UNITED STATES DEPARTMENT OF THE INTERIOR

BUREAU OF MINES

SALT LAKE CITY, UTAH

HEALTH AND SAFETY STATION

September 9, 1938.

Tile in Rollin file

Mr. R. R. Knill, Safety Engineer Union Pacific Coal Company, Rock Springs, Wyoming.

Dear Mr. Knill:

Enclosed you will find first aid problems and working outlines that were used in some of the first aid contests the past two weeks in this district.

When we met in Denver on August 26 you asked me to send you some problems and outlines, so it has been a pleasure to comply with your request.

With best wishes and kind personal regards, I remain

Very truly yours,

W. W. Kessler

Principal Safety Instructor.

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Three (3) minutes will be allowed for reading problem and assembling material.

A workman falls from a scaffold and is found with the following injuries: Simple fracture of right foot; compound fracture of the left hand, with bones protruding one (1) inch on palm of hand; a rupture which is indicated by a lump in the left groin; a cut one (1) inch long on the point of the right elbow; scalds of the right foot, leg, and thigh. The patient is unconscious and suffering from shock throughout the problem. Treat, carry patient 50 feet on stretcher, return to original position and unload patient from stretcher.

Working time ten (10) minutes.

CUTLINE FOR WORKING PROBLEM NO. 1

Compound fracture of left hand. (See pages 109 and 111 and figure 48.)

(a) Prepare and apply tourniquet loosely at pressure point on elbow or arm.

- (b) Straighten and support hand by taking hold of it on both sides of fracture.
- (c) Apply bandage compress to wound but do not tie knot over wound.

(d) Apply cravat bandage over compress.

- (e) Splint, to reach from middle of forearm to one (1) inch beyond finger tips. Pad well and place under palm and wrist.
- (f) Bandage, one triangular: Apply over splint and hand. (g) Sling, cravat bandage. (See page 43 and figure 10B.)
- 2. Simple fracture and scalds of right foot. (See pages 123-124 and figure 55.)

(a) Cover burns with picric acid gauze.

(b) Apply triangular bandage over gauze. (See figure 40.)

- (c) Splints: One splint 3-1/2 to 4 inches wide, long enough to reach from 1/2 inch beyond the heel to 1/2 inch beyond the toe. Pad well.
- (d) Bandage: Apply open triangular bandage over splint and foot.
- Cut one (1) inch long on point of right elbow. (See page 67 and 3. figure 26.)

(a) Place bandage compress over wound and tie.

- (b) Place cravat bandage of desired width over compress and tie.
- 4. Scalds of right foot, leg, and thigh. (See pages 124-125-133-135 and figure 62.)

(a) Apply picric acid gauze to burns.

- (b) Apply open triangular bandage over gauze on foot (before splint is applied).
- (c) Apply extra wide cravat bandages over gauze on leg and thigh.
- 5. Rupture in left groin. (See pages 135-137.)

(a) Raise knees toward the abdomen and support with pillow, folded blankets, or folded clothing.

(b) Place cloths, wet in cold water, over the rupture, left side.

(c) Do not bandage.

6. Shock. Patient unconscious during whole problem. (See pages 23-24.)

(a) Place patient in comfortable position, with head low.

(b) Remove foreign bodies from mouth. (c) Wrap in blankets, clothing, etc.

- (d) Pour aromatic ammonia on a cloth and place under nose.
- (e) Place wrapped hot water bottles, hot bricks, etc., around patient under covers.

(f) Rub extremities toward body under covers.

PROBLEM NO. I.

Three (3) minutes will be allowed for reading problem and assembling material.

A fireman falls from a ladder and is found in the following condition: He is lying straight; is able to move his head, shoulders, arms and hands, but is paralyzed from the waistline down. He has a cut two (2) inches long, moderate bleeding, on the inside of the right forearm, five (5) inches below the bend of the elbow; a cut two (2) inches long on the back of right hand, moderate bleeding; and a cut two (2) inches long, severe bleeding dark red blood, starting three (3) inches above the right ear and extending toward the top of the head. The patient is conscious throughout the problem, but his breathing is shallow and feeble; his pulse rapid and weak. He is covered with cold sweat and answers questions slowly. Treat and carry on improvised stretcher twenty-five (25) feet. Return to original position and unload from stretcher.

