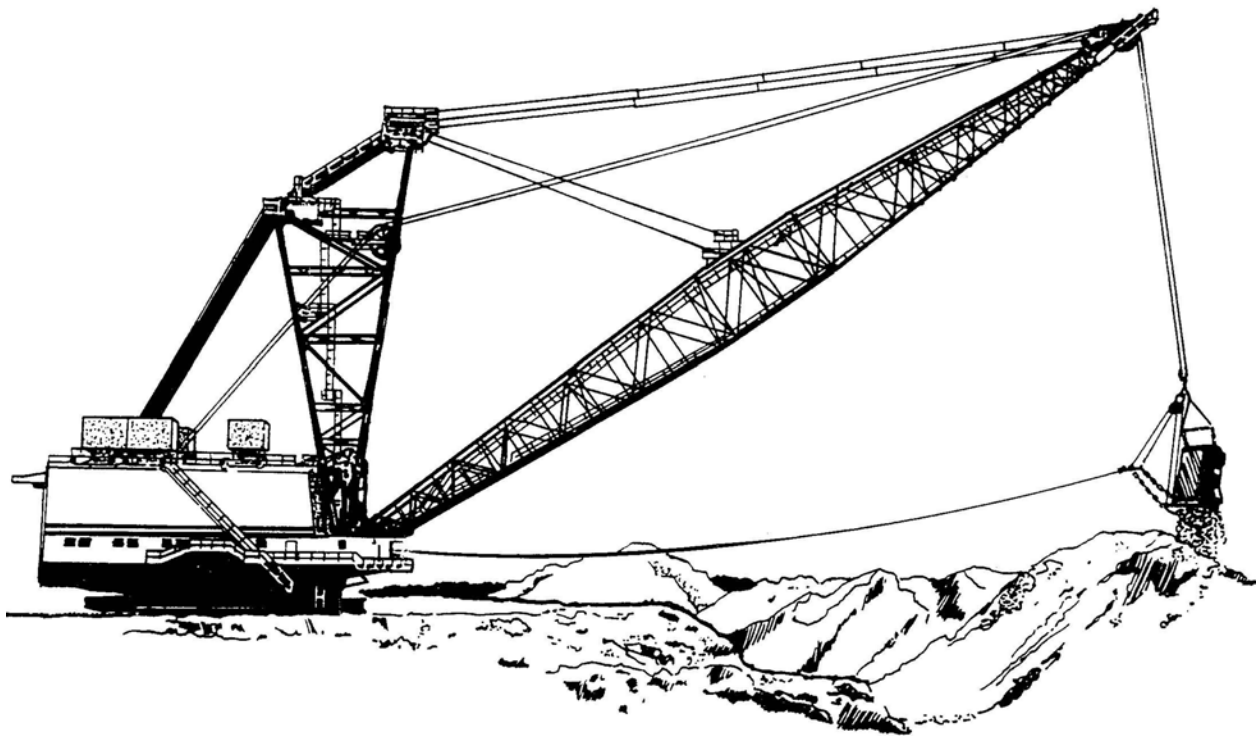


WEST VIRGINIA OFFICE OF MINERS' HEALTH, SAFETY AND TRAINING

40 HOUR Surface Miner Pre-Employment Training Program Study Guide



Unit 2

Intoxicants are not allowed on or within any surface operation.

There will be no smoking in any area where the possibility of a fire exists. (Example: “No Smoking Areas” whether a sign is posted or not; Refueling station, welding equipment, tipples and auger operations).

Apprenticeship requirements:

- A. Completion of a forty-hour course of instruction in surface mining.
- B. Satisfactory completion of an examination by the West Virginia Office of Miners’ Health, Safety and Training.

Surface Coal Miner Certification Requirements:

- A. At least six (6) months experience (108+ days).
- B. Successful completion of an examination conducted by the West Virginia Office of Miners’ Health, Safety and Training.

Penalties for Health and Safety Violations:

- A. Individual miner can be fined as much as two-hundred and fifty dollars (\$250.00)
This is called an “IPA” Individual Personal Assessment.
- B. Mine owner or operator may be fined as much as three thousand dollars (\$3,000.00).

