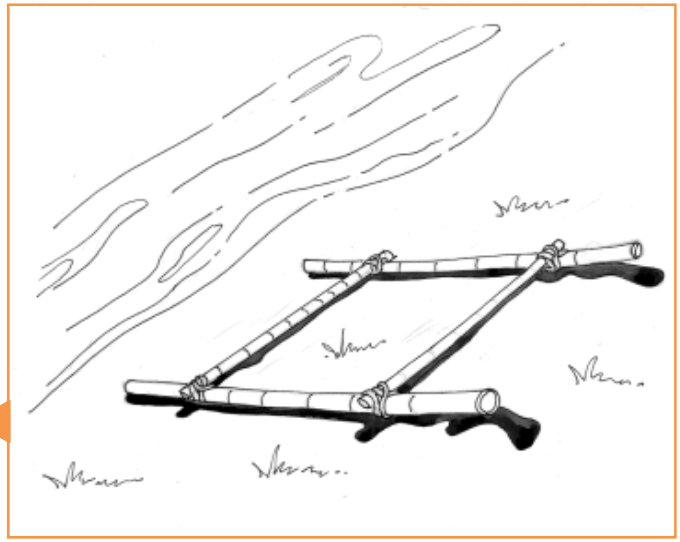
A set of plastic bottles can be used for floating. Gallons can also be used as floating device. The cap of plastic bottle or gallon should be tightly closed.

Bottle belt

Gallons for floating

3.4.2 Building a Raft

To build your raft, you'll just need a lot of wood and ropes/vines for lashing. Bamboo is the best thing to use for your raft. The hollow culms or stems of bamboo are filled with air, making it extremely buoyant.



Pierce the lower culms to

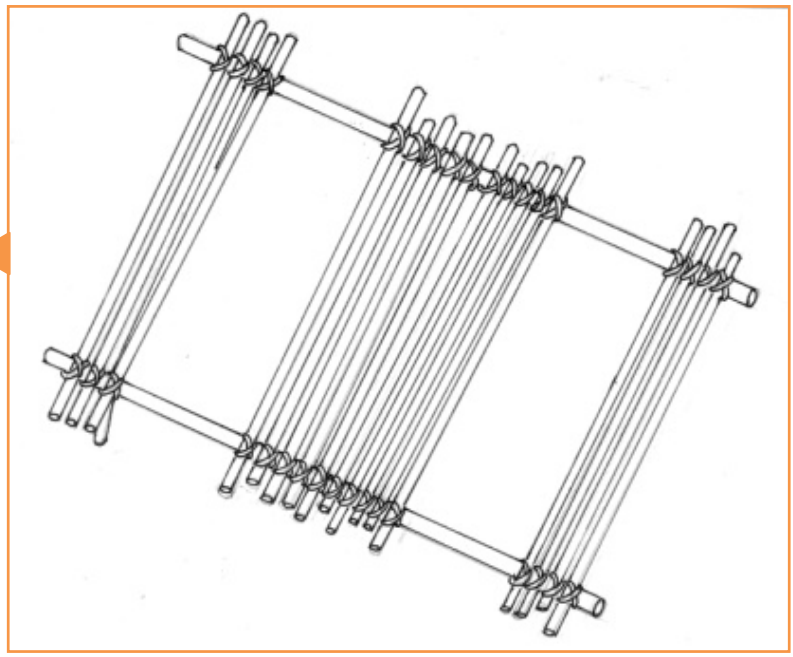
release the air and prevent an explosion.

Before you start construction, place two large bamboo trees on the ground about 8 feet apart. Build the raft on top of these to help slide it into the water as – it can be extremely heavy. You should also build it close enough to the water to get it in with ease, but not so close that it is in danger of floating away with high tide, etc.

Method:

Build your frame first:

Step 1: Get four large pieces of bamboo. One set should be roughly 8 feet long, the other 12 feet.



Step 2: Place the longer pieces in the bottom, then the shorter ones on top to form a square.

Step 3: The long pieces will extend from each side by 4 feet and act as stabilizing pontoons.

Step 4: Lash everything together tightly with ropes or vines.

Now that you have your frame, begin to make your floor and complete the pontoons:

Step 5: Secure smaller bamboo pieces side-by-side on top of the frame until it is completely covered.

Step 6: The four more bamboo sections to the far edges of the pontoons, spanning the length.

The most important thing to do now is to test the raft – get it in the water and climb aboard. If you have any doubts that the raft is unsafe, do not attempt to use it.

Chapter 4

Rescue from Electric/ Live Wires

Electrocution due to electric/ live wires leads to deaths and serious injury. Basic rescue techniques can save precious lives.

4.1 Consideration for Rescue

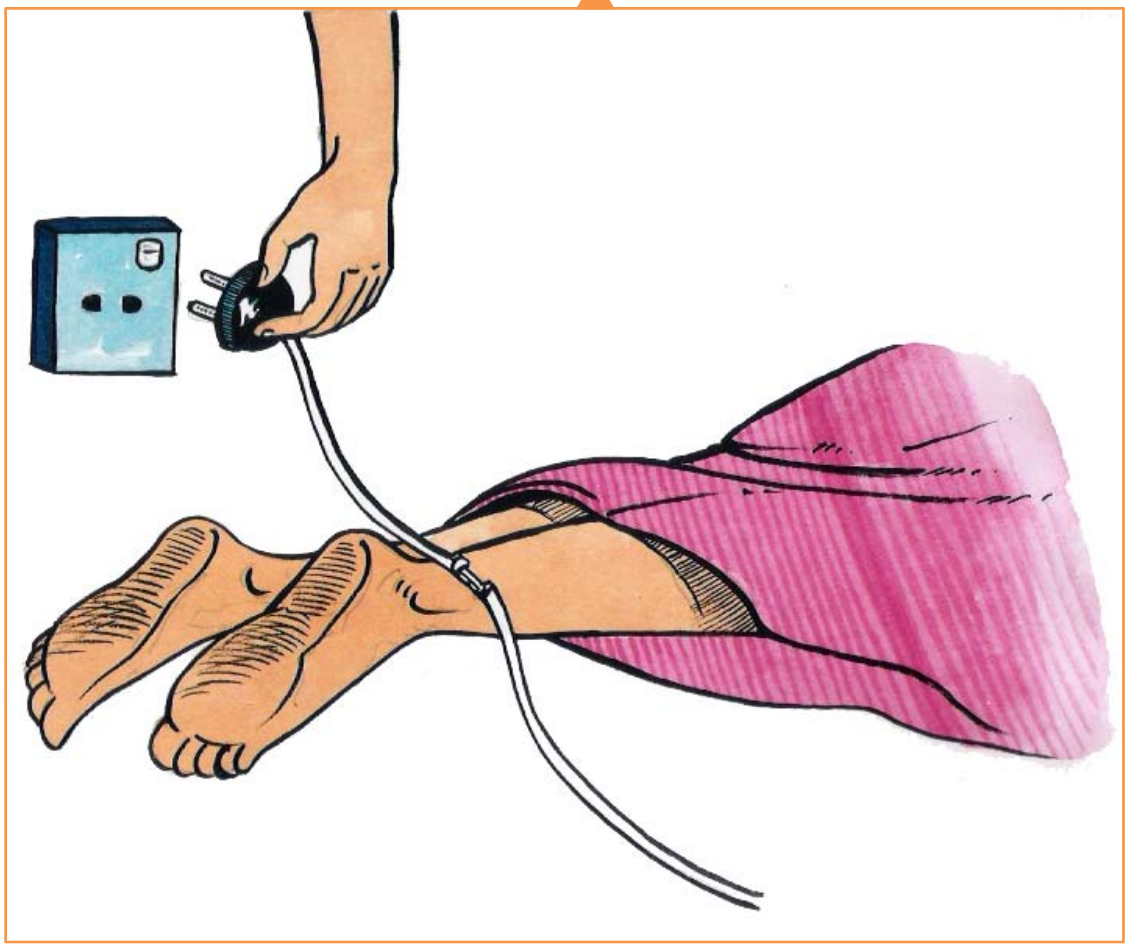
1. Assume all electric wires are 'live'. The fact that wires do not spark is no indication that they are dead.
2. Avoid any water close to live wires—they may be just as dangerous as the wires. Avoid all other conductors such as metal doors and wire fences that may be in contact with high voltage wires.
3. Switch off the supply to a damaged building at the main switch, normally located in the meter box. Remove and secure the fuses.
4. Step potential—electricity passes through the ground. If you are standing on the ground near a fallen power line, you would receive an electrical shock depending on the relative position of each foot compared to where the power line touches the ground.
5. DO NOT attempt to cut any electrical/ live wires.
6. Keep vehicles and personnel well clear of areas where wires are down.
7. Be particularly cautious at night when it is difficult to see wires.

4.2 How to Rescue

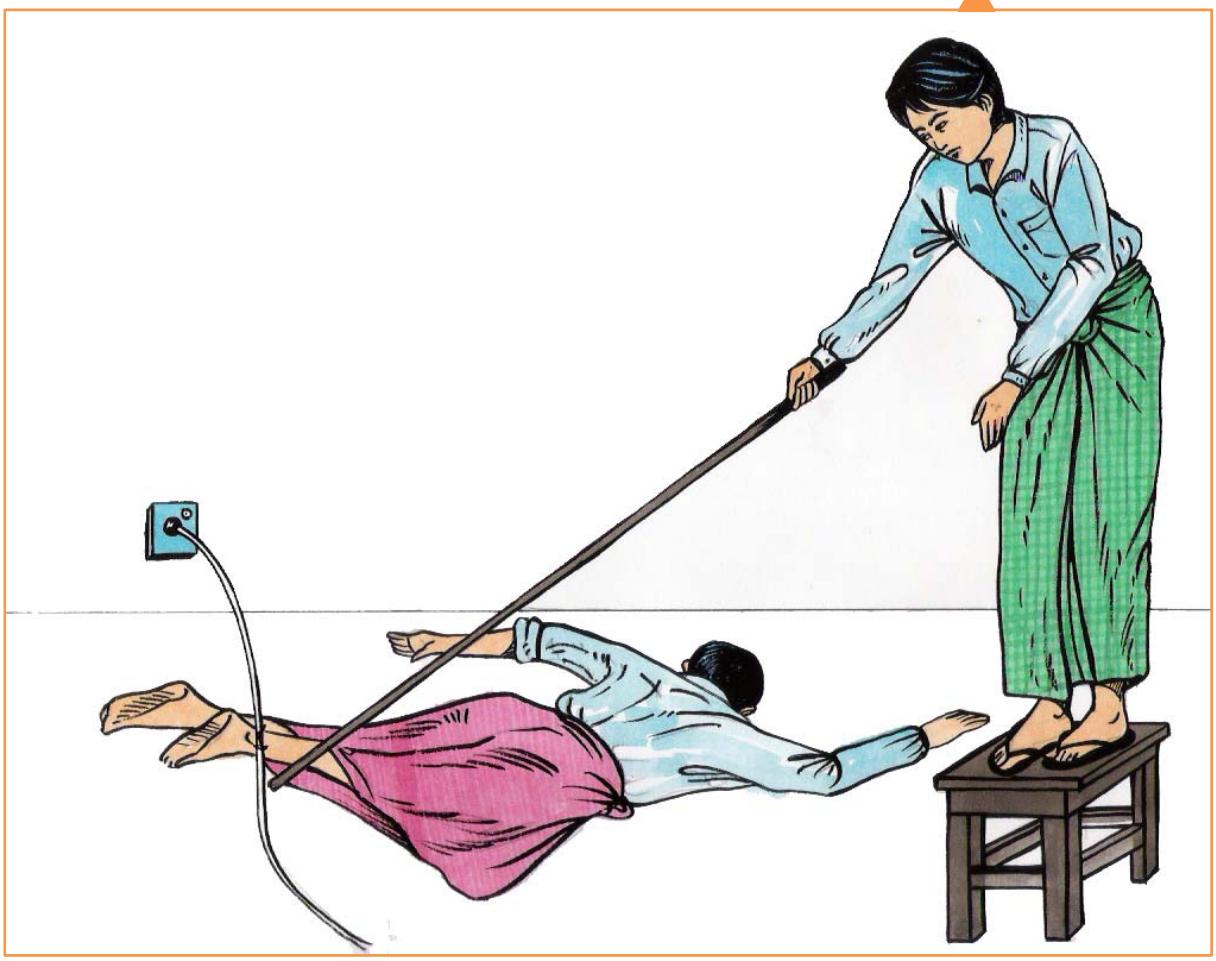
Before you attempt to rescue, it is necessary to turn off the power first or carefully set apart electric source from the casualty (see figures), this is crucial to avoid getting hurt yourself.

1. Discovery of danger.

2. Turn off the power immediately.
   Pull a male plug out of electric-hole (just contact on plastic objects) or turn off the main power.



3. If you can't turn off the source of electricity, you should push electric wire away from casualty as shown. You should stand on dried wood, thick papers or wear rubber shoes, use a dried wood (e.g. broom-stick, bamboo shoulder pole or roll of papers) then push electric wires out of the casualty.



Tips 4
Always look for dangerous electric power around you.

Chapter 5

Fire: Community Search and Rescue

Myanmar is highly prone to fires as it constitutes 70% of the disaster of Myanmar as per data from 1996 – 2005. January to May is the high reason for fires and average annual fire cases are approximately 900.

5.1 Basic Principles

The basic principles of community fire search and rescue are

- Only fight a fire or attempt a rescue if the fire is small and contained.
- If you are safe from toxic smoke.
- If you have means of escape.

5.2 Types of Fire

Fires have been classified into 5 categories and are categorized based upon the fuel.

- Type A = A fire that is burning from wood, rubbish, paper and other ordinary materials.
- Type B = Fires that involve flammable liquids such as gasoline, petrol and paint.
- Type C= Fires that involve electrical equipment, transformers and electrical appliances.
- Type D = Fires that are burning from combustible metals such as magnesium.
- Type K = Fires stemming from animal/ vegetable fats, etc.