Working time, ten (10) minutes.

OUTLINE FOR WORKING PROBLEM NO. I

1. Cut two (2) inches long three (3) inches above right ear. (See page 56 and Figure 17.)

(a) Apply bandage compress over wound and tie.

- (b) Apply wide cravat bandage over compress and tie.
- 2. Cut two (2) inches long on inside of right forearm. (See Page 69 and Figure 26-C.)

(a) Apply bandage compress over wound and tie.

- (b) Apply cravat bandage over compress and tie.
- 3. Cut on back of right hand. (See Pages 70-71 and Figure 28.)

(a) Apply compress bandage over wound and tie.

(b) Apply open triangular bandage over compress and tie.

- (c) Apply triangular bandage sling. (See Page 43 and Fig. 10-A.)
- 4. Fracture of spine (broken back). (See Pages 113-116 and Fig. 50.)

(a) Use broken back splints. Pad well.

(b) Bandages: (13 cravats.)

1. Around splints and body just below armpits.

2. Around splints and body at lower part of chest.

3. Around splints and body at hips.

4 & 5. Around splints and diagonally around shoulders.

6 & 7. Around splints and diagonally around hips at crotch.

8 & 9. Around splints and upper thighs.

10 & 11. Around splints and legs just below knees.

12 & 13. Around splints and legs at ankles.

- (c) Knots to be tied on outside near splints.
- 5. Shock: Patient conscious. (See Pages 23-24.)

(a) Place patient in comfortable position with head high. (Severe bleeding on head.)

(b) Remove foreign bodies from mouth.

(c) Wrap in blankets, clothing, etc.

(d) Give patient aromatic spirits of ammonia (1 teaspoonful in a half glass of water), hot coffee, hot tea, or hot water.

(e) Place wrapped hot water bottles, hot bricks, etc., around patient under covers.

(f) Rub extremities toward body under covering.

6. Transportation with improvised stretcher. (See Pages 164-183 and Figures 84-95.)

(a) Prepare stretcher from blankets, jumpers, etc.

(b) Test stretcher.

(c) Load patient on stretcher.

(d) Carry patient on stretcher and return to original position.

(e) Unload patient.

TEAMS SHOULD NOT BE PENALIZED FOR DOING MORE THAN OUTLINED ABOVE UNLESS IT IS DETRIMENTAL TO THE PATIENT.

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Three (3) minutes will be allowed for reading problem and assembling material.

A refinery worker is injured by an explosion, falls from a platform, and is injured as follows: Forward dislocation of right hip; a simple fracture of the left elbow; and burns on head, face and neck. He also has a cut two (2) inches long, severe bleeding, dark red blood, on the inside of the left forearm five (5) inches below bend of elbow. The patient is unconscious throughout the problem. Treat and carry on stretcher twenty-five (25) feet, return to original position, and unload from stretcher.

Working time, ten (10) minutes.