Inspection of Coal Mines:

- A. State and Federal inspectors can inspect mine operations at any time without prior warning to the mine operator.
- B. Company officials and authorized representatives of the coal mines has the right to inspect for possible hazards or dangers.

Employment Regulations for Apprentice Miners:

- A. An apprentice must wear a red hat for six (6) months.
- B. An apprentice must be under the immediate supervision of a certified miner or foreman.
- C. An apprentice must know who their supervisors are at all times.
- D. A certified miner can have one (1) red hat under his/her supervision at any one time.
- E. A foreman can supervise as many as five (5) apprentice miners at any one time.

Unit 3

Two types of Surface Mines:

- A. Strip Mine – Removing overburden, removing coal.
- B. Auger Mine – When it becomes too expensive to remove overburden, a special machine is used to bore back into the coal seam and extract the coal from beneath the highwall.

Surface Mining Terms:

- A. Bench – Clearing and leveling a flat area to work from.
- B. Highwall – A wall created by the removal of overburden.
- C. Pit – Heart of surface mine where coal is being mined.
- D. Reclamation – Restoring and replacing of overburden following removal of coal.
- E. Spoil – Removed overburden placed aside to be used later in reclaiming the land.
- F. Tipple – Where the coal is cleaned and processed before being shipped to the consumer.
- G. Tram – The moving of a self-propelled piece of equipment from one place to another.

Surface Mining Steps (Ten (10) steps to surface mining):

- A. Cleaning the Surface.
- B. Drilling the Overburden.
- C. Blasting the Overburden.
- D. Stripping the Overburden.
- E. Cleaning the Coal.
- F. Shooting the Coal.
- G. Loading the Coal.
- H. Hauling the Coal.
- I. Preparing the Coal.
- J. Reclaiming the Land.

Surface Mining Machinery (know machinery shown in pictures):

- A. Auger
- B. Bulldozer
- C. Conveyor Belt
- D. Dragline
- E. Drilling Machine
- F. Front-end-loader
- G. Grader
- H. Haulage Truck
- I. Scraper (Pan)
- J. Shovel
- K. Supporting Service Truck

Unit 5

Five (5) Basic Types of Accidents:

- A. Struck by
- B. Struck against
- C. Caught between, in or on
- D. Strains and sprains
- E. Exposure to harmful conditions

Note: Slips and falls are the number one cause of accidents on surface jobs.

Safe Lifting Procedures:

- A. Keep feet apart (one alongside and one behind the object).
- B. Use a sit down (squat) position.
- C. Keep back straight – tuck chin in.
- D. Use the whole hand.
- E. Keep arms and elbows in close to body.
- F. Use leg and arm muscles with body weight over the feet.
- G. When turning – turn feet along with entire body – do no twist.
- H. Coordinate movements when lifting with another person.

Use Hand Tools Safely:

Common Defects:

- A. Mushroomed or cracked heads.
- B. Jagged edges.
- C. Cracked handles.
- D. Broken points.

Prevent all injuries to hands and fingers.

Points to remember:

- A. Inspect materials.
- B. Wear gloves (leather is the best).
- C. Grip all objects firmly.
- D. Keep fingers away from pinch points.
- E. Keep objects and tools free of grease, oil, dirt and water.
- F. Keep hands free of grease and oil.
- G. Coordinate movements with fellow workers.
- H. Use proper tool for the job.
- I. Keep hands away from moving machinery.
- J. Wear snug fitting clothes.

Communications:

Understand any and all instruction given to you. Acknowledge instructions by repeating them and wait for confirmation from boss.

Unit 8

Personal Safety Equipment Required:

- | | |
|-------------------|-------------------------|
| A. Hard Hat | E. Reflective vest |
| B. Safety shoes | F. Snug fitting clothes |
| C. Safety goggles | G. Respirator |
| D. Gloves | H. Ear plugs or muffs |

Use the proper tool for the job.

Cleaning Coal:

- A. Watch highwall and spoil pile for falling objects.
- B. Watch for machines operating in the pit.
- C. Watch for falling and flying material during blasting.

Good Housekeeping:

- A. Passageways clear in shops and yard.
- B. Maintenance shops kept in order.
- C. Clean up oil spills – keep walkways clear.
- D. Oily rags properly stored or disposed of.
- E. Keep tools in toolbox.
- F. Keep pit and auger sites clear of debris.