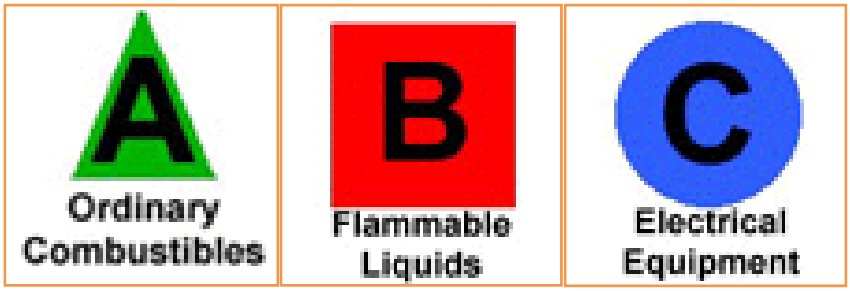
The stem of the fire determines how and what you can do to fight against it. Just as there are different types of fire, there are different types of fire extinguishers, the wrong choice can be ineffective, cause injury or make the fire worse.

Tips 5

Wrong choice of Fire extinguisher can be deadly.

5.3 Fire fighting using fire extinguishers

Fire extinguishers if used properly can be a very effective life saving tool. The fire extinguishers are of different types, hence, it is important to ensure that the right extinguisher is used. Check for following symbols on the label of fire extinguisher.



Extinguishing a fire at the source can limit damages and can make a rescue operation effective.

Types of fire extinguisher

Water extinguishers - The cheapest and most widely used fire extinguishers. Used for Class A fires. Not suitable for Class B (Liquid) fires, or where electricity is involved.

Foam extinguishers - More expensive than water, but more versatile. Used for Classes A and B fires. Foam spray extinguishers are not recommended for fires involving electricity, but are safer than water if inadvertently sprayed onto live electrical apparatus.

Carbon Dioxide - It is ideal for fires involving electrical apparatus, and will also extinguish class B liquid fires, but has NO POST FIRE SECURITY and the fire could re-ignite.

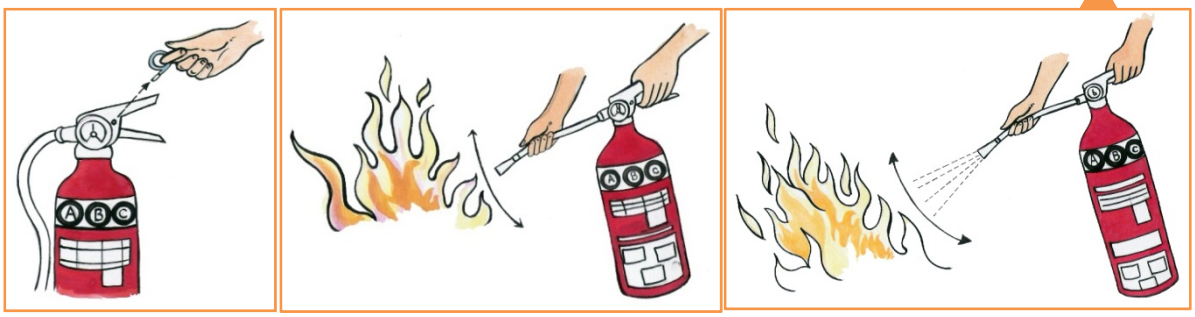
How to use a fire extinguisher properly

Remember **PASS**.

P - Pull the pin - The pin releases a locking mechanism and will allow you to discharge the extinguisher.

A - Aim at the base - not at the flames. This is important - in order to put out the fire, you must extinguish the fuel.

S - Squeeze the trigger - This will release the extinguishing agent in the extinguisher. If the handle is released, the discharge will stop.



S - Sweep from side to side - Using a sweeping motion, move the fire extinguisher back and forth until the fire is completely out. Operate the extinguisher from a safe distance, several feet away, and then move towards the fire once it starts to diminish. Be sure to read the instructions

on your fire extinguisher - different fire extinguishers recommend operating them from different distances.

Tips 6

Aim at the base of the fire, not at the flames!

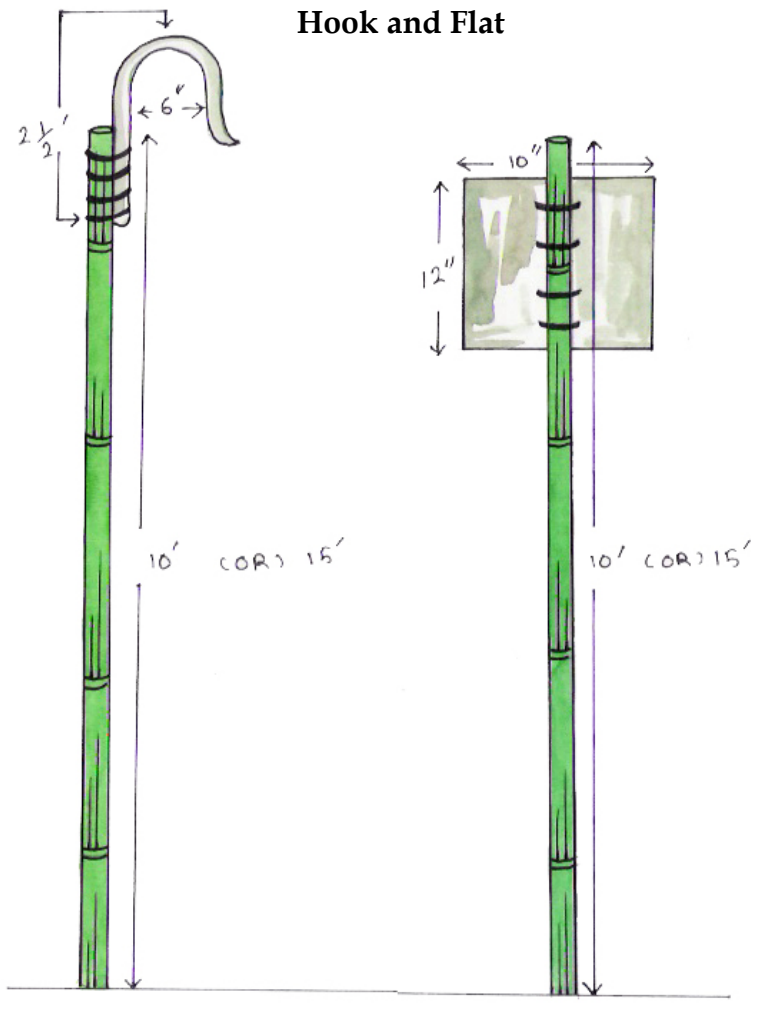
5.4 Traditional Fire Fighting techniques

Myanmar has developed a number of fire fighting techniques.

5.4.1 Hook and Flat

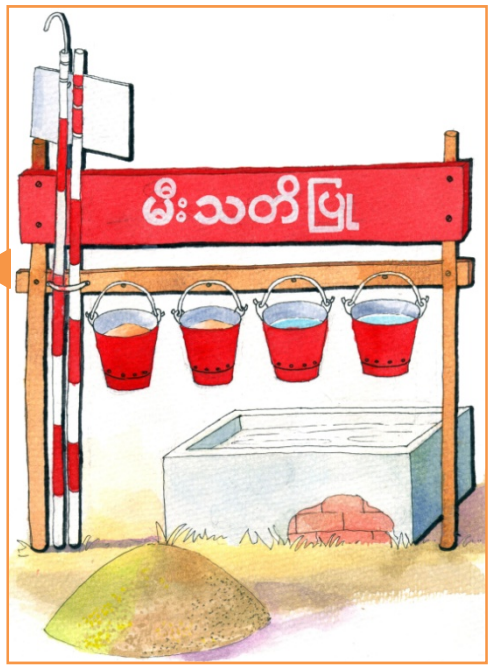
Hooks can be used for demolishing, shifting and removing an object. To make a hook, firmly tie a two and half feet long iron hook to a 10 to 15 feet long strong bamboo with copper wire. The width of the iron hook should be 6 to 6.5 inches.

Hook and Flat



5.4.2 Gunny bags, buckets and sand buckets

The gunny bags together with sand filled buckets can be used for fire fighting. These are easily available everywhere. Chopping hoe, pickaxe, shovel and rake can also be used for fire fighting.



5.4.3 Fire beater (Fire swatter)

It is a handy tool to fight fire. It can be made by tying at least five pieces of two and half feet long old PVC pipe with copper wire or by putting nails or by grasping the baskets at the top of three and half feet long stick or bamboo.

5.5 Other fire fighting techniques

- If your clothing catches fire, do not run. The air will fan the flames, and make them burn faster. Immediately drop to the ground and roll until the flames are smothered out.
- If you see another person on fire, wrap the person in a blanket, rug, drapery, towel or coat to smother the flame. If you have nothing to cover the person, grab them, drop to the ground, and roll them until the flames are smothered out.
- Try to remove the burned clothing but do not pull it over the head. If the clothing is stuck to the skin leave it alone. Seek medical attention immediately to treat the burns.

Chapter 6

Basic Search and Rescue: Collapsed Structure

Earthquake, Cyclone, Floods, landslide, etc. destroys structures, apart from precious lives. People are trapped below the fallen structures such as walls, doors, slabs, trees, cupboards, etc. and their condition will vary from minor injury to unconsciousness. The community search and rescue can save a number of injured people.

6.1 Key Considerations

- Damaged houses and other structures facilities should only be approached from the least dangerous side.
- When searching for casualties do NOT walk over rubble if not necessary, do NOT enter collapsed houses and other structures, do NOT walk or stay near badly damaged and collapse-prone structures.
- When entering a collapsed structure, leave 1 person outside for safety.
- While surveying indoor space in buildings, do NOT use open fire for lighting.
- Always check the ceiling when entering a room for hazards.
- Do NOT allow many people to gather in one spot, in shafts, or floors.
- Do NOT go near collapse-prone walls or other constructions.
- Move very carefully over structures ruins (only if it is necessary) as they are unstable heaps of unconnected fragments.
- When removing rubble from ruins, do NOT permit abrupt jerks, shaking, or strong blows at the site.
- When dismantling or clearing ruins, first drag away or extinguish any smoldering or burning objects.
- Open the doors of burning rooms very cautiously, be aware of possible flames or hot gas ejection.

- In burning spaces, move by bending low or else on your knees. Try to stay near windows, making it possible to get quickly out of the danger zone if needed.
- Large concentrations of carbon monoxide gas are possible in the basements of burning houses. Only enter these areas after a long period of ventilation.
- If there are electric power cables at the excavation site, use metal spades and picks very cautiously in order to avoid electrical shock.
- If an electrical cable is discovered, suspend it, in order to avoid further damage or tearing, do NOT step on cables.

6.2 Rescue using leveraging and Box Cribbing

There are commonly situations where debris will need to be moved in order to free victims. In these situations, rescuers should consider leveraging and cribbing to move and stabilize the debris until the rescue is complete.

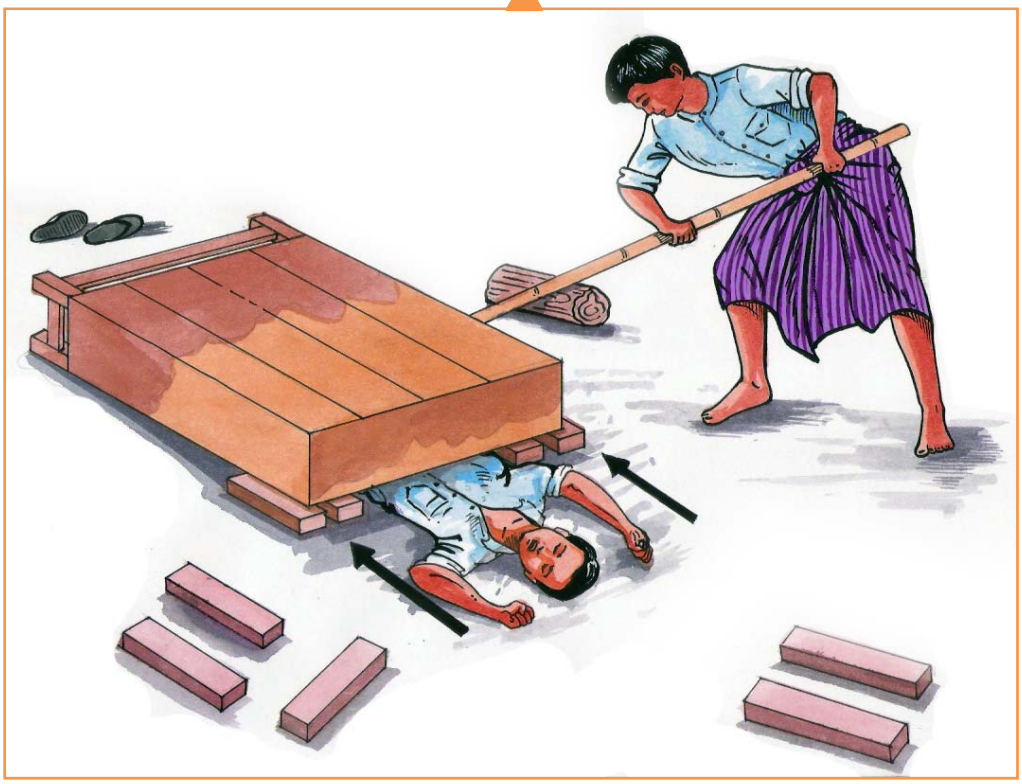
- Leveraging is accomplished by wedging a lever under the object that needs to be moved, with a stationary object underneath it to act as a fulcrum. When the lever is forced down over the fulcrum, the far end of the lever will lift the object.
- A crib is a wooden framework used for support or strengthening. Box cribbing means arranging pairs of wood pieces alternately to form a stable rectangle.

6.2.1 Leveraging

Lever Person: At the front edge of the collapsed wall and positioned so that he or she can position a fulcrum and lever under the wall.

Crib Persons: On either side of the collapsed wall and positioned to enable the placement of cribbing as the wall is raised with the lever.

Victim Removal Person: Next to the Crib Person who is closest to the victim's head.