OUTLINE FOR WORKING PROBLEM

- 1. Cut two (2) inches long on inside of left forearm. (See Page 69 and Figure 26C.)
 - (a) Apply compress bandage over wound and tie.(b) Apply cravat bandage over compress and tie.
 - (c) Sling will be applied ith albor dressing given below.
- 2. Burns of head, face, and neck. (See Pages 124-126 and Figure 56.)
 - (a) Apply picric acid gauze to burns, placing gauze behind ears.
 - (b) Apply two open triangular bandages to head and face, cutting hole for nose in face bandage.
 - (c) Apply cravat bandage around neck and tie.
- 3. Simple fracture of left elbow. (See Pages 94-96 and Figure 43A.)
 - (a) Support limb by taking hold of it on both sides of fracture.
 - (b) Splints: 2 splints of unequal length, four (4) inches wide, nailed or tied together to form an L. Pad well.
 - 1. To reach from armpit to elbow.
 - 2. To reach from elbow to tip of little finger.
 - (c) Bandages: (3 cravats.)
 - 1. Around upper end of splint and arm.
 - 2. Around arm and splint above elbow, cross in front of bend of elbow, carry around splint and forearm, then tie.
 - 3. Around wrist and hand, tying on back of hand.
 - (d) Apply cravat bandage sling. (See Page 43 and Figure 10.)
- 4. Forward dislocation of right hip. (See Pages 99-100 and Figure 44.)
 - (a) Splints: Place patient on board seven (7) feet long, twelve (12) inches wido, or broken back splint.
 - (b) Support limb in line of deformity (foot and thigh turned out) with large pad made of clothes, blankets, etc.
 - (c) Place a small pad between the feet.
 - (d) Bandages: (5 cravats.)
 - 1. Around board and upper part of chest.
 - 2. Around board and body at hips.
 - 3. Around board end thighs, just above knees.
 - 4. Around board and ankles.5. Around instep of right foot and sole of left foot, tying/
 - (e) Knots (excepting bandage on feet) to be tied on outside near edge of board or splint.
- 5. Shock: Patient unconscious. (See Pages 23-24.)
 - (a) Place patient in comfortable position with head low.
 - (b) Remove foreign substances from mouth.(c) Wrap patient in blankets, clothing, etc.
 - (d) Pour aromatic ammonia on a cloth and let patient inhale fumes.
 - (e) Place wrapped hot water bottles, hot bricks, etc., around patient under covers.
 - (f) Rub extremities toward body under covers.
- 6. Transportation with stretcher. (See Pages 164-182 and Figures 87-95.)
 - (a) Test stretcher.
 - (b) Load patient on stretcher.
 - (c) Carry patient on stretcher and return to original position.
 - (d) Unload patient.

Three (3) minutes will be allowed for reading problem and assembling material.

A timberman is hit by a haulage locomotive and is injured as follows: Compound fracture of right thigh, on inside and four (4) inches above knee; a dislocation of left shoulder; and a simple fracture of the lower jaw. There is also a wound in the palm of the right hand with bright red bleeding. The patient is unconscious and suffers from shock throughout problem.

Prepare for transportation but do not load on stretcher.
Working time ten (10) minutes.

OUTLINE FOR WORKING PROBLEM NO. 2

- 1. Wound palm right hand with arterial bleeding. (See pages 46-54, 69-70, and figure 27)
 - (a) Digital pressure over wrist.

(b) Tourniquet over wrist.

- (c) Bandage compress and cravat bandage around hand.
- 2. Compound fracture right thigh. (See page 101-118-120 and figure 52)
 - (a) Tourniquet loosely over pressure point on thigh.

(b) Straighten and support leg.

- (c) Bandage compress and wide cravat bandage over wound. (See page 79 and figure 36)
- (d) Splints two of unequal length, pad well forming arch over wound.
- (e) Bandages 7 cravats, knots to be tied on outer splint.
- 5. Dislocation of left shoulder. (See pages 93-94 and figure 42)
 - (a) Large pad under left arm from armpit to elbow.
 - (b) Cravat bandage around arm and pad, cross and tie on pad on opposite side of body.
 - (c) Arm in triangular sling.
- 4. Simple fracture of lower jaw. (See page 105 and figure 41)
 - (a) Bandages 2 cravats.
 - (b) No wedge between teeth.
- 5. Shock: Patient unconscious during whole problem. (See pages 23-24)
 - (a) Place patient in comfortable position with head low.

(b) Remove foreign substances from mouth.

(c) Cover and apply hot applications and rub extremities.

(d) Give stimulant by inhalation.

TEAM SHOULD NOT BE PENALIZED FOR DOING MORE THAN OUTLINED ABOVE UNLESS IT IS DETRIMENTAL TO THE PATIENT.

Three (3) minutes will be allowed for reading problem and assembling material.

An oil field worker falls from a derrick and is found in the following condition: He has a simple fracture of the right forearm and a fractured pelvis. Dark red blood is issuing from the back of the left leg six (6) inches above the ankle; a diagonal cut one (1) inch long across the left eyebrow; and eyelid. The patient's breathing is shallow and feeble; he is covered with cold sweat; his pulse is rapid and weak; and he answers questions slowly. Treat and prepare for transportation, load on stretcher.