Unit 10

Equipment Safety (to be stressed).

- A. The largest single cause of non-fatal accidents in surface mining is due to slips and falls.
- B. Bulldozers have the worst record for slip and fall accidents.

Causes of slips and falls:

- A. Methods of mounting and dismounting.
- B. Walkways and steps.
- C. Footwear traction.
- D. Carelessness.

Hazards to be considered:

- A. Ladders
- B. Steps
- C. Hand Holds
- D. Walkways

Pre-operational Checks:

- A. Check tires for proper inflation.
- B. Check all safety equipment and guards.
- C. Check steering.
- D. Check brakes.
- E. Check windows for cracks and dirt.
- F. Check air pressure.
- G. Check all fluid levels:
 - 1. Hydraulic fluid.
 - 2. Engine oil.
 - 3. Coolant.
- H. Check visibility aids:
 - 1. Mirrors.
 - 2. Head lights.
 - 3. Running lights.
 - 4. Warning lights and flashers.
- I. Check back-up alarm and horn.
- J. Check for malfunctions.
- K. Check all gauge readings.
- L. Secure all loose items.

Maintenance Procedures:

- A. Securely check tracks or wheels.
- B. Support blades or buckets that must be raised.
- C. Raised truck beds must be blocked.

Parking for Repairs:

- A. Choose a dry, level spot.
- B. Always lower blade, bucket, or pan to the ground.
- C. Always set the parking brake.

Drills and Auger Safety:

Drills:

- A. Keep steps and walkways clear of mud and snow.
- B. Watch the road while tramming.
- C. Watch for overhead obstructions especially power lines.
- D. Level the rig using hydraulic jacks.
- E. Inspect the highwall.

Augers:

- A. Falling object protection.
- B. Improper construction/inspection.
- C. Hazards of inclement weather.
- D. Vegetation at the top.

Entering Auger Holes:

- A. Only reason for entering due to a broken flight.
- B. Certified person check for methane and oxygen deficiency.
- C. Certified person to check highwall at least twenty-five (25) feet on each side of auger.
- D. Assign a responsible person to watch highwall while entering or in the auger hole.
- E. Use lift with responsible person assigned to watch it.
- F. Cannot enter if there is two percent (2%) or more methane or less than nineteen-and-five tenths percent (19.5%) oxygen is present.
- G. Not to be used as a shelter from sun or rain.

Note: All auger operations must be inspected at least twice daily under normal conditions.

Shovels and Draglines:

Correct Procedures for Mounting and Dismounting:

- A. Notify operator before mounting and dismounting.
- B. Use ladders when required.
- C. Do not put your hands on crawler tracks.

Safe Practices for Oilers and Workers on Draglines and Shovels:

- A. Repair or inspect equipment when not operating.
- B. Only one (1) person does signaling.
- C. Mount and dismount only when equipment is stopped.
- D. Place yourself in a safe position when performing maintenance.
- E. Be sure clothing is snug fitting.

Major Hazards:

- A. Performing maintenance, cleaning or repairs.
- B. Getting on or off machine while in motion.
- C. Unauthorized personnel around machine without operator's knowledge.

Note: MSHA regulations state when equipment operator is present, men shall notify him/her before getting on or off.

Note: Communication Problems:

- A. Internal – Between two (2) persons or machine.
- B. External – Between operator and groundmen.

Front End Loader:

Prevent Accidents by These Precautions:

- A. Travel down grades at a safe speed.
- B. Be extra careful when tramping over wet, frozen, or rutted surfaces and loose areas around edges of embankment.
- C. Most useful machine, yet most dangerous on the job.
- D. Be alert and know where others are.
- E. Operate only the equipment that you are familiar with and authorized to.
- F. Ninety percent (90%) rollover accidents happen with loaders.
- G. Carry "NO" passengers.

Note: Wear your seatbelts!!!!

Unit 12

Haulage Safety and Terms:

- A. Haulage - The moving of something from one place to another; the moving of overburden and coal.
- B. Haulage Road - The road built at the mine site for use by heavily loaded trucks, other vehicles and equipment.
- C. On Road Haulage - Vehicles allowed to haul materials on public roads.
- D. Off Road Haulage - Vehicles much too large for use on public highways.