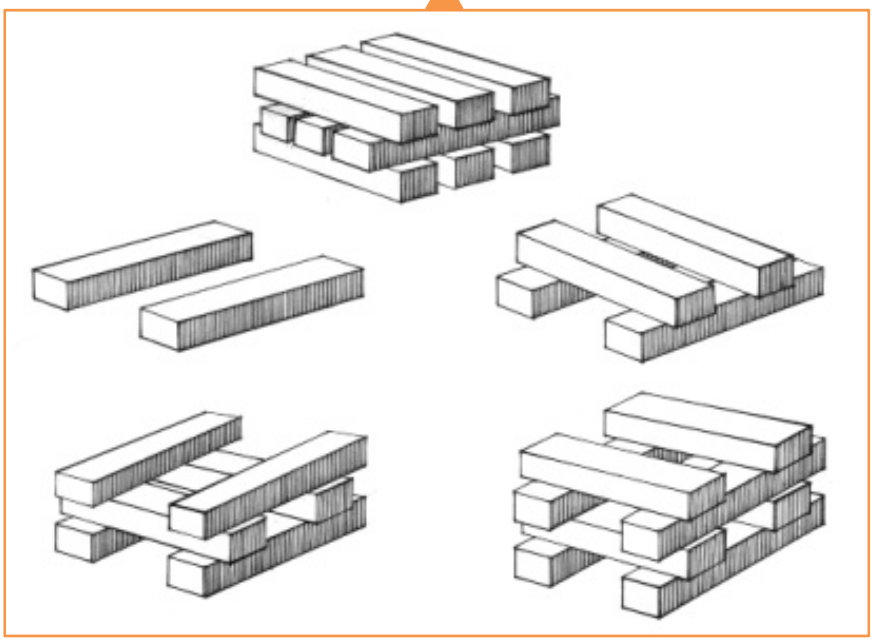
6.2.2 Box Cribbing

Four steps for building box cribbing:

Step 1: Position two pieces of wood parallel to each other on either side of the collapse.

Step 2: Place two pieces of wood perpendicularly across the base pieces.

Step 3-4:Add additional layers of wood with each perpendicular to the previous level.



Chapter 7

Landslides: Community Search and Rescue

Myanmar is prone to landslide of various scales especially the Western, Southern and Eastern Myanmar hilly regions. Community level preparedness including search and rescue is important.

7.1 Search and Rescue in Landslides

When there is warning to the local population about a landslide threat, evacuation of population, livestock and property to safe areas should be organised. The help of shock brigade volunteers is always necessary, especially for the elderly, children, disabled people, and for people who live far from others.

7.2 What should a community volunteer do?

- Warn everyone in the area about the danger.
- Direct people to the safe areas based on the most probable landslide or mudflow location and direction, the safest places are determined as mountain stops and hills, which are not predisposed to landslides.
- When going uphill to safe places, one should not follow valleys, gorges, or ditches, as these might become channels of the landslides.
- Help the ill, the elderly, the handicapped, children, and the weak along the way.

7.3 What to do if people are on a moving landslide?

- Leave building and move down hill.
- If the landslide slows down, be aware of rocks earthen masses, or other debris, still rolling down.
- Bear in mind that, at high speed, when the landslide finally stops, a strong jolt is possible.

- When landslides over, make sure there is no threat of second one and only after that, cautiously assist people back to their home.
- Immediately start search and rescue, draw casualties out, give them First Aid, and control possible secondary hazards such as fires.
- Send a message about what happened to the concerned authorities.

Chapter 8

Rope Rescue: Knots

8.1 Introduction to Knots

Rope is the backbone of the search and rescue operation. It is easily available and is of different types. It is one of the few tools/ aid in search and rescue which can be used without any other equipment/ aid.

Knots are integral part of the rescue for various purposes. Seven hundred knots have been invented over the years and a few are very useful in search and rescue.

Tips 7
All knots have a specific purpose and it is important to use right knot at the right time.

Rescue personnel or volunteer should be familiar with the following knots and by constant practice can learn how to make them with speed and proficiency. Knots must always be tied tightly, and inspected before use. As a good rule of thumb, any knot that does not look neat and correct is almost certainly incorrectly tied.

Knots almost always lower the strength of a rope, sometimes by 25%, 50%, or more.

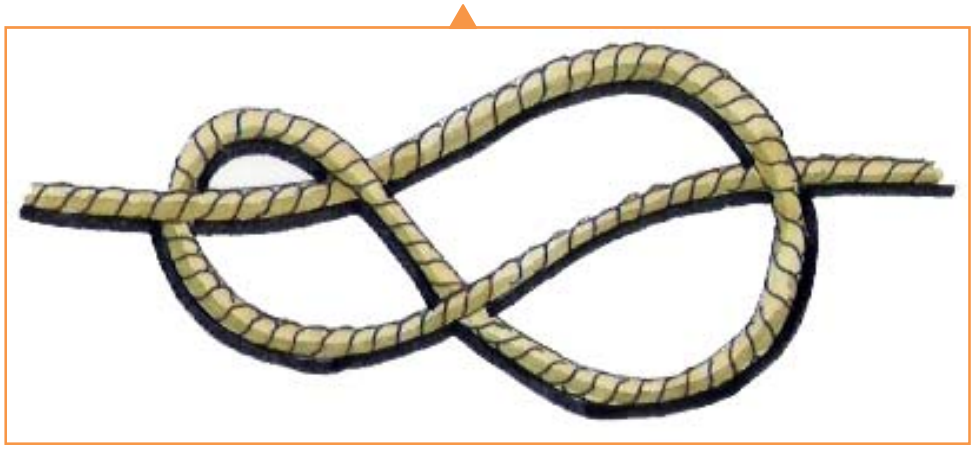
8.2 Types of knots and its usage

8.2.1 Over Hand knot

It is used as a simple stopper and tied at each end in lengths of burst hose when laid out.

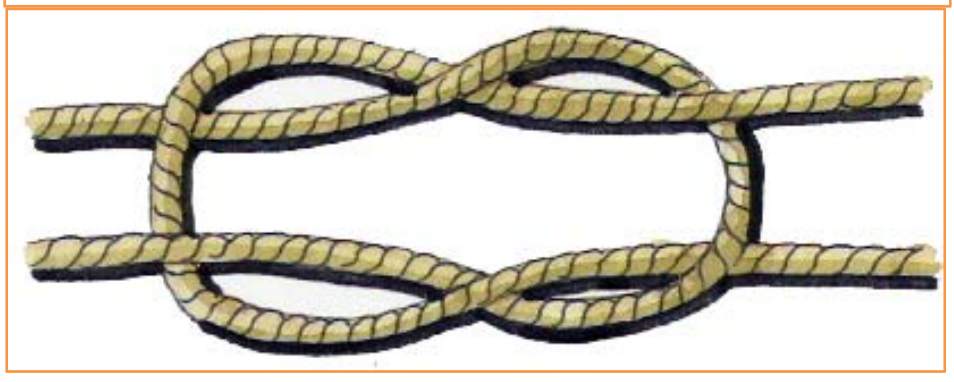
8.2.2 Eight knot

It is used as a stopper and to prevent a line running through a sheave.



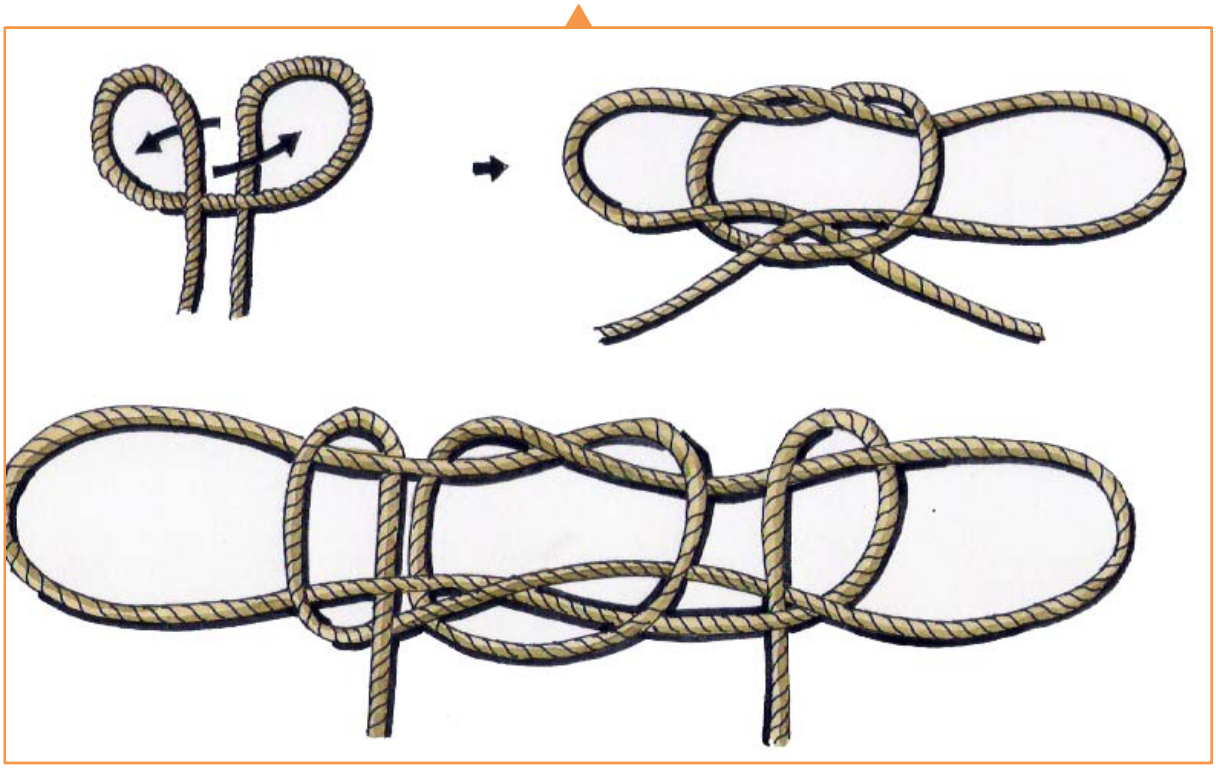
8.2.3 Reef knot

It is used to join two lines of equal thickness.



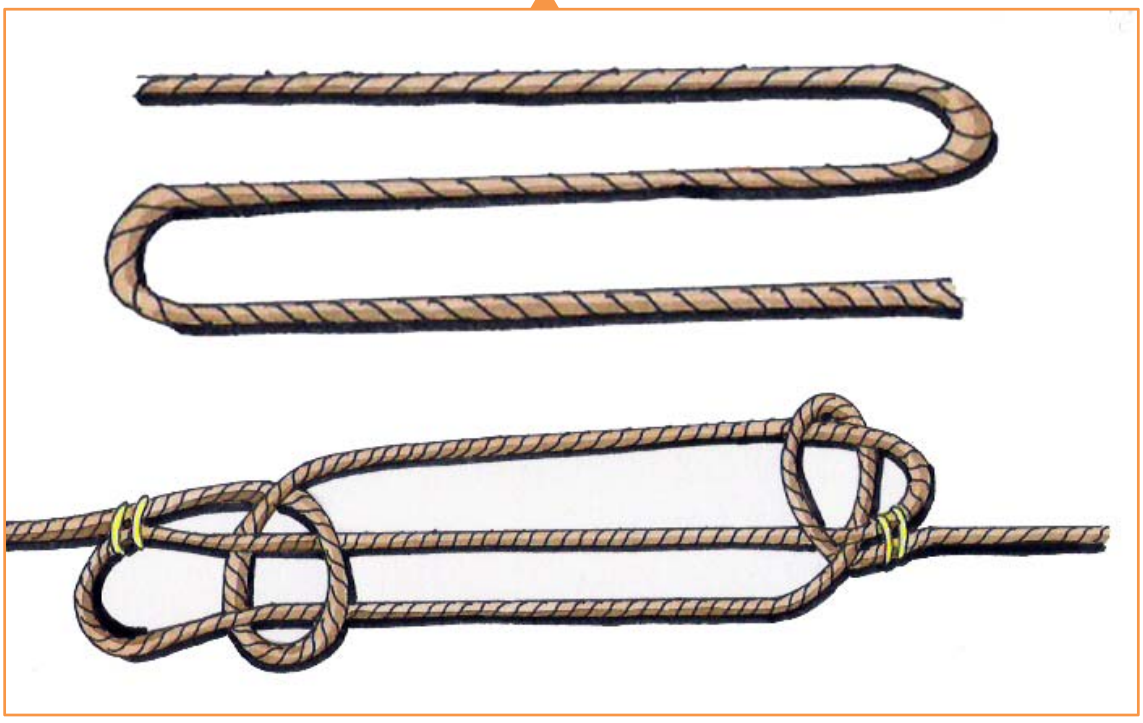
8.2.4 Chair knot

It is used to bring down the injured person.



8.2.5 Sheepshank knot

It is used to shorten the length of a line. The end of Sheepshank should beseized.

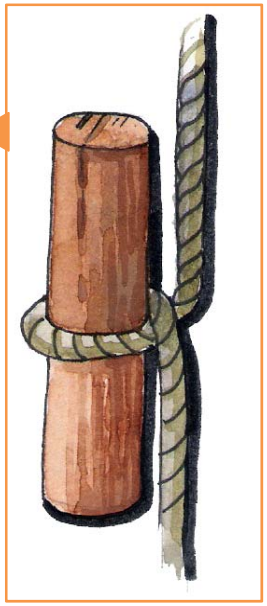


8.3 Types of Hitches and Bends and its usages

A simple fastening of a line to some object by passing the line round the object and crossing one part over the other.

8.3.1 Half Hitch

It is the basic of all knots and use extensively in round and long objects for lift and down. It can be used to move suction pipe, fire hook, etc.

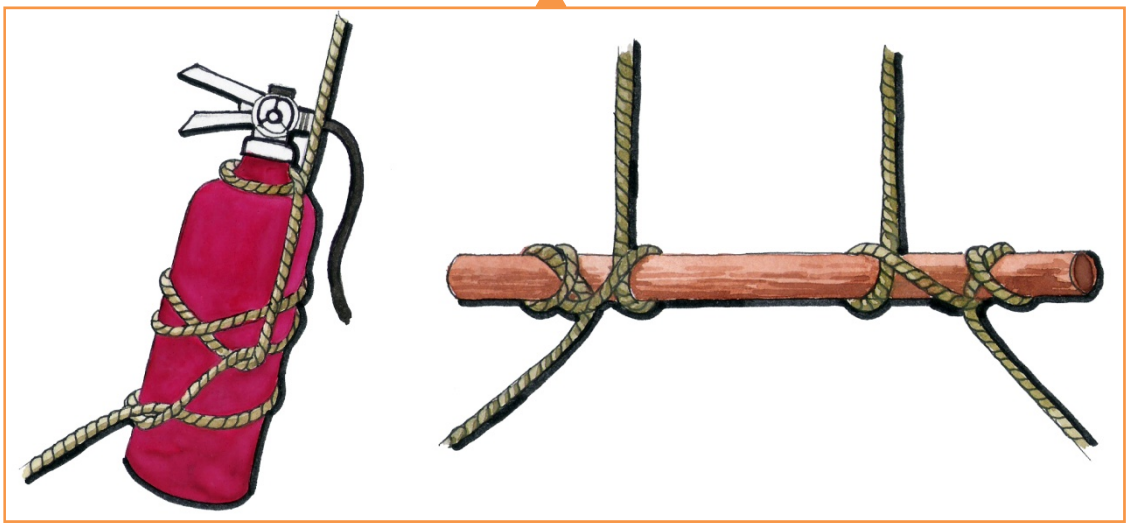


8.3.2 Clove Hitch

It is used to secure a line to any round objects.