Working time ten (10) minutes.

OUTLINE FOR YCOKING PROBLEM NO. 2

1. Cut on back of left leg. (See Pages 82-83 and Figure 38.)

(a) Place bandage compress over wound and tie.

- (b) Place wide cravat bandage over compress and tie.
- 2. Cut one (1) inch long on left eyebrow and eyelid.

(a) Place bandage compress over wound and tie away from eye.

- (b) Place cravat bandage over compress as for wound of eye, and tie.
- 3. Fractured pelvis. (See Pages 116-118 and Figure 51.)

(a) Apply wide cravat bandage (about 6 inch) around hips and tie tightly.

(b) Splints: Use broken back splint or board seven (7) ft. long and twelve (12) inches wide. Pad well. Padding must also be applied between legs if board is used.

(c) Bandages: Nine (9) if broken back splint; six, (6) if board is used.

1. Around splint and upper part of body just below armpits.

2. Around splint and body at lower part of chest.

3. Around splint and hips over wide bandage.

4 & 5. Around splint and thighs.

6 & 7. Around splint and legs just below knees.

8 & 9. Around splints and legs just above ankles.

- (d) Knots to be tied on outer side along splints.
 (Bandages 5, 7, and 9 not used with board.)
- 4. Simple fracture of right forearm. (See Pages 108-109 and Figure 47.)

(a) Straighten and support limb by taking hold of it on both

sides of fracture until splint is applied.

(b) Splint: One (1) long enough to reach from point of elbow to tip of little finger. Pad well, and place on inside of forearm.

(c) Bandages: (2 cravats.)

1. Around splint and forearm, just below elbow.

2. Around splint, wrist and hand.

- (d) Sling: Cravat bandage. (See Page 43 and Figure 10B.)
- 5. Shock: Patient conscious. (See Pages 23-25.)

(a) Place patient in comfortable position with head low.

(b) Remove foreign substances from mouth.

(c) Wrap patient in blankets, clothing, etc.

(d) Give patient aromatic ammonia (1 teaspoonful in a half glass of water,) hot tea or hot coffee.

(e) Place wrapped hot water bottles, hot bricks, etc., around patient under covers.

(f) Rub extremities toward body under covers.

TEAMS SHOULD NOT BE PENALIZED FOR DOING MORE THAN OUTLINED ABOVE UNLESS IT IS DETRIMENTAL TO THE PATIENT.

Three (3) minutes will be allowed for reading problem and assembling material.

A workman who is crushed between cars is found in an unconscious condition, his face is covered with cold sweat; his eyelids droop and his pulse is rapid and weak; the middle of his left leg is swollen and a grating sensation can be felt; blood is spurting from a wound three (3) inches long across the inside, center of his left forearm; his right shoulder is rigid and swollen and the arm stands off about two (2) inches from the body; there is a strain of the muscles of the calf of his right leg;. Carry 50 feet on a stretcher, return to base and unload patient from stretcher.

Working time ten (10) minutes.

OUTLINE FOR WORKING PROBLEM NO. 1

1. Arterial Bleeding.

- (a) Apply finger pressure to pressure point on inside of arm or elbow.
- (b) Apply, tighten and secure tourniquet on arm pressure point.

2. Shock.

- (a) Shock treatment should be given throughout the problem by lowering head, covering, rubbing, loosening clothing, applying heat and cleansing mouth.
- (b) Stimulant should not be given until the tourniquet is tightened and secured and then only by inhalation method as patient is unconscious. (Shock treatment on Page 23).
- (c) Test all hot applications and stimulant before application to patient.

3. Wound.

- (a) Compress over wound on left forearm must be a large one and may be applied before the tourniquet is applied.
- (b) Cravat bandage covering over compress on forearm and triangular sling (Page 69) may be applied at any time before lifting onto stretcher.

4. Fracture.

- (a) Simple fracture of left leg must be supported from beginning of problem.
- (b) Dressing for simple fracture of left leg. (Pages 121-122).
- 5. Dislocation.
 - (a) Dressing for dislocation of right shoulder (Page 93).