Safe Operation:

Unsafe Conditions Encountered:

- A. Driving too fast for road conditions.
- B. Limited visibility.
- C. Steep grades.
- D. Making the first trip of the day or first trip into a new area.
- E. Tailgating – three hundred (300) feet apart.
- F. Overloaded vehicle.

Note: Use lower gear and J-brakes on steep grades.

Haulage Road Conditions:

- A. Sufficient width:
 - 1. Single lane: 1 1/2 times the widest vehicle.
 - 2. Two (2) lane: 2 1/2 times widest vehicle.
- B. Adequate drainage.
- C. Proper maintenance.
- D. Free from obstructions or debris.
- E. Adequate signs and markings.

Safety Practices Haulage Roads:

- A. Loaded trucks have the right-of-way.
- B. Park only where other vehicles can pass easily.
- C. Pass only where permitted and when you have enough vehicle power.

Unit 13

Electrical Hazards Terms:

- A. Conductor - Any material which will allow current to flow through it easily.
- B. Insulator - Any material which will not allow current to flow through it easily.
- C. Ground - A conducting connection between an electrical circuit and earth.
- D. Power Cable - Any conductor or group of conductors used for electrical transmission.

Electrical Accident Causes:

- A. Improper grounding.
- B. Failure to wear protective equipment.
- C. Failure to cut power before doing work.
- D. Unqualified and unauthorized to perform electrical work.
- E. Inattention to power lines in work area.

Note: Lock and tag out all switches when performing electrical work.

Removing a Person From Electrical Contact:

- A. Cut power is the first consideration.
- B. Remove person with insulating materials.

Note: Do not grab the person causing yourself to become electrocuted.

Unit 14

Preparation Plant and Tipple Safety:

Terms:

- | | | |
|----|--------------------------------|--|
| A. | Bin or hopper | - Where the coal begins its trip to the tipple. |
| B. | Preparation Plant
or Tipple | - Where coal is cleaned, washed, sized, and
processed for use by the consumer. |
| C. | Car Dropper | - Person responsible for handling, coupling and
loading of coal cars at the tipple. |
| D. | Belt Take-up | - Device that keeps tension on the belt. |
| E. | Belt Drive | - Large unit that makes the belt move. |
| F. | Slate Picker | - Person responsible for removing large pieces of
slate and rock from the coal as it enters the tipple. |

Belt Safety:

- A. Accidents most often occur when:
 - 1. Inspecting or cleaning moving belts.
 - 2. Failure to use electrical lockouts when performing repair work.
- B. Always shovel in the same direction the belt is moving in.
- C. Wear snug fitting clothing.
- D. Never use a shovel with a hole in the hand grip.
- E. Keep long hair confined.
- F. Stop all the belt before shoveling at the head and tail pieces.
- G. Keep all guards in place.

Note: Conveyor belts are the number one cause of accidents at preparation plants.

Slips and Falls:

- A. Safe practices:
 - 1. Exercise caution when walking on icy or wet surfaces.
 - 2. Use handrails.
 - 3. Keep walkways clear and free of stumbling hazards.
 - 4. Never jump from elevated areas.
- B. Railroad car dropping – Safe Practices:
 - 1. Assume a safe body position.
 - 2. Position yourself where you can operate the brake on either car when possible.
 - 3. Assure coupler alignment is correct.
 - 4. Maintain adequate clearance between the edge of the car and obstacles.
 - 5. Pay attention and notify others of changes in operational routine.
 - 6. Assure brakes are set on remaining cars when dropping operations are being conducted.
 - 7. Avoid coupling cars on a curve.
 - 8. Never ride front of a trip.

Unit 16

Welding Safety:

Terms:

- A. Gas welding - Joining two or more pieces of metal by heating and melting with a flame.
- B. Arc welding - Joining two or more pieces of metal by heating and melting with an electric arc.
- C. Cutting - Separation of metal by heating and melting with a flame or arc.
- D. Flash burn - Injury caused to the eyes by looking at an arc welding operation without proper eye protection.

Gas Welding Components:

- A. Oxygen cylinder.
- B. Fuel gas cylinder.
- C. Pressure reducing regulators.
- D. Hoses: Two (2) - Red hose to fuel gas; green hose to oxygen.
- E. Torch – Welding and cutting heads are different, one type is for cutting and the other type is for welding.