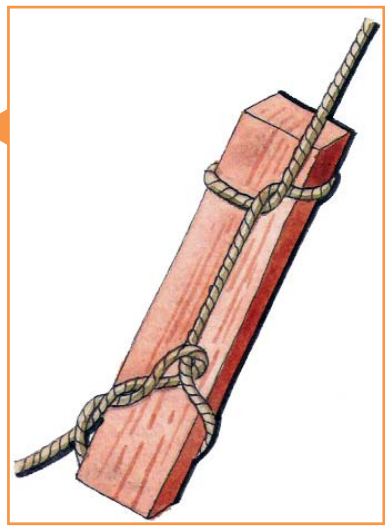
8.3.3 Rolling Hitch

It is used to secure a line to any round objects so that knob will not slip the object when a side way pull is applied.



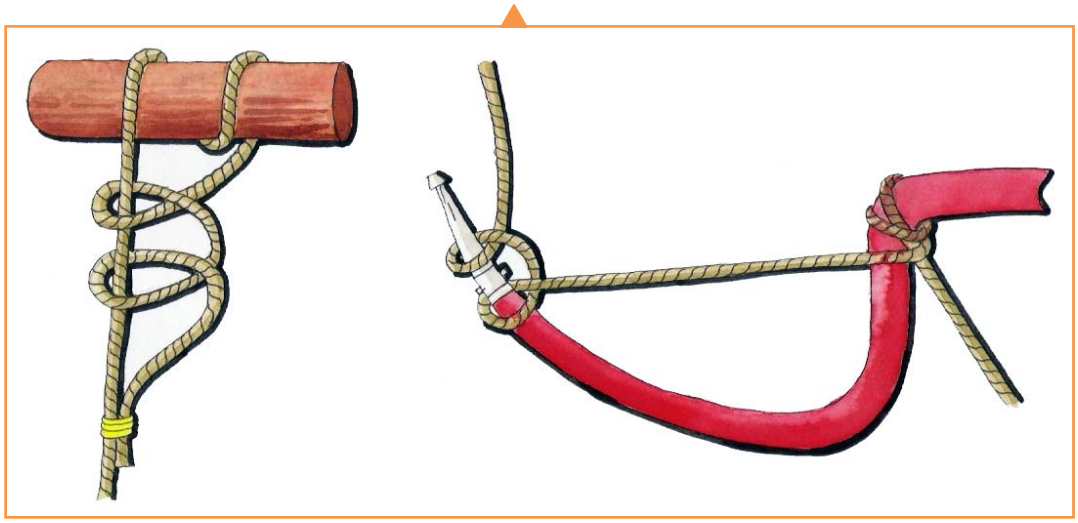
8.3.4 Timber Hitch

It is used to move any irregular shapes object such as a log or a timber.



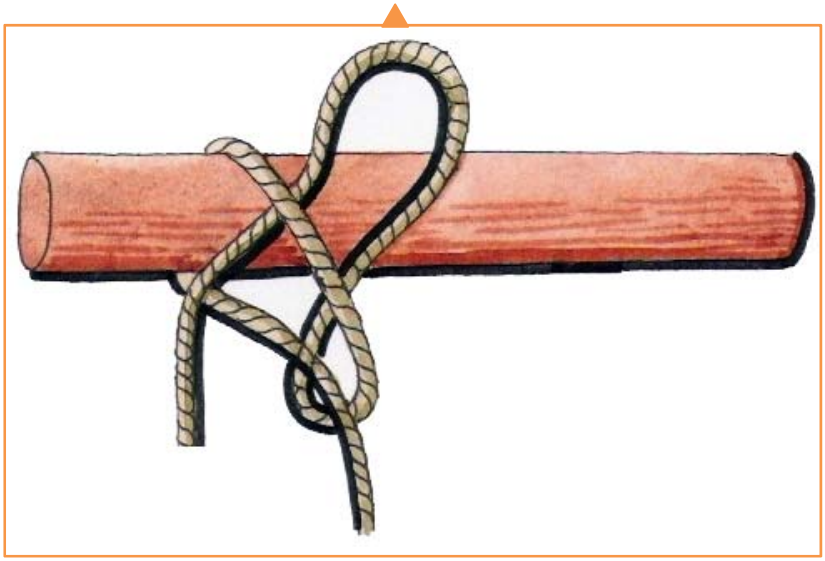
8.3.5 Round turn and two Half Hitch

It is used to secure a line to any round objects.



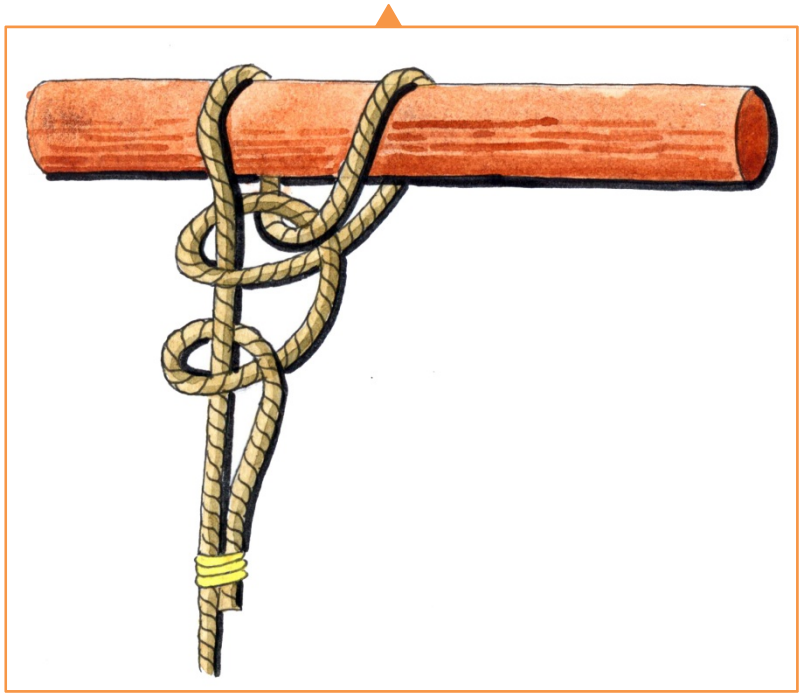
8.3.6 Slippery Hitch

It is used for temporary fastening and it can be released immediately by pulling the short end.



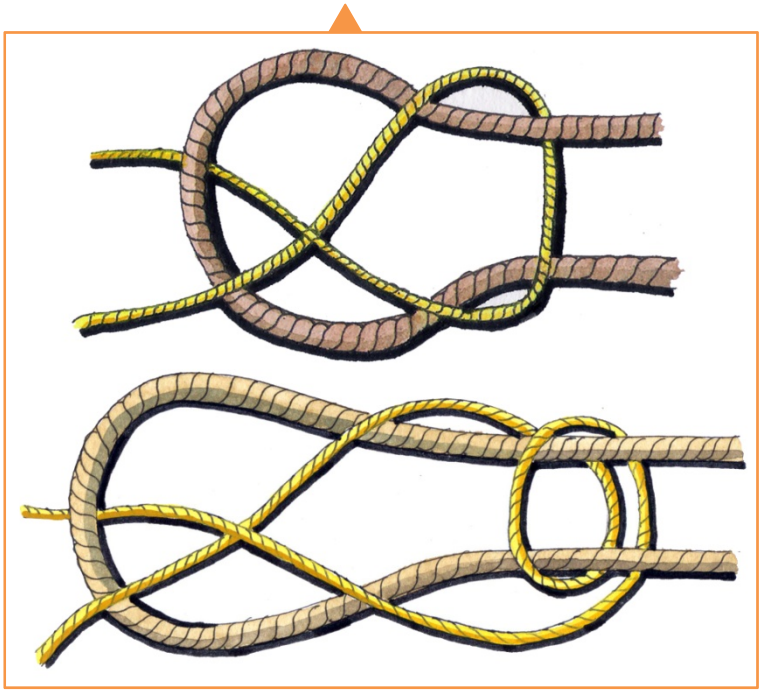
8.3.7 Fisherman's Bend

It is a variant of the round turn and two half hitches (refer 8.3.5). It makes a fastening to move since it does not pull tight under the strain. The end must be seized to the standing part.



8.3.8 Single and Double Sheet Bend

The Single sheet bend is used to join two lines of unequal thickness. The double sheet bend is slightly more secured version of single sheet bend.



Chapter 9

Rope Rescue: Pulleys

9.1 Introduction to Pulley

Pulley systems are used to gain a mechanical advantage in hauling, lifting and lowering operations. Ancient people used to throw vines over branches of trees to lift weights.

Pulley systems are used in the real world to lift large masses onto heights. One might have seen the workers repairing the roof of a house and using the pulley system to lift their tools or materials to the roof. In search and rescue context, a pulley would be used to assist lifting a victim from a crevice or the bottom of a steep slope or lowering a rescuer to the victim in a situation which would otherwise is unsafe. It could also be used to lift heavy debris to clear access or free stranded victims.

Pulley is a simple machine made with a rope, belt or chain wrapped around a wheel. The pulley is usually used to lift a heavy object (load). A pulley changes the direction of the force, making it easier to lift things.

9.2 Types of Pulleys

Rope Pulley

When/Why would you use a rope pulley?

If you need to move something heavy, but don't have the tools or manpower to move it, you can use the power of leverage to move the object using only a rope with this method.

How to create a rope pulley?

Step 1

Tie one end of rope to large object you want to move. Stretch rope out and tie a figure-8 knot in the middle of the rope (as shown in the knots chapter) leaving about a 4-foot loop in the rope.

Step 2

Take the loose end of the rope and run it around the fence post or tree mid-level height with the object to be moved and bring the loose end of rope back to 4 foot loop. Thread the end of the rope through the 4 foot loop in the rope.

Step 3

Tighten up any slack in the rope so you can get a good grip. You will be pulling object along the ground, so make sure item to be moved is clear of any obstacles or anything that would get in the way of it moving.

Step 4

Pull back on the rope and watch the large object move using the rope pulley system you created. You were able to use the leverage of the rope to create more power.

Components of a Pulley

Beam or anchor - This can be a fence post or tree of you can drag what is attached to the rope rather than have to lift. It is essential that this support can withstand the pressure going to be applied. A break here would be disastrous.

Attachment - using a double fisherman's knot you can create a strong loop. This must be as strong as the rest of the pulley. It must be able to withstand the weight being placed upon the pulley.

Pulley - contains a wheel that spins, alternatives to this include bicycle wheels (remove tires).

Hook - this is a non-essential; you can leave rope free to tie around something or someone. You can make a harness with rope. Use the previous knots chapter to determine the best way to do this.

Rope - Ensure rope has no knots, and is not frayed. Also ensure rope is strong enough to hold the weight you wish to lift.

Chapter 10

Rescue from Height

10.1 Introduction

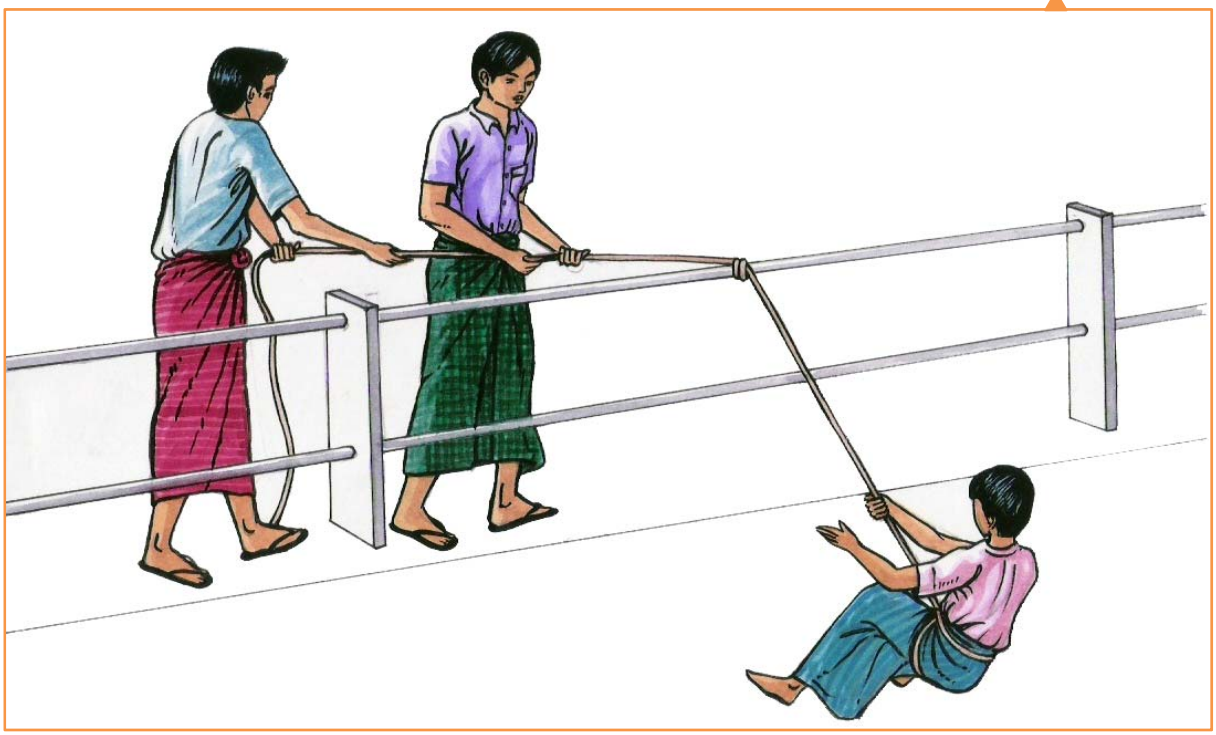
Heights and depths rescue may include rescue from the heights of a roof top, a window in a building, or from the depths of a mineshaft or lift well, using ropes for access and life support.