6. Strain.

(a) The strain should be troated as soon as a man is available to do so. (Page 91). Rub with alcohol and water or with witch-hazel.

7. Stretcher and Transportation.

- (a) The stretcher may be prepared and tested while the patient is being treated.
- (b) Lift patient from the right side.

(c) Load patient on stretcher.

(d) Transport patient on stretcher 50 feet and return to base.

(e) Unload patient from stretcher.

Three (3) minutes will be allowed for reading problem and assembling material.

A fireman who has been removed from under a fall of brick has the following injuries: wound two (2) inches long on left knee; wound on palm of right hand with arterial bleeding. He has a simple fracture of the left forearm. He also has a compound fracture of the right thigh with the bone protruding one-half (1/2) inch on inner side of thigh five (5) inches above knee. The patient is conscious but is suffering from shock. Treat and prepare for transportation. Load on improvised stretcher but do not carry.

Working time ten (10) minutes.

OUTLINE FOR WORKING PROBLEM NO. 2

1. Arterial bleeding on palm of right hand.

(a) Apply digital pressure at wrist, elbow or arm.

(b) Apply tourniquet at wrist.

- (c) Apply compress and cravat bandages as shown on page 69, figure 27.
- (d) Place forearm in triangular bandage sling, page 44, fig. 10.

2. Compound fracture of right thigh.

(a) Support fracture.

(b) Cover wound or protruding bone with compress and wide cravat bandage as on page 79, 80 and figure 36. (No knots should be tied over wound)

(c) Apply tourniquet loosely at thigh pressure point.

(d) Apply two well padded splints and seven cravat bandages as on pages 118, 119 and figure 52. (Padding on inner side of thigh should form an arch over protruding bone)

3. Wound on left knee.

- (a) Apply compress and cravat bandages as shown on page 81 and figure 37.
- 4. Simple fracture of left forearm.

(a) Support fracture.

- (b) Apply splint well padded and two cravat bandages as shown on pages 108 and 109, and figure 47.
- (c) Place arm in cravat sling.

5. Shock.

(a) Cleanse mouth.

(b) Loosen clothing around neck and waist.

(c) Cover patient.

(d) Use heat applications.

- (e) Give stimulants by mouth or by inhalation.
- (f) Rub extremities.

6. Prepare for transportation.

(a) Stretcher made from blankets and pipes.

(b) Test stretcher.

(c) Load patient on stretcher.

TEAMS SHOULD NOT BE PENALIZED FOR DOING MORE THAN OUTLINED ABOVE UNLESS IT IS DETRIMENTAL TO THE PATIENT.

Three (3) minutes will be allowed for reading problem and assembling material.

A miner has been overcome by powder smoke and removed to fresh air; he is apparently not breathing and has no indication of a pulse. He has a deep diagonal cut, two (2) inches long, on the outer side of the left forearm, six (6) inches below the point of the elbow, and a simple fracture of the right side of lower jaw. Dark red blood is also issuing from the front of the right thigh, five (5) inches above the knee. Revive the patient by five (5) men giving artificial respiration for one (1) minute each, change of operators to be made without breaking rhythm. Patient regains consciousness at end of artificial respiration, but suffers from shock throughout problem. Treat and prepare for transportation to load on stretcher.

Working time ten (10) minutes.

OUTLINE FOR WORKING PROBLEM NO. 3

- 1. Resuscitation: Patient unconscious, not breathing due to carbon monoxide gas. Schaefer method. (See pages 32-33-35-36 and figure 6.)
 - (a) Turn patient on face, supporting and protecting other injuries.

(b) Remove foreign substances from mouth.

(c) Pull tongue forward and keep in this position.

(d) Turn head to one side, resting it on patient's right forearm.

(e) Extend other arm forward.

(f) Start artificial respiration (15 times per minute).

(g) Loosen tight clothing around neck and waistline.

- (h) Five (5) men to give artificial respiration one (1) minute each. Change of operators to be made without breaking rhythm.
- 2. Cut on front of right thigh, five (5) inches above knee. (See pages 79-80 and figure 36.)