Note: Need a separate regulator for each tank; they are different.

Note: All oxygen connections are right-handed thread.

Note: All oxygen and fuel gas cylinders should be properly labeled as to their content.

Handling Gas Cylinders:

Safety Checks Before Lighting:

- A. Leaks - Check all connections by using soapy water solution.
- C. Grease and oil should never be allowed to remain on welding equipment.
- D. Acetylene pressure - Never above 15 p.s.i.
- E. Oxygen pressure - Excessive pressures are also dangerous.
- F. Never open oxygen valve all the way when lighting the torch.
- G. Use only friction lighter to light the torch, never matches or other forms of open flames.

Transportation of Cylinders:

- A. Valves closed.
- B. Protective caps in place.
- C. Upright (not on side).
- D. Secured (chained or fastened to wall).
- E. Stored away from grease and oil.
- F. Never used as a roller or support.

Hazardous Materials:

Unsafe Materials to Weld Near:

- A. Flammable gas.
- B. Fuel vapors (gasoline).
- C. Liquids (gasoline, oil).
- D. Dust (coal dust).

Sources of Unsafe Materials:

- A. Auger holes.
- B. Refueling areas.
- C. Tipples.
- D. Parts of equipment (rubber tires).

Personal Protective Equipment:

- A. Dark lens goggles for gas welding.
- B. Dark lens shield for arc welding.
- C. Clean fire resistant clothing.
- D. Full sleeves.
- E. Long gauntlet or cuffed gloves (fire resistant).
- F. Collar buttoned.
- G. No pockets on shirt.
- H. Shirt outside of pants.
- I. No cuffs on pants.
- J. Safety shoes (leather preferred).

Unit 17

Fire Prevention and Control:

Fire Hazards:

- A. Open flame - Number one source of open flame is smoking and smoking materials used by people.
- B. Electrical failures.
- C. Inadequately maintained equipment or equipment failure.
- D. Improper equipment refueling methods.

Locations of Fire Fighting Equipment:

- A. Mobile equipment.
- B. Power shovels, draglines and other large equipment.
- C. Auxiliary equipment operated more than six hundred (600) feet from other equipment.
- D. At all permanent and temporary electrical installations.
- E. At all refueling and oil storage areas.
- F. At each location where welding, cutting or soldering is being done.
- G. On each floor available to all points in a tipple.

Principles of Fire Fighting:

- A. Warn fellow workers and sound alarm.
- B. Know location and use of fire fighting equipment.
- C. Cut power if it is an electrical fire.

Approaching the Fire:

- A. Direct the chemical spray or water at the base of the fire.
- B. Apply in a rapid sweeping motion starting at the edge and moving inward.
- C. Avoid being cut off by the fire.
- D. Never enter a smoke filled area unless equipped with a breathing tank and life line.

Unit 19

Highwall and Spoilbank Safety:

Terms:

- | | | |
|----|-----------------|---|
| A. | Scaling | - Removal of loose rock or other hazardous material from the highwall. |
| B. | Undercutting | - Removal of too much coal from beneath the highwall. |
| C. | Weathering | - Erosion or damage caused to the highwall by the weather (also spoilbank). |
| D. | Crack | - A separation of areas in the highwall. |
| E. | Slip | - A slide caused in a spoil bank by weather or improper spoil practices. |
| F. | Haulback Method | - Area is being backfilled and seeded at the same time coal is being mined. |

Hazardous Conditions of Highwall:

- A. Freezing and thawing.
- B. Loose material.
- C. Cracks.
- D. Erosion.
- E. Auger holes.
- F. Overhanging trees.

Inspection of Highwall:

- A. Must make at least two (2) inspections of highwall during normal conditions.
- B. Check both at the top and the face of highwall.
- C. Trees must be cut back at least ten (10) feet from the edge of the highwall.
- D. Cracks may be either vertical or horizontal in the highwall.
- E. Roadways should be at least sixty (60) feet from the highwall.

Safe Practices Around Highwalls:

- A. Proper highwall inspections`.
- B. Safe body position.
- C. Constant attention.

Note: Inspections should be roughly three hundred (300) feet to either side of the working area and marked with signs.