Rescue activities such as saving those victims who were late or unable to escape from a fire in a high/medium height building or are at risk from other dangers such as building collapse are extremely difficult to access and carry a high risk of secondary disaster to rescuers.

Therefore, it is crucial the safest way to rescue must be chosen. Take advantage of any facilities or resources available as well as the most suitable equipment such as the strongest rope and ladders.

10.2 Improvised Single Point Lower

Use this technique when you don't have descent or lowering equipment but you have to evacuate a casualty immediately, e.g. in a fire.



Method

Step 1. Take two turns around a sound anchor point as a belay.

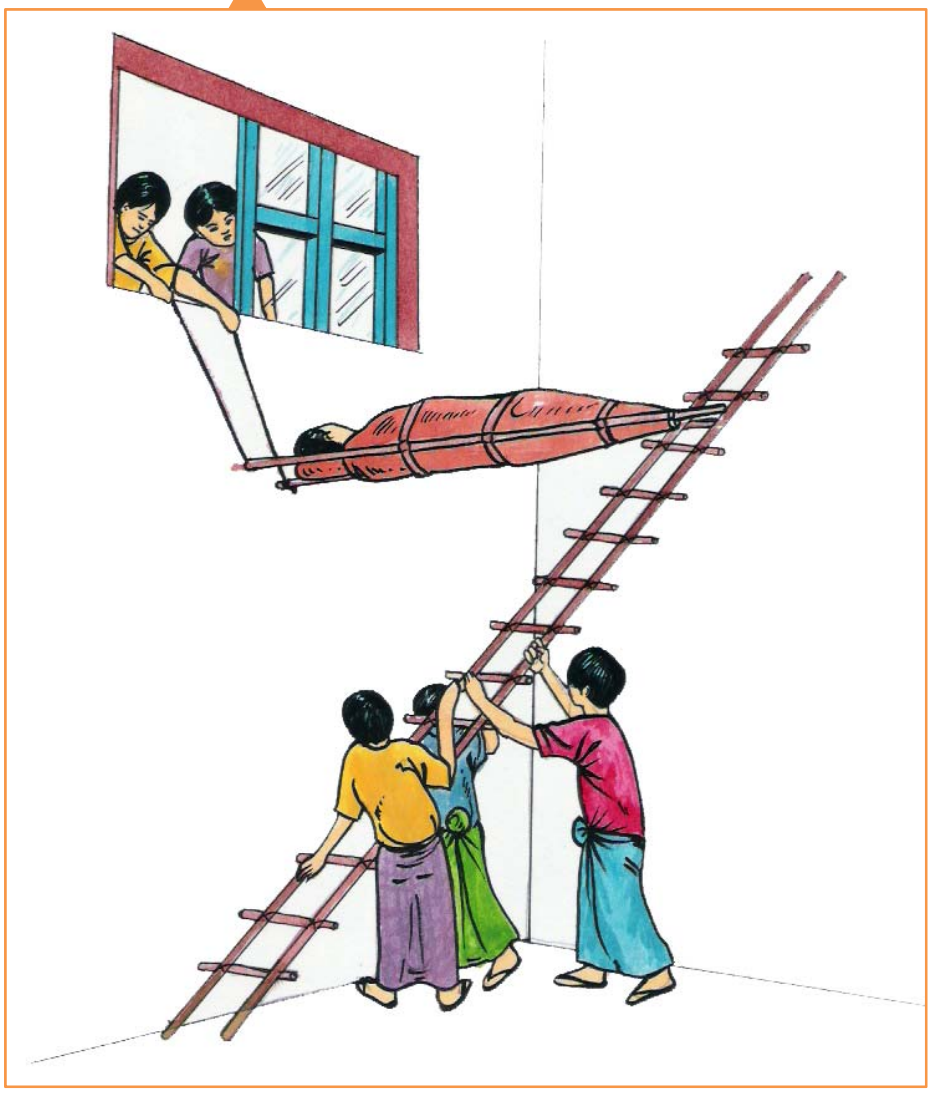
Step 2. Pay out the rope hand-over-hand (rescuers must wear gloves while lowering). Where possible at least two rescuers should control the lowering rope.

10.3 Emergency Ladder Rescue

This is a simple method which can be used to secure and save a victim making use of the cross piece of a ladder leaned against a wall.

Rescue Procedure

1. The securing rope knotted (with double bowline knot) to bind the victim is set at a cross piece of the ladder.
2. The rescurer secures the rope standing at the foot of the ladder.



Points of Attention for Guidance

1. Fully stabilise the ladder, firmly on the ground as well as against supporting wall.
2. Pay plenty of attention to the victim's posture, the ladders stability and securing condition before descending once the victim's body weight is on the rope.
3. Handle smoothly and carefully the rope to secure the victim.
4. Receive the victim with both hands, do not let him hit the floor and carry him to a safe place before putting him down.

10.4 Horizontal rescue Using Ladders

This technique can be used inside a building using a hole found or cut in the floor. If possible, do not cut through floor joists as it takes longer and weakens the whole structure.

Four rescuers form the ideal team for the job. Additional rescuers can help in raising or lowering or the casualty.

Method:

Step 1. Make sure the rescuers at height are secured from falling.

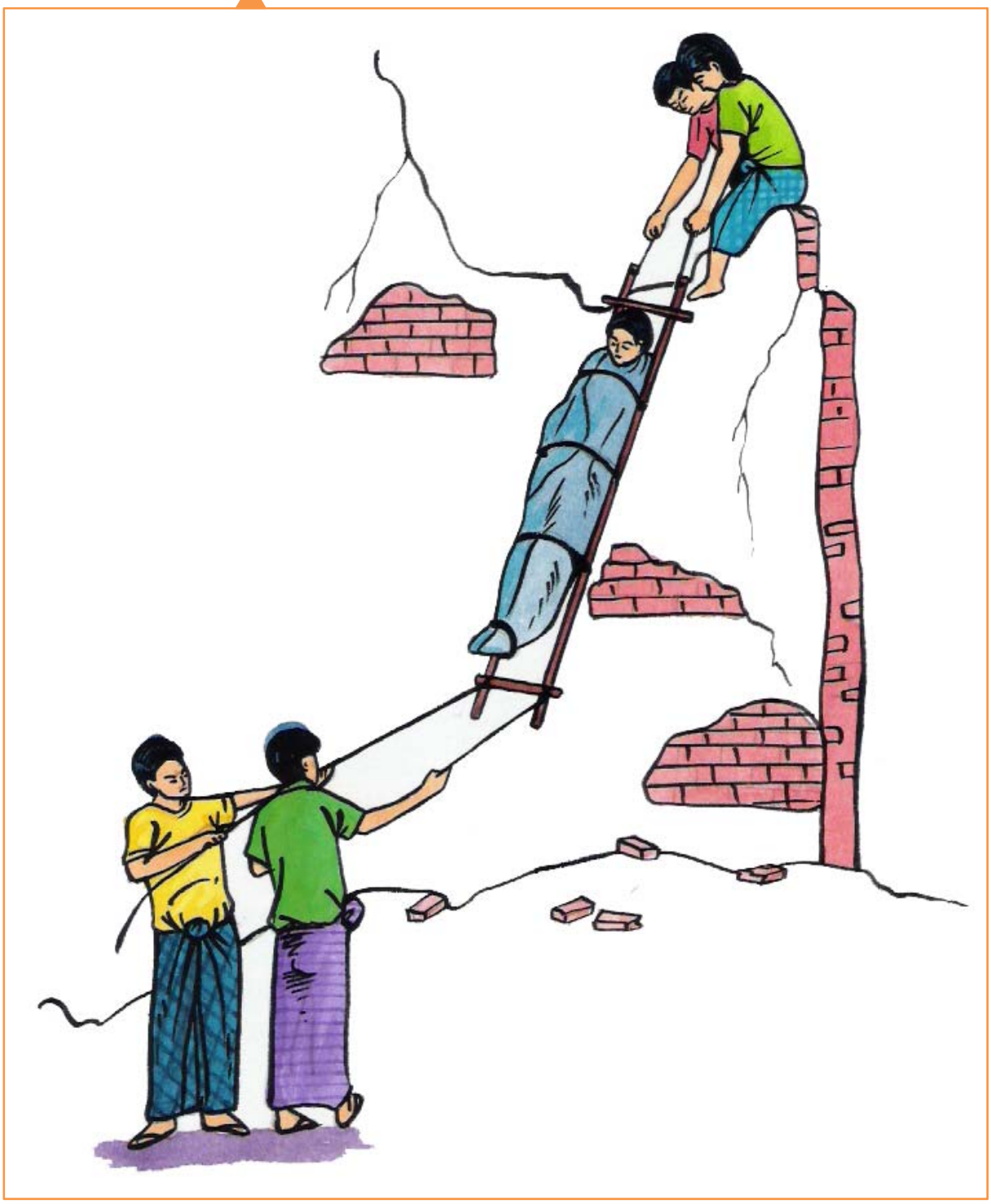
Step 2. Secure lowering lines to the head of stretcher.

Step 3. Use the same procedure for the guide lines at the foot of the stretcher.

Step 4. Two rescuers above pass out the guide lines to two rescuers on the ground.

Step 5. The two rescuers above ease the stretcher over the edge of the wall, until they come to the lowering lines with which they lower away hand-over-hand.

Step 6. The two rescuers on the ground guide the stretcher clear of any obstructions and walk in on the guide lines to support the stretcher on either side as it comes down.



Chapter 11

Stretchers

11.1 Introduction

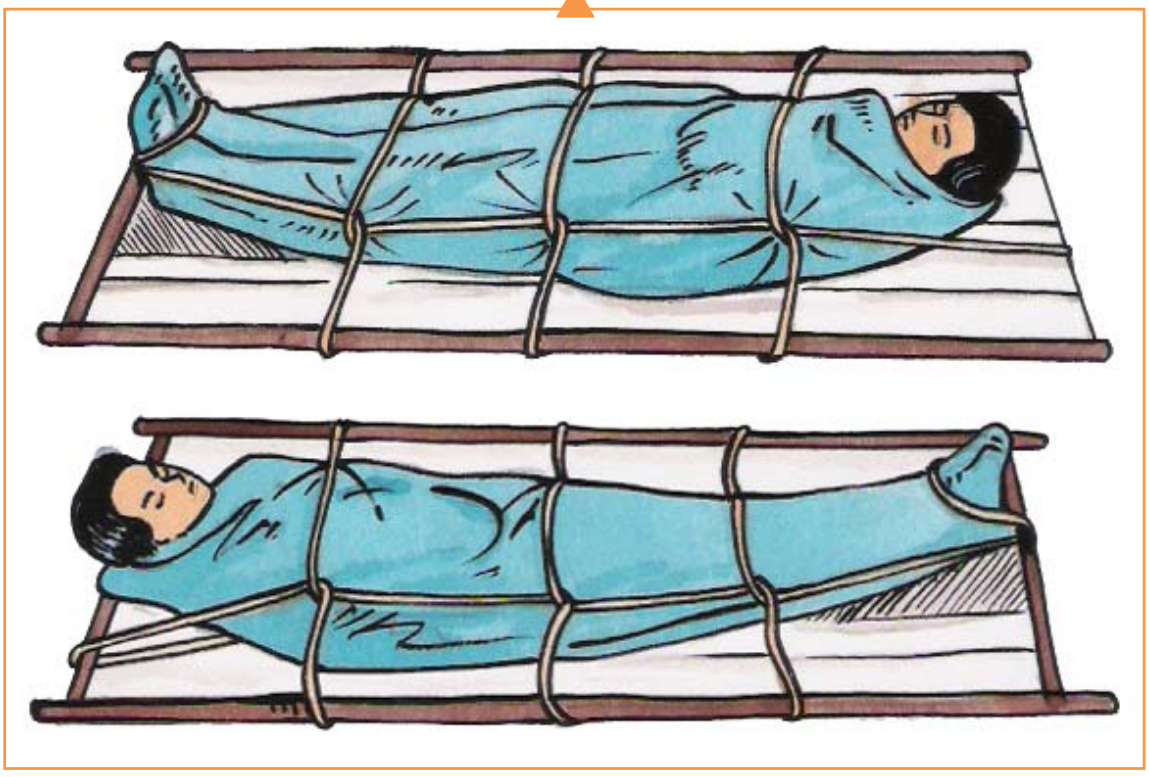
Stretchers are needed if a person is unable to walk by himself; a stretcher is usually moved by two people, one at the head and the other at the feet. The casualty is placed on the stretcher, and can then be carried or wheeled away.

Actual stretchers are expensive and not common by available especially in rural areas. In the event of any disaster, many methods of improvisation and some imagination should be used to confront with the problem. A number of the more commonly used methods are described here.

11.2 Types of Improvised Stretcher

11.2.1 Improvised Stretcher : Using local rescue

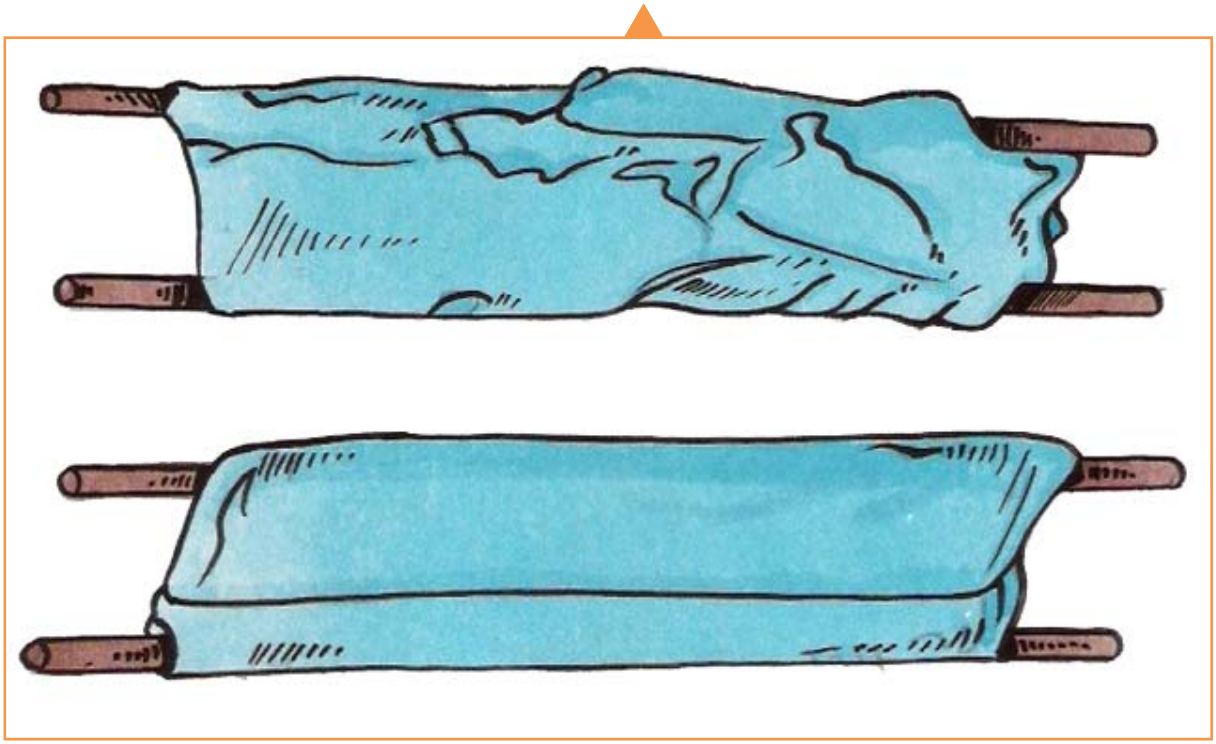
Improvised platform stretchers can readily be devised from doors, sheets of galvanised iron, or bed frames, wooden plank, etc.