(a) Place bandage compress over wound and tie.

- (b) Place wide cravat bandage over compress and tie.
- 3. Cut two (2) inches long on cutside of left forearm, six (6) inches below point of elbow. (See page 69 and figure 26C.)
 - (a) Apply a compress bandage over wound and tie.
 - (b) Apply cravat bandage over compress and tie.
 - (c) Place injured arm in triangular bandage sling.
- 4. Simple fracture of right side of lower jaw. (See page 105 and figure 41.)

(a) Bandages: Two (2) cravats.

- Center of cravat bandage on front of chin, pass around neck and tie.
- 2. Center of cravat bandage on bottom of chin, pass to top of head and tie.
- (b) Tie ends of bandages together on back of head.
- (c) No wedge to be placed between teeth at any time.
- 5. Shock. Patient conscious after artificial respiration. (See pages 23-24.)
 - (a) Place patient in comfortable position with head low.

(b) Remove foreign substances from mouth,

(c) Wrap in blankets, clothing, etc.

- (d) Let patient inhale aromatic ammonia fumes until end of artificial respiration. Then give aromatic ammonia (1 teaspoonful in a half glass of water), hot tea, or hot coffee.
- (e) Place wrapped hot water bottles, hot bricks, etc., around patient under covers.
- (f) Rub extremities toward body under covers.

Three (3) minutes will be allowed for reading problem and assembling material.

A fireman has been overcome by carbon monoxide gas while fighting a fire. He has been rescued and removed to fresh air.

Revive the patient by five (5) different men performing artificial respiration (by Schaefer or Prone Pressure method) for one (1) minute each, change of operators to be made without breaking rhythm. Patient regains consciousness at end of artificial respiration.

Patient should be turned over on back after completion of artificial respiration. Patient suffers from shock throughout problem. Treat and prepare for transportation the load on stretcher.

Working time seven (7) minutes.

OUTLINE FOR WORKING PROBLEM NO. 3

1. RESUSCITATION: Patient unconscious, not breathing due to carbon monoxide gas. Schaefer or Prone Pressure method. (See Pages 32-38 and Figure 6.)

(a) Turn patient over on abdomen.

(b) Remove foreign substances from mouth.

(c) Turn head to one side, resting it on forearm.

(d) Extend other arm forward.

(e) Loosen tight clothing around neck and waistline.(f) Start artificial respiration, 15 times per minute.

(g) Wrap in blankets, clothing, etc.

(h) Place wrapped hot water bottles, hot bricks, etc., around patient under cover or covers preferably.

(i) Five (5) different men to give artificial respiration one (1) minute each. Change of operators to be made without breaking rhythm.

(j) Patient should be turned over on back after artificial respiration.

(Team judge or judges are required to use special form attached to discount sheet for timing each team member during artificial respiration).

2. SHOCK:

- (a) Patient unconscious at start of problem.
- (b) Patient conscious after artificial respiration.

(c) Remove foreign substances from mouth.

(d) Loosen tight clothing around neck and waistline.

(e) Wrap in blankets, clothing, etc.

(f) Let patient inhale aromatic ammonia fumes until end of artificial respiration. Then give aromatic ammonia (one (1) teaspoonful in one half glass of water), hot tea, or hot coffee. Team member should test aromatic ammonia fumes before giving it to patient while he is unconscious.

(g) Place wrapped hot water bottles, hot bricks, etc., around patient under covers. (Team judge or judges to see that team member test heat applications before applying them to patient).

(h) Rub extremities toward heart under cover.

TEAMS BHOULD NOT BE PENALIZED FOR DOING MORE THAN OUTLINED ABOVE UNLESS IT IS DETRIMENTAL TO THE PATIENT.

RESUSCIPATION

PROBLEM NO. 3

Three (3) minutes will be allowed for reading problem and assembling material.

A motorist has been evereeme by earbon monoxide gas from the exhaust of his automobile. He has been rescued and removed to fresh air.

Revive the patient by five (5) different men performing artificial respiration (by Schaefer or Prone Pressure method) for one (1) minute each, change of operators to be made without breaking rhythm. Patient regains consciousness at end of artificial respiration. Patient should be turned over on back after completion of artificial respiration.