Warnings of Falling Material From Highwall or Spoilbank:

- A. Falling material (working) small at first.
- B. Visual movement of spoilbank (slow at first).
- C. Content of materials in spoilbank (unsafe if more than fifty percent (50%) is sand or fine materials.

Unit 20

Blasting Safety:

Methods and Terms:

- A. Blasting cap - A small amount of highly sensitive explosive in an aluminum or copper shell.
- B. Fertilizer - Anfo (blasting agent) – mixture of ammonium nitrate and fuel oil used as the main body of the explosive.
- C. Primer cord - Rope like material with a core of sensitive explosive used to detonate the primer core.
- D. Primer core - Small amount of explosive in a cartridge or container which sets off the main explosive.
- E. Magazine - A container or box used to store explosives. Must be constructed of metal on the outside, wood lined on the inside; must be two (2) each (one for explosives and one for detonators) separated at least twenty-five (25) feet apart.
- F. Blasting machine - Electrical device used to detonate the cap.
- G. Galvanometer - Instrument used to test continuity of electrical blasting circuit.
- H. Lead wires - Small electrical wires coming out of the blasting cap.

Lead Wire Protection:

- A. Shunt - Twisting of lead wires together allowing current to flow back to earth instead of traveling to the blasting cap.
- B. Must be protected from all power conductors.
- C. Kept at least twenty (20) feet away from bare power lines.
- D. Must be protected from thunderstorms and lightning.

Signals, Misfires, Overshooting and Undershooting:

Safe Practices:

- A. All blasting areas must be properly marked.
- B. Anyone remaining in the blast area must have adequate cover.
- C. An effective warning system must be provided.
- D. Never work around a misfire.
- E. Allow sufficient time for smoke, dust and fumes to clear.
- F. Never stand in front of a highwall or spoilpile during blasting.
- G. Overshooting – The use of too much explosives.
- H. Undershooting – Not using enough explosives.

Note: Both overshooting and undershooting causes the same problems. Weathering occurs sooner than usual and rock falls due to excessive breakage may also occur.

Radio Safety:

- A. Two-way radio equipment shall be turned off prior to the handling and use of electric detonators.
- B. Turn off two-way radio within three hundred and fifty (350) feet of a blasting area.

Unit 21

Health and Sanitation:

Dust and Dust Protection:

- A. Personal dust sampler - A device worn by the miner used to measure the amount of dust in a working area.
- B. Respirable dust - Small particles of coal dust, not visible to the naked eye, which are carried by breathing down deep into the lungs causing black lung.
- C. Respirator - Filtering device worn by the miner for protection for the lungs. Must be worn both over the nose and mouth and flat against the face for protection – change filters often.

Noise and Noise Protection:

- A. Prolonged exposure to loud noise will damage the hearing.
- B. For protection – use ear protection in the form of muff or plugs.

REVIEW FOR FIRST AID

Six Fundamentals of First Aid in Order:

- (1) Artificial Respiration
- (2) Control Bleeding
- (3) Treat for Physical Shock
- (4) Treat Wounds and Burns
- (5) Treat for Fractures and Dislocations
- (6) Transportation of Patient

Definitions:

First Aid - The emergency care for a person who is injured or sick, to relieve pain and prevent death.

Artificial Respiration - The breathing for a person whose normal breathing has slowed or stopped.

Four Types of Artificial Respiration:

- (1) Mouth to mouth (the best method)
- (2) Holger Nielson (back pressure arm lift)
- (3) Shaffer (prone or back pressure)
- (4) Sylvester

Steps for giving artificial respiration in order are:

- (1) Clear the air passage.
- (2) Lift up under neck, extend chin, pinch the nostrils together.
- (3) Inhale deeply, breathe into victims' mouth.
- (4) Remove mouth and listen for return airflow.

Causes for a person to lose his/her breathing:

- (1) Electric shock.
- (2) Drowning.
- (3) Suffocation.
- (4) Breathing poisonous gases (asphyxia).

Control of Bleeding:

Three types of blood vessels:

- (1) Arteries.
- (2) Veins.
- (3) Capillaries.

How to Recognize Bleeding:

Arteries - (Most serious bleeding) The blood spurts from the wound due to the beating or pulsating of the heart and the blood is bright red in color due to the oxygen in the blood. Arteries carry blood from the heart to various parts of the body.