11.2.2 Pole stretchers

These stretchers are very simple to make and require two poles about two metres long. Stout broom handles, water pipe or 50mm x 50mm timber are quite appropriate for this job.

The poles should be laid parallel on the ground and about 60cm apart. The bed of the stretcher can be formed from a blanket, sacks, overalls or coats. The weight of the casualty will hold the blankets in place.



11.2.3 Ladders

Where for any reason, a very narrow stretcher is required, such as for passing through small window openings, tunnels etc. a small ladder or one half of a small extension ladder can be used to an advantage.

A decking of boards should be placed on the ladder (if available) and it is then blanketed in the normal way.

The lashing line is attached to a ladder string using a rethreaded Figure of eight, and then the lashing done at the same positions as board rescue stretcher.

11.2.4 Chairs

A strong style kitchen chair can be used to carry casualties without serious injuries.

11.3 Making a Stretcher

11.3.1 An improvised Stretcher.

This technique requires two poles/pipes strong enough to support the victim's weight and at least two shirts.

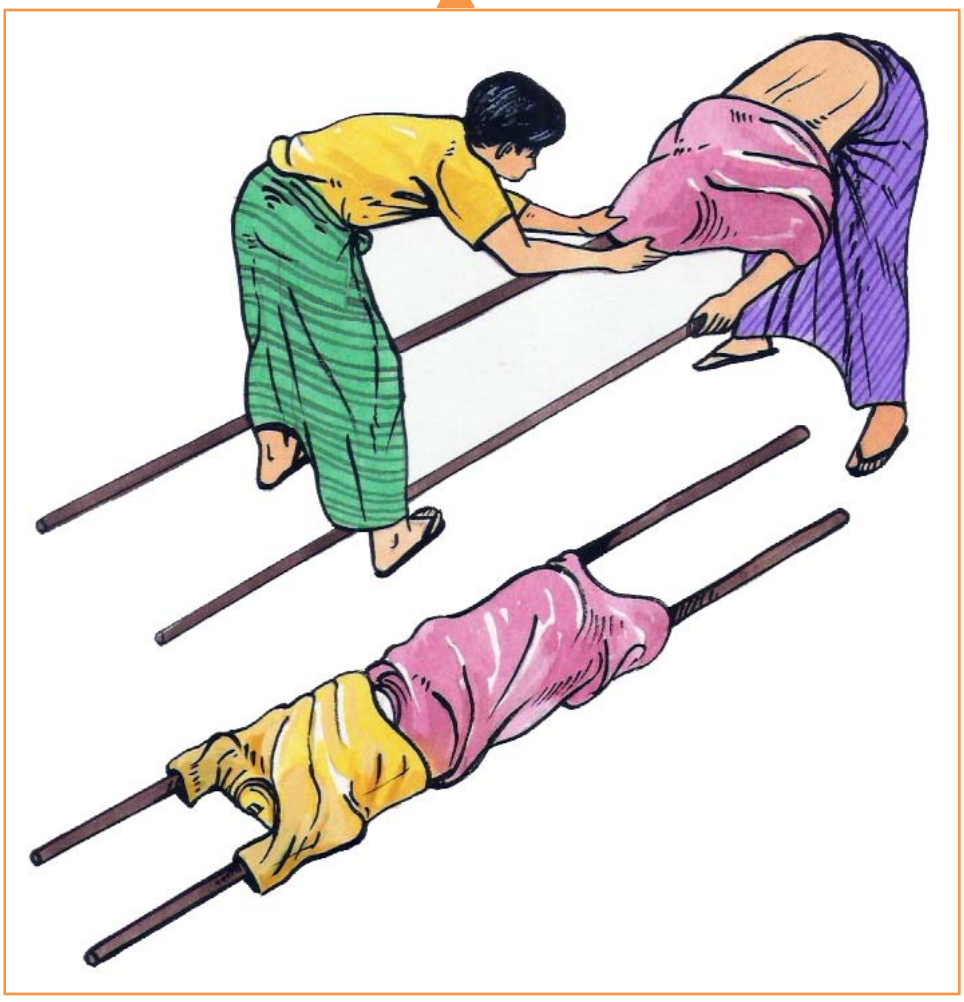
Tips 8

Rescuers should not give up clothing, this might affect their health, welfare, or reduce their effectiveness.

Step 1. While the first rescuer is grasping the litter poles, the second rescuer pulls the shirt off the head of rescuer one.

Step 2. All buttons should be buttoned with the possible exception of the collar and cuffs.

Step 3. The rescuers then reverse the procedure and switch sides.

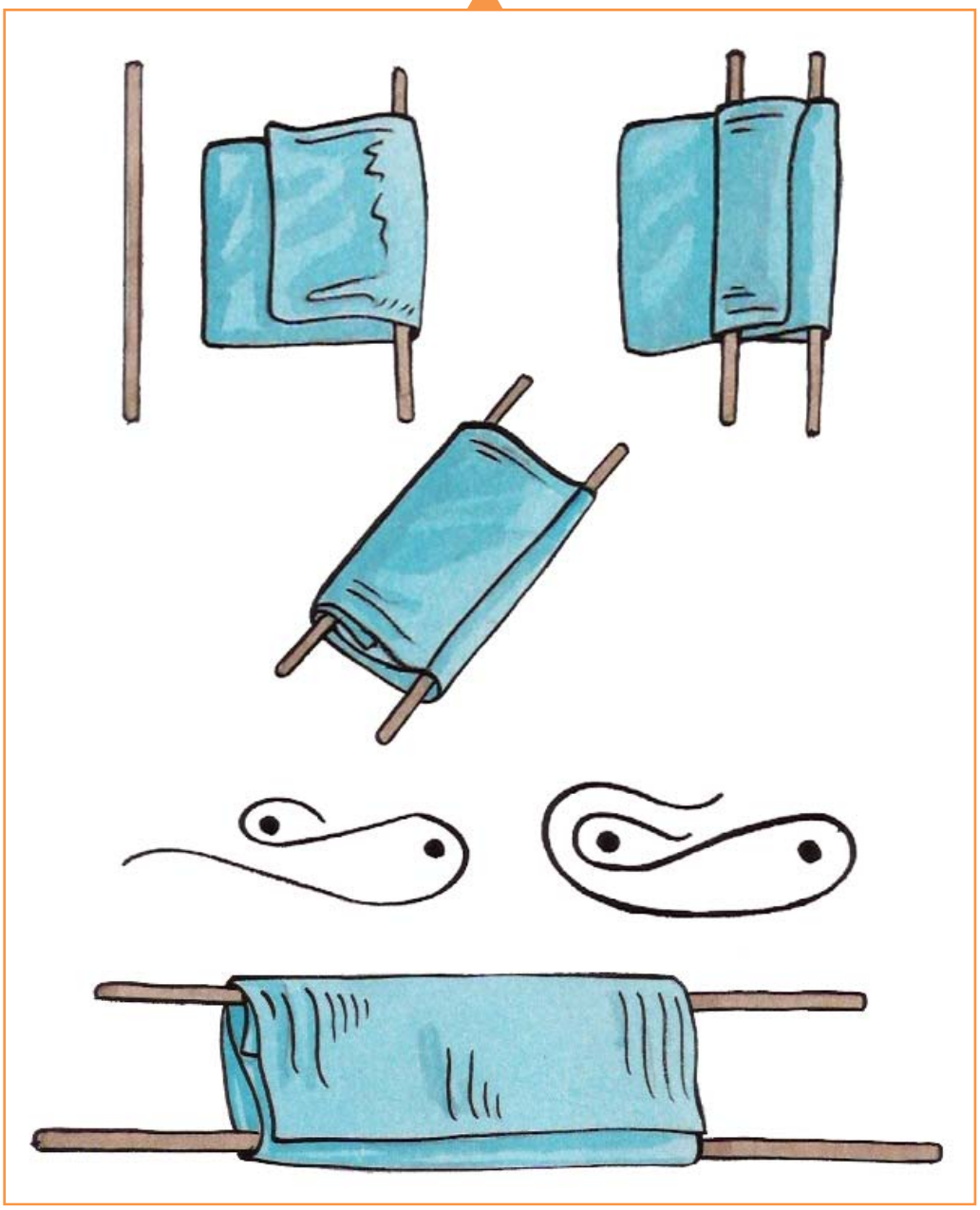


11.3.2 A Blanket Stretcher

This technique requires two poles and a blanket.

Step 1. Place the blanket down on the ground.
Step 2. Place one pole approx. 1 foot from the middle of the blanket.
Step 3. Fold the short end of the blanket over the first pole.
Step 4. Place the second pole approx. 2 feet from the first (this distance may vary with victim or blanket size).
Sep 5. Fold both halves of the blanket over the second pole.

The victim's weight will hold the stretcher together.



Chapter 12

Transportation/ Shifting of Victims

12.1 Background

Dangers at sight may require you to transfer the patient quickly even before assessment of the casualty & it is called Emergency move.

After you have handled the casualty & taken proper care you may decide to move the patient to cooler or better atmosphere & that is called non-emergency move.

But you may have to shift the patient from the scene to the ambulance & that is called transfer of patient.

You may be alone, or have help of one or two volunteers & the casualty may be conscious or unconscious, may have sustained grievous injury to lungs, liver, kidney, brain or has fractures. From the available different stretchers, different kinds of wheel chair, it is necessary to select proper patient carrying device. Stabilize the patient before shifting.

12.2 Body Mechanics

Definition: Proper use of your body to facilitate lifting and moving, and to prevent injury to yourself or further injury to the victim.

The Principle of Lifting

a. Safe grip - use as much of palms of hands as possible.
b. Straight back - avoids strain on ligaments.
c. Knees bent - utilize strong of muscles of Thighs and buttocks.
d. Arms close to body and elbows flexed - minimizes effort.
e. Feet apart, one in advance of other - increases base of support.
f. When lifting - lift object close to the body.
g. Seek help - avoid risk of injury.

Apply these principles to lifting, pulling, pushing, carrying, moving or reaching for an object. The key to preventing injury is correct alignment of the spine.

Teamwork is essential. Communicate during a task, clearly and frequently. Use commands that are easy for team members to understand. Verbally coordinate moves from beginning to end.

12.3 Moving Patients

Generally, if there is no threat of injury, provide emergency care and then move the patient. If the scene is potentially unsafe or poses an immediate threat, you may have to move the patient.

12.4 Emergency Moves

Tips 9

Make an emergency move only when there is an immediate direct danger to the patient.

Examples of situations which might require you to make an emergency move:

- Fire or threat off fire.
  - Always considered a great threat to patients and rescuers.
- Explosion or threat of explosion (hazardous scene).
- Inability to protect the patient from hazards at the scene.
  - Unstable building
  - Rolled over car
  - Hostile crowd
  - Hazardous materials (Haz-Mat)
  - Spilled gasoline
  - Extreme weather
- To gain access to other patients who need care.
- When life-saving care cannot be given due to the patient's location or position:

- A patient in cardiac arrest must be supine on a hard flat surface to perform CPR properly. If patient is sitting in chair or is lying in bed, you must make an emergency move.

Teamwork is essential. Communicate during a task, clearly and frequently.

The greatest danger in making an emergency move is the possibility of aggravating a spinal injury. Provide as much protection to the spine as possible.

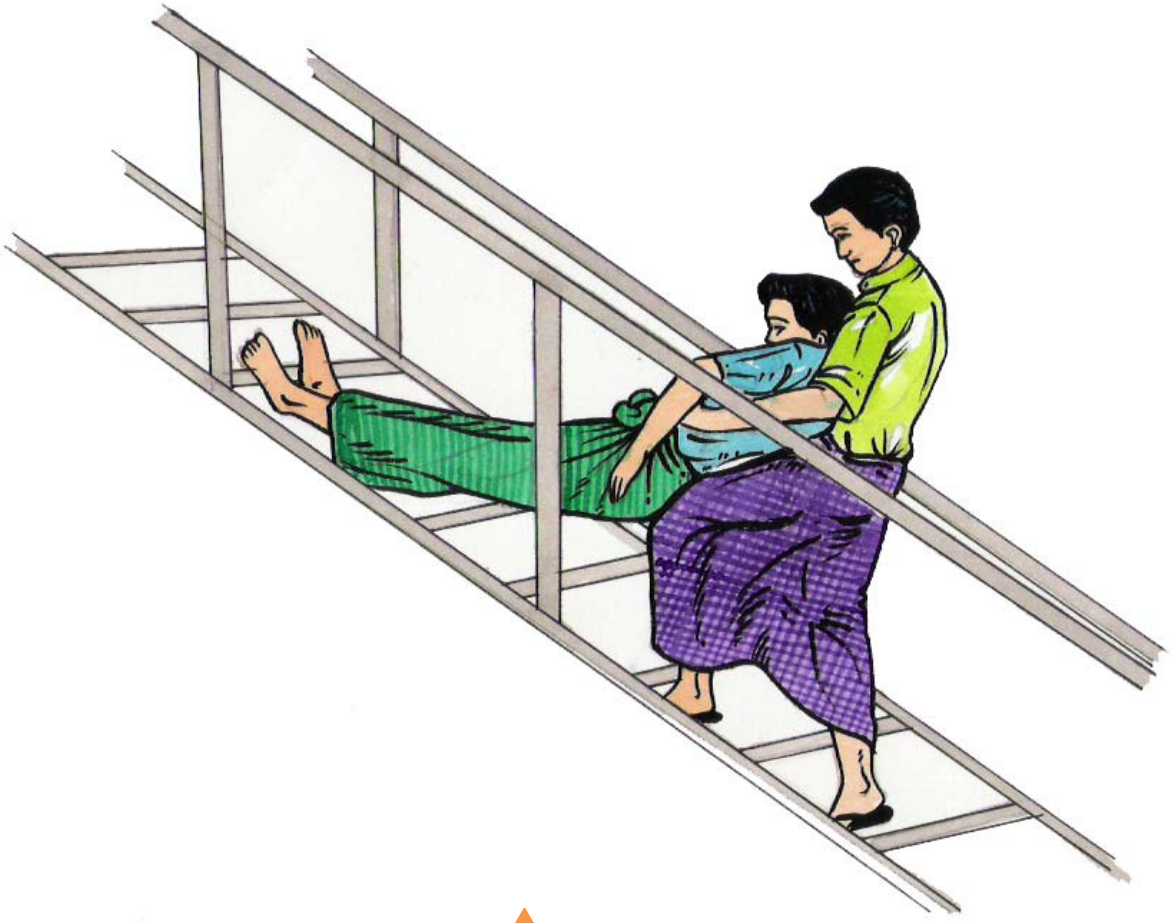
12.5 Types of Emergency Moves

12.5.1 One Person Techniques

Pack Strap Carry

This is used on the conscious casualty with no fractures of the extremities.

1. Turn your back to the standing casualty.
2. Bring their arms over your shoulders to cross your chest.
3. Keep their arms straight as possible, the armpits over your shoulders.



Correct Drag Technique

This method is used to recover a heavy casualty down stairs, when the rescuer cannot use the pack strap or other methods. However, its use need not be restricted to staircases.

- With the casualty lying flat, tie the wrists together using a triangular bandage or similar.
- Next, the rescuer comes to the head and lifts the casualty into sitting position.
- The rescuer reaches though under the casualty's arms and grasps the wrists.
- The rescuer is then in a position to drag the casualty backwards, and if a staircase has to be negotiated a large measure of support can be given to the casualty's trunk by the rescuer using a knee to ease over each successive step, remembering that the strongest part of any staircase is close to the wall.

One Person Arm

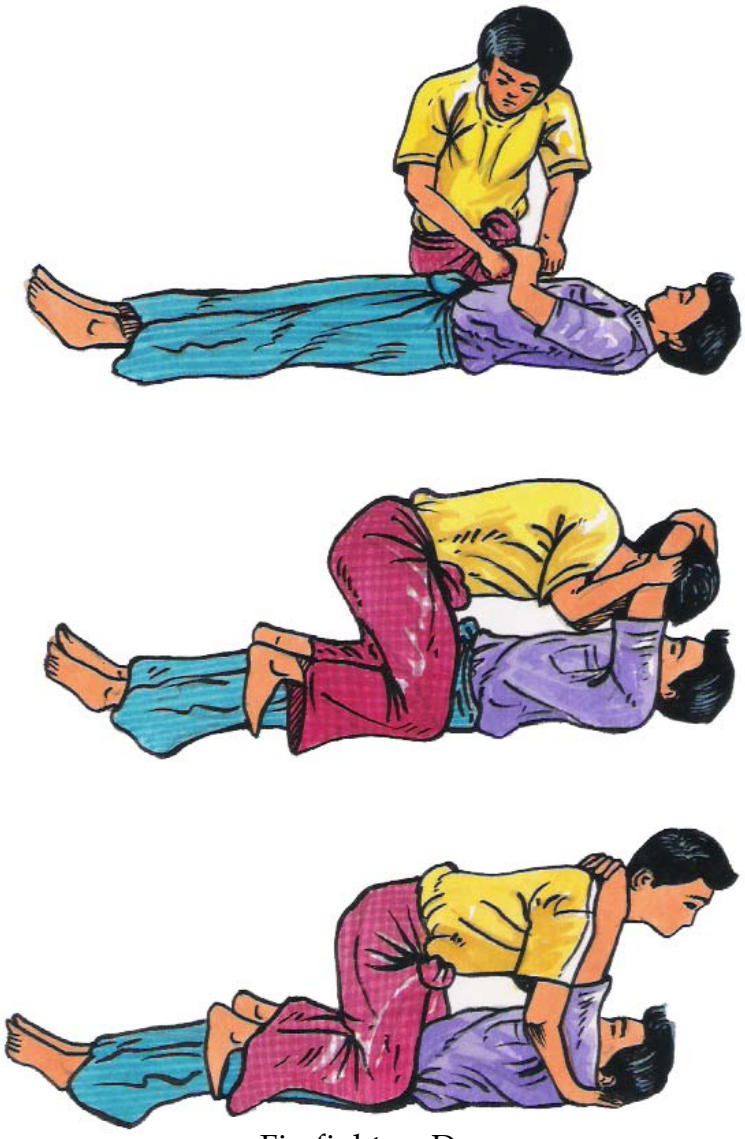
One Person Arm Carry
Rescuers should hold the victim around the back and under the knees.

It is important that the rescuer lifts from the knees and not with the back to avoid injury to the rescuer.

Blanket Drag

Blanket drag
This is the preferred method for dragging a victim,

1. Place the victim on a blanket or similar equivalent.
2. Wrap the blanket corners around the victim.
3. Keep your back as straight as possible, use your legs to pull, not your back.
4. Try to keep the pull as straight and in-line as possible.



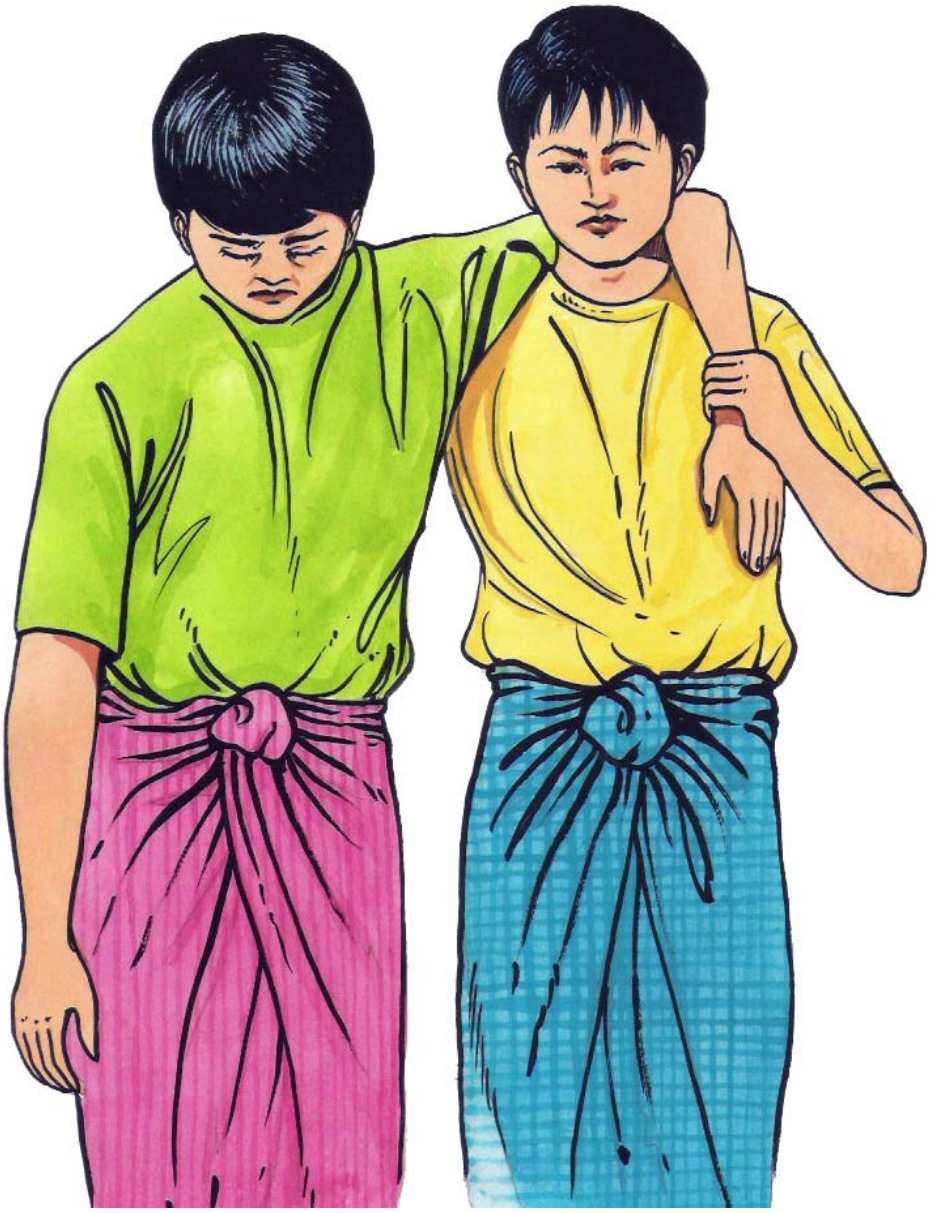
Firefighters Drag

Firefighters Drag

This is a useful method for when a casualty has to be removed from a smoke filled building in an emergency - noting that rescuers will not enter a smoke filled building.

- Both rescuer and casualty have their heads low down where the clearest and coolest air is found if the building is on fire.
- The entire weight of the casualty does not have to be supported by the rescuer.
- The casualty's hands should be crossed over and tied with a bandage or similar.
- The Firefighters crawl method can be varied according to personal preference.

Probably the most effective method is for the rescuer to place an arm, shoulder and head through the casualty's arms.



One Rescuer Human Crutch

One Rescuer Human Crutch

For this method to work, the casualty must be conscious and capable of giving the rescuer some assistance.

- Note the position of the rescuer's hands, one holding the casualty's wrist and the other taking a firm grip of the clothes at the waist on the far side of the body.
- The injured side of the casualty should be closest to the rescuer.

12.5.2 Two persons Techniques

Techniques with Two or More People

Two Person Carry Techniques

This is perhaps the most suitable way in which two rescuers can handle an unconscious casualty.

Step 1. The casualty is put into a sitting position.

Step 2. The first rescuer stoops at the rear of the casualty. Reaching under the casualty's arms, the first rescuer grips the casualty's wrists.

Step 3. The second rescuer stoops between the casualty's legs grasping them underneath the knees.

Step 4. The standard lift orders are given and the casualty is lifted into the carrying position.

Step 5. Should the casualty have a leg injury, the effects of this can be minimized by the front rescuer crossing the casualty's legs over, and then carrying them to one side. The advantage of this method is that the rescuer supporting the casualty's feet has a free hand with which to open doors, clear debris, etc.

Two person hand seat

Two Person Hand Seat

1. Pick up the victim by having both rescuers squat down on either side of the victim.
2. Reach under the victim's shoulders and under their knees.
3. Grasp the other rescuers wrists.

Four handed seat

Four Handed Seat

1. Position hands as shown in the picture
2. Lower the seat to allow your victim to sit
3. Lower the seat using your legs, not your back.
4. When the victim is in place stand using your legs, keeping your back straight.

Two Person Chair Carry

1. Pick the victim up and place them or have them sit in a chair.
2. The rescuer at the head grasps the chair from the sides of the back, palms in.
3. The rescuer at the head then tilts the chair back onto its rear legs.
4. For short distances or stairwells, the second rescuer should face in and grasp the chair legs.
5. For longer distances, the second rescuer should separate the victim's legs, back into the chair and, on the command of the rescuer at the head, both rescuers stand using their legs.

12.6 Non-Emergency Moves

Where there is no immediate threat to life, the patient should be moved only when ready for transport, using a non-emergency move. Complete the on-scene assessment and treat the patient first. Prevent additional injury and try to avoid causing discomfort and pain to the patient. Non-emergency moves generally require minimal equipment. However, if you suspect spinal injury, provide proper spinal immobilization prior to moving the patient. Often patient-carrying devices can be utilized.

12.6.1 Examples of Non-Emergency Moves

Direct-ground / bed lift: This move is difficult if the patient weighs more than 80 kilos, is on the ground or other low surface or is uncooperative. It should require at least three people.

1. Use universal precautions and secure the scene.
2. Position yourself. Tallest person should be on the head part and will have to do the command.
3. Insert hands supporting the neck, back, hips and legs.
4. Upon command, lift the victim and put to on your knees.
5. Upon command, lift the patient and stand upright.
6. Upon command, clip the victim near your body.
7. Upon command, walk and move the victim to the designated place and direction.

Chapter 13

Basic First Aid

13.1 DR ABC of First Aid

Remember DR ABC Approach.

1 DANGER

Check the immediate surroundings of the incident if it's safe to help and assist the victim. Ensure safety of:

- Yourself
- Others
- Victim

2 RESPONSE

Gently shake the patient's shoulders and shout, "Are you okay?"

- Is the Victim conscious?
- Is the Victim unconscious?
- Alert others and call for help.

3. AIRWAY

- Is airway clear?
- Is airway open?

4. BREATHING

- ***Look*** for chest rise.
- ***Listen*** for any air coming from the victims mouth or nose.
- ***Feel*** the breath of victim on your cheek.

5. CIRCULATION

- Can you feel a **Pulse?**
- Can you see any obvious signs of life?

13.2 Cardio-Pulmonary Resuscitation

13.2.1 Definition

Cardiopulmonary resuscitation encompasses more than one simple rescue technique for saving someone whose heartbeat and breathing has stopped. It requires learning the physical skills of artificial respiration (mouth-to-mouth breathing) and external chest compressions, as well as the proper timing and a specific sequence in which to use the skills.

The following procedures were based from the 2005 CPR recommendations for lay rescuers by the International Liaison Committee for Resuscitation (ILCOR).

13.2.2 CPR for adults (>8 years) and children (1-8 years)

Upon seeing a person motionless on the ground

Assess the need for CPR

1. Check for safety: Ensure that you are safe before you approach the victim.
2. Wear appropriate personal protective equipment (PPE) when available.
3. Check responsiveness: gently tap the victim and shout "Are you ok?"