Veins - The blood flows from the wound in a smooth steady stream and is dark red in color due to the carbon dioxide in the blood. Veins bring blood back to the heart and is under no pressure.

Capillaries - The blood just oozes from the wound and there is no great cause to be alarmed.

How to Control Bleeding:

Veins - In most cases direct pressure will stop venous bleeding. If it doesn't then a constricting bandage should be tied tightly in place below the wound.

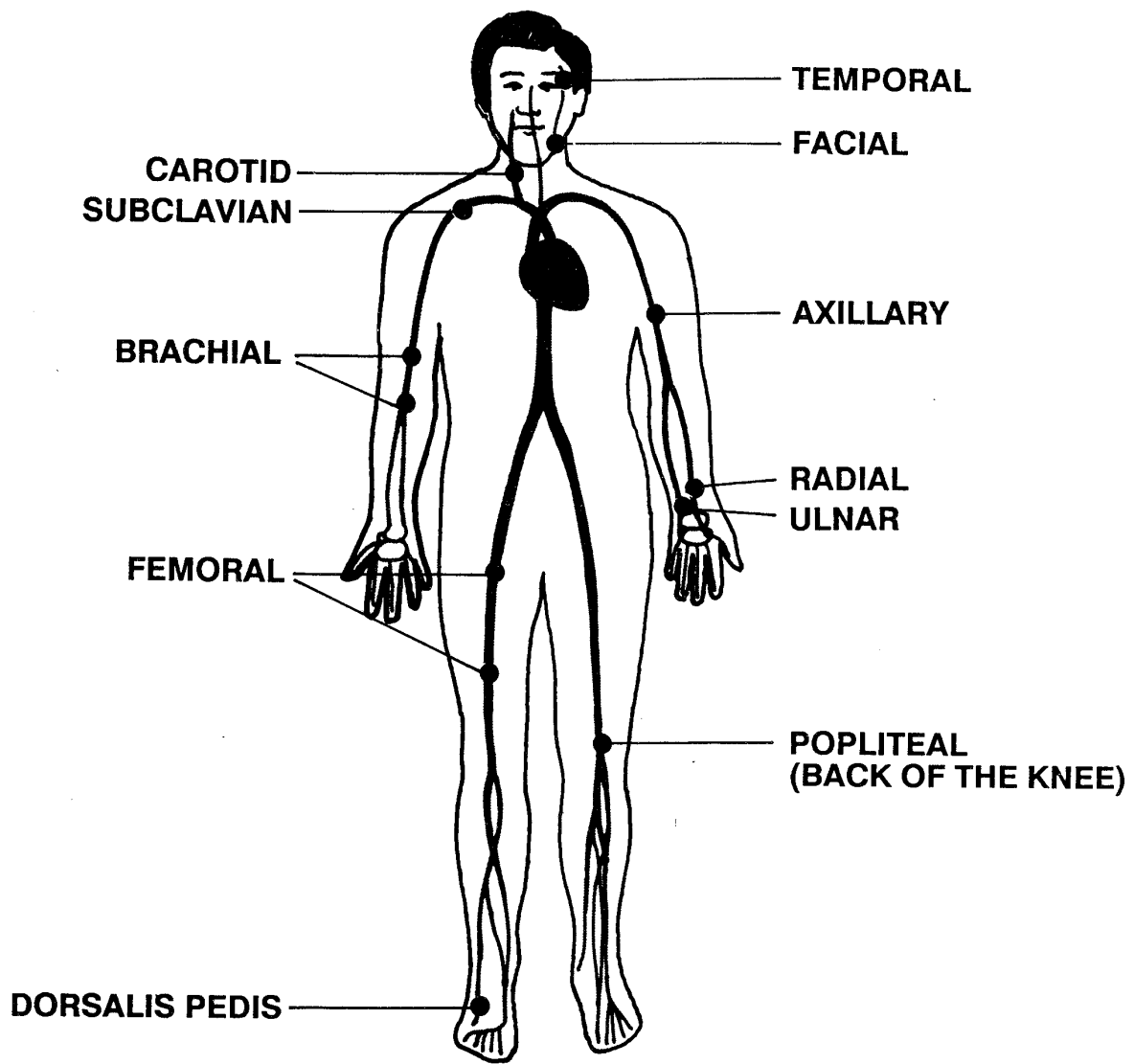
Arteries - Unless there is a small artery in the toe or finger direct pressure will not work. You should use digital pressure on a pressure point above the wound. Then tie a constricting bandage above the wound. Remember constricting bandages do not have to be used on pressure points. If this does not work then use a tourniquet as a last resort on a pressure point.