Patient NOT Responsive	Patient Responsive
• Alert others and call for help	• Put the victim on a side lying position
• Put the victim on a firm or hard surface	• Ask the victim what happen
• Open the victims airway by Head-tilt-chin-lift maneuver 	• Arrange transport of victim to a health facility
• Check breathing for 5 seconds ✓ Look for chest rise ✓ Listen if air is passing from mouth and nose ✓ Feel for air in your cheek 	• Continue monitor the victim's condition during transport to the health facility

Victim NOT breathing	Victim is breathing
• Give two (2) normal breaths with each breath lasting for 1 second 	✓ Put the victim on a side lying position 
• Proceed to external chest compression	✓ Maintain open airway ✓ Head-tilt-chin-lift ✓ Drain secretions from the mouth
	✓ Continue monitor the victim's condition while waiting and during transport

Note : when upon giving breathes and there is resistance of air getting in, reposition or re tilt the head and try giving breath again. If still there is resistance, suspect airway obstruction or choking (See procedure for Choking)

Tips 10

Because an unconscious patient may choke on his own vomit, the victim must be placed to the side until he regains consciousness.

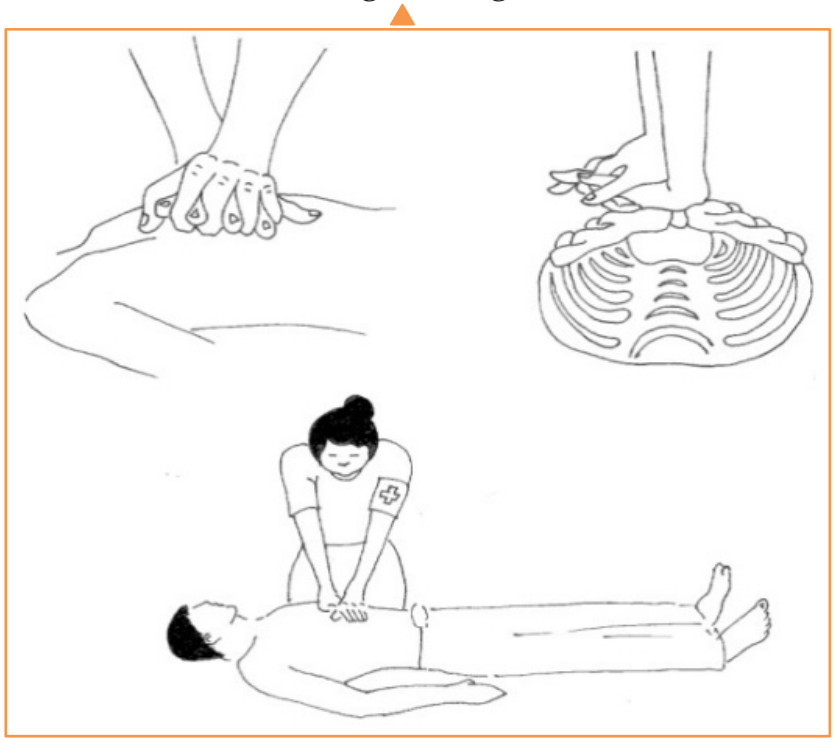
External Chest Compressions

1. Kneel, facing the casualty's chest.
2. Place the heel of your other hand on the breastbone between the nipples.
3. Place the heel of your other hand on top of the heel of your other hand.
4. Keep your fingers off the casualty's chest.
5. Position shoulders over your hands, with elbows locked and arms straight.

Children: depending on the size of the child, you can use 1-hand external chest compression for smaller children.

6. Give 30 chest compressions and 2 breaths for 5 cycles lasting 2 minutes.

7. Count aloud, "One and two and three," until you reach 30. After each 30 compressions, deliver 2 full breaths. Compressions should be smooth, rhythmic, and uninterrupted.
8. After completing 5 complete cycles of 30 compressions and 2 breaths. Check for breathing and signs of life for 5 seconds.



Continue CPR -

- If the casualty has no breathing and no signs of life, give 2 full breaths and continue CPR. Check every 5 cycles
- If the victim begins to breathe and shows signs of life, put the patient on a side lying position and maintain an open airway until medical assistance arrives.

Tips 11

If you are suspicious that the victim is suffering from a communicable disease that can endanger your safety, the first aider has the option NOT to perform artificial respiration. In this case you only perform

When to stop CPR

You only discontinue performing CPR if:

- ✓ you are exhausted
- ✓ you are relieved by another person trained in CPR or medical personnel
- ✓ the victim is pronounced dead by an authorized personnel usually a medical doctor.

CPR with Second Person

In some circumstances wherein there are 2 CPR trained persons on the scene, the team can perform a 2 person CPR

1. The first person should kneel next to the casualty opposite the second person, tilt the casualty's head back, and check breathing and signs of life for 5 seconds.
2. If there is no breathing, the first rescuer should give 2 normal breaths and perform CPR.
3. The second person will perform external chest compression while the first person will perform artificial respiration
4. The first person monitors the effectiveness of CPR by looking for the chest to rise during rescue breathing and checking for signs of life during chest compressions.

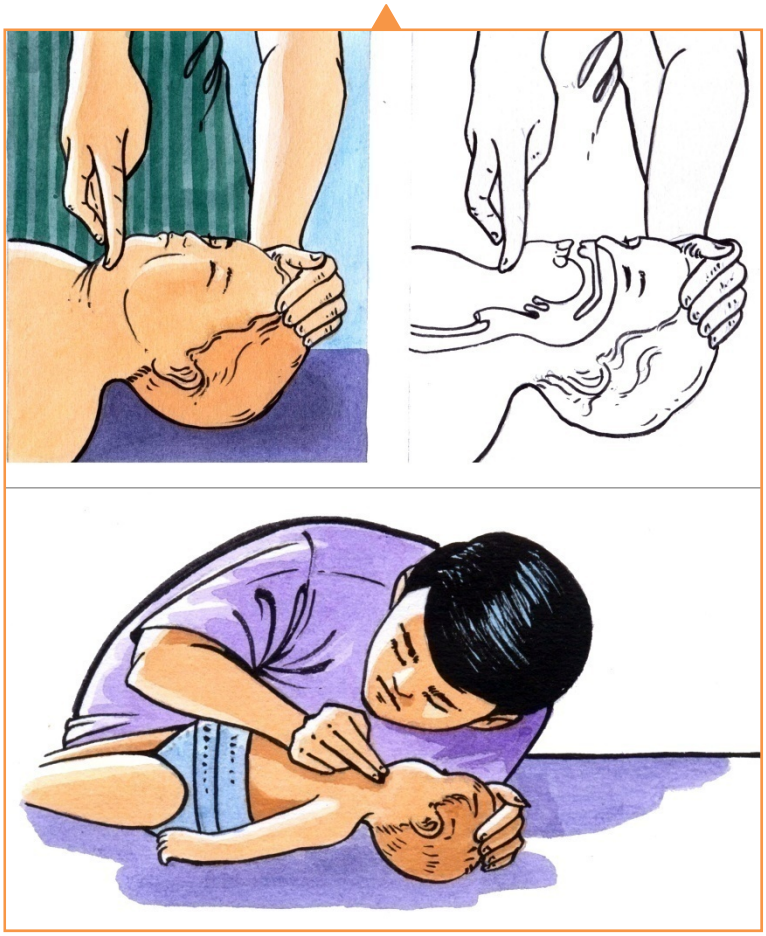
13.2.3 CPR for Infants

If the casualty is an infant (0-1 year old) do the following:

Upon seeing a person motionless infant….

Assess the need for CPR

1. ***Check for safety***: Ensure that you are safe before you approach the victim.
2. Wear appropriate personal protective equipment (PPE) when available.
3. ***Check responsiveness***: Tap the sole of the feet or gently shake the shoulder.
4. ***Alert others and ask for help*** If there is no response from infant
5. ***Position casualty*** - Place casualty on a firm surface supporting, the head and neck.
6. ***Open the airway*** - Place your hand on the infant's forehead, and gently tilt the head to a neutral position. DO NOT overextend the head and neck



7. Place the fingers of your other hand under the bony part of the chin. Tilt the head and lift the jaw.
8. ***Check for breathing*** - Place your ear over the casualty's mouth and nose. Look for chest rise, listen, and feel for breathing, 3 to 5 seconds.
9. **Give breaths** - Open your mouth, take a breath, and make an air-tight seal around the infants mouth and nose. Pause between each breath. Look for chest rise, listen, and feel for breathing

Note: when upon giving breathes and there is resistance of air getting in, reposition or re tilt the head and try giving breath again. If still there is resistance, suspect airway obstruction or choking. (See procedure on Choking)

External Chest compressions (infant) -

1. Face infant's chest.
2. Place your middle and index fingers on the breastbone just below the nipple line.

3. Give 30 compressions, each should compress the chest 1/2 to 1 inch
4. Give 30 chest compressions and 2 breaths for 5 cycles lasting 2 minutes
5. Count aloud, "One and two and three," until you reach 30. After each 30 compressions, deliver 2 puff breaths. Compressions should be smooth, rhythmic, and uninterrupted.
6. After completing 5 complete cycles of 30 compressions and 2 breaths. Check for breathing and signs of life for 5 seconds.

13.2.4 Comparative summary of CPR based on age

Action	Adult (>8 yrs.)	Child (1-8 yrs.)	Infant (0-1 yrs)
Call for help when alone	Call immediately after determining victim is unresponsive	Call after performing 2 minutes of CPR	Call after performing 2 minutes of CPR
CPR Hand Location	2 hands on the breastbone between the nipples	1-2 hands on the breastbone between the nipples	2 fingers on the breastbone just below the nipple line
CPR compression depth	1 ½ - 2 inches	1/3 – ½ the depth of the chest	1/3 – ½ the depth of the chest

Tips 12

Practice, practice and practice!!!

CPR skills are not used regularly so there is a tendency to forget the procedures and the skills to deteriorate. Practice makes perfect.

13.3 Choking and Obstructed Airway

People who are choking may still be conscious and have circulation but are unable to breathe because something - usually food - is lodged in the throat. Choking on food often occurs after drinking alcohol, which dulls feeling in the throat. Frequently, a choking victim clutches the throat with thumb and forefinger, a universal signal of distress.

Children choke more frequently than adults, usually on a toy or food fragment. Get the child to a hospital emergency room at once while continuing efforts at mouth-to-mouth breathing.

13.3.1 Assessment of a Conscious Victim

Before you do anything to assist a person you think is choking, ask the victim to talk.

1. **If the victim is able to talk,** the airway is not completely obstructed and it is best to leave the victim alone until he can dislodge the food or object himself by coughing, throat-clearing, or with his fingers.
2. **If the victim cannot talk,** the airway is completely obstructed and you should assist in dislodging the obstruction. The technique recommended by the American Heart Association is a series of abdominal thrusts known as the **Heimlich Maneuver**.

13.3.2 Abdominal Thrusts or Heimlich Maneuver

Adult

1. Assist the victim to stand up.
2. Grasp the victim from behind with your hands around his waist.
3. Make a fist with one hand and place the thumb side on the victim's abdomen, midway between the belly button and the rib cage.
4. Grasp the fist with your other hand and thrust forcefully inward and upward. Each new thrust should be a separate and distinct movement.

Infant and Child

1. Supporting the head and neck with one hand, straddle infant face down, head lower than trunk, over your forearm, supported on your thigh. (If the child is 1-2 years old, place her face down on your thigh. If the child is over 2 years, place her face down on your two thighs)
2. Deliver five back blows, forcefully, with the heel of the hand between the infant's shoulder blades.
3. Immediately, while supporting the head, sandwich the infant between your hands and turn onto its back, head lower than trunk, Using 2 or 3 fingers, deliver five thrusts in the sternal region.
4. Repeat both back blows and chest thrusts until the objective is forced out.

First Aid for Choking Infant

First Aid for Choking Child

If suddenly, the victim becomes unconscious while performing a Heimlich Maneuver…

1. Put the victim on the ground while supporting his/her head and neck
2. Alert others and call for help
3. Open the airway by head-tilt-chin-lift maneuver
4. Open the mouth and check for any foreign body
5. If foreign body not visible, give 2 normal breaths each lasting for 1 second
6. Give 30 chest compressions and 2 breaths for 5 cycles lasting 2 minutes
7. Check once in while the mouth when giving breaths if foreign body is visible
8. If visible, take it out
9. If breathing resumes, put the patient on a side lying position
10. Continue monitor the victim's condition

Tips at a Glance

1. Use hand whenever possible for search. Spades to be used cautiously to avoid inadvertently injuring a casualty.
2. Rescuer should not become victim in a rescue operation.
3. Standing in even shallow fast flowing water is extremely dangerous!
4. Always look for dangerous electric power around you.
5. Wrong choice of Fire extinguisher can be deadly.
6. Aim at the base of the fire, not at the flames!
7. All knots have a specific purpose and it is important to use right knot at right time.
8. Rescuers should not give up clothing, this might affect their health, welfare, or reduce their effectiveness.
9. Make an emergency move only when there is an immediate direct danger to the patient.
10. Because an unconscious patient may choke on his own vomit, the victim must be placed to the side until he regains consciousness.
11. If you are suspicious that the victim is suffering from a communicable disease that can endanger your safety, the first aider has the option NOT to perform artificial respiration. In this case you only perform external chest compression until help arrives.
12. Practice, practice and practice!!!
    CPR skills are not used regularly so there is a tendency to forget the procedures and the skills to deteriorate. Practice makes perfect.

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References:

1. *Health and first aid in community documental*, Vietnam Red Cross, 1998
2. *Responding to Emergency*, Australian Red Cross
3. *Essential First aid documental*, New Zealand Red Cross
4. *Traditional Fire Fighting Techniques*, Fire Services Department, Ministry of Social Welfare, Relief and Resettlement Department
5. *Basic Knots,* Fire Services Department, Ministry of Social Welfare, Relief and Resettlement Department
6. *First Aid Training, Course Material*, MRCS Training Unit, Myanmar
7. *First Aid, A Hand Book for Community Based Disaster Preparedness*, Gujarat State Disaster Management Authority and United Nations Development Programme, India
8. *Community Based Emergency Response Course (CBERC),* ADPC
9. *Collapsed Structure Search and Rescue (CSSR) Course,* ADPC
10. *Medical First Responder (MFR),* ADPC


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