Remember location of pressure points. Twenty-two (22) in the body; eleven (11) on each side.

Definition of a pressure point: Where arteries pass close to the surface of the skin over a bony structure.

Steps in applying a tourniquet in order:

- (1) Use a strong wide piece of cloth.
- (2) Select a solid object, pad it well and wrap the arm or leg with it next to the arterial pressure point.
- (3) Tie a half-knot on the outside of the arm or leg.
- (4) Insert a strong stick over the half-knot and tie in place.
- (5) Twist stick to apply pressure until bleeding stops.
- (6) Tell doctor when and for how long tourniquet was applied.



NOTE: There are eleven (11) pressure points on the left side of the body and eleven (11) pressure points on the right side of the body (TOTAL: 22 pressure points).

Physical Shock:

Definition of physical shock: An upset of the nervous system.

Causes of physical shock:

Severe loss of blood, intense pain, severe or extensive injuries, burns anxiety, poisonous gases, sight of blood or injury to fellow workers.

Symptoms or how to recognize a person in shock:

- (1) Chalk like appearance.
- (2) Dull or anxious expression.
- (3) Shallow breathing.
- (4) Cold, moist skin.

Treatment of physical shock in order:

- (1) Lay the victim flat.
- (2) Elevate the feet six (6) inches higher than the head.
- (3) Clear mouth of foreign objects.
- (4) Loosen tight fitting clothing.
- (5) Keep patient warm and dry.

Wounds and Burns:

Definition of an open wound: Any break in the skin.

Types of open wounds:

- (1) Abrasions - Made by rubbing or scraping skin against object.
- (2) Incisions - Wounds made by sharp cutting edges; narrow but usually not deep.
- (3) Lacerations - Wounds made by contact with heavy blunt objects which tear skin and usually leaves rough edges around skin.
- (4) Rupture or hernia - The pushing out of an intestine through the wall of the abdomen.

Treatment of a rupture or hernia in order are:

- (1) Lay person flat on back with knees drawn up.
- (2) Center cravat bandage across thighs half way between hips and knees.
- (3) Pass the ends around and cross under bends of knees.
- (4) Carry ends around ankles and tie in front.
- (5) Place pillow or rolled up blanket under knees.
- (6) Place second bandage underneath pillow and bring ends up and tie over knee.
- (7) Place cold towel or wrapped ice bag over the injury.

DO NOT FORCE THE PROTRUSION BACK.

Review foreign objects in eyes, throat and ears.

Burns:

- (1) 1st degree - Reddening of the outer layers of skin.
- (2) 2nd degree - Reddened skin, blisters, damage to underlying tissues.
- (3) 3rd degree - Most serious – skin is destroyed, area is usually charred.

Treatment for burns in order:

- (1) Remove clothing from burned area, unless stuck to the skin.
- (2) Cover burn with cool moist dressing (4 to 6 layers).
- (3) Cover victim with a blanket.
- (4) Treat for physical shock.

Fractures and Dislocations:

Definition of:

Simple fracture - Bone may be cracked or broken but does not punch through skin.

Compound fracture - Bone is broken and one or both ends punch through skin.

Symptoms of fractures:

- (1) Localized pain.
- (2) Loss of function.
- (3) Deformity of affected limb.
- (4) Moderate or severe swelling.

Immobilize to keep patient from moving broken bone.

Fifteen (15) bandages to secure person to hardwood board for broken neck; thirteen (13) for broken back; eight (8) for broken pelvis.

Transportation:

Always transport patient in a lying down position.

Review use of stretcher.

Three (3) man lift and carry.

Location of first aid equipment:

Within one thousand (1,000) feet of the working pit, unless a ten (10) unit first aid kit is provided in the pit. When a ten (10) unit first aid kit is provided in the pit, such first aid equipment may be maintained within two thousand (2,000) feet of the pit.