Patient suffers from shock throughout problem. Treat and prepare for transportation but do not lead on stretcher.

Working time seven (7) minutes.

OUTLINE FOR WORKING PROBLEM NO. 3

1. RESUSCITATION: Patient unconscious, not breathing due to carbon monoxide gas. Schaefer or Prone Pressure method. (See Pages 32-38 and Figure 6.)

(a) Turn patient over on abdomen.

- (b) Remove foreign substances from mouth.
- (c) Turn head to one side, resting it on forearm.

(d) Extend other arm forward.

- (e) Loosen tight clothing around neck and waistline.
- (f) Start artificial respiration. 15 times per minute.

(g) Wrap in blankets, clothing, etc.

- (h) Place wrapped hot water bottles, hot bricks, etc., around patient under cover or covers preferably.
- (i) Five (5) different men to give artificial respiration one (1) minute each. Change of operators to be made without breaking rhythm.
- (j) Patient should be turned over on back after artificial respiration.

(Toam judge or judges are required to use special form attached to discount sheet for timing each team member during artificial respiration).

- SHOCK:
 (a) Patient unconscious at start of problem.
 - (b) Patient conscious after artificial respiration.

(c) Remove foreign substances from mouth.

(d) Loosen tight clothing around neck and waistline.

(e) Wrap in blankets, clothing, etc.

(f) Let patient inhale aromatic ammonia fumes until end of artificial respiration. Then give aromatic ammonia (one (1) teaspoonful in one half glass of water), hot tea, or hot coffee. Team member should test aromatic ammonia fumes before giving it to patient while he is unconscious.

(g) Place wrapped hot water bottles, hot bricks, etc., around patient under covers. (Team judge or judges to see that : a teem member test heat applications before applying them to patient).

(h) Rub extremities toward heart under cover.

TEAMS SHOULD NOT BE PENALIZED FOR DOING MORE THAN OUTLINED ABOVE UNLESS IT IS DETRIMENTAL TO THE PATIENT.

TIE PROBLEM

Three (3) minutes will be allowed for reading problem and assembling material.

A fireman falls from a ladder and is found in the following condition: He is lying straight; is able to move his head, shoulders, arms, and hands, but is paralyzed from the waistline down. He has a cut two (2) inches long, on the inside of the left forearm, five (5) inches below the bend of the elbow; a cut two (2) inches long on the back of the left hand, moderate bleeding; and a cut two (2) inches long, severe bleeding dark red blood, starting three (3) inches above the right ear and extending toward the top of the head. There is also a large wound on the left elbow running parallel with the member and extending two (2) inches above and two (2) inches below the point of the elbow. The patient is conscious throughout the problem, but his breathing is shallow and feeble; his pulse rapid and weak. He is covered with cold sweat and answers questions slowly. Treat and carry on improvised stretcher twenty-five (25) feet. Return to original position and unload from stretcher.

Working Time Ten (10) minotes.

QUESTIONS FOR EXAMINATION IN FIRST LID 1982

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- 1. How do you distinguish between arterial and veinous bleeding?
- 2. Point out with your fingers all points of pressure on the arterial system that is used by a first aid man for controlling arterial bleeding.
- 3. Count the number of pressure points on each side of the body.
- 4. Apply tourniquets to eight (8) of these pressure points.
- 5. How long would you leave a tourniquet tight? What would you do at the end of this period?
- 6. Name the three methods of controlling bleeding.
- 7. How would you treat an open wound?
- 8. Name three (3) different types of wounds?
- 9. After treating a man for a slight wound, what would you tell him to do? What would you do?
- 10. How does a man look when he has physical shock? What are the causes of shock? How do you treat physical shock?
- 11. Place on first aid dressings for the following injuries:

 Fractured arm

 Fractured thigh

 Fractured collar-bone

 Fractured olbow

 Fractured knee-cap

 Fractured Forearm

 Fractured leg

 Fractured back

 Fractured rib

 Fractured jaw
- 12. Place on a dressing for an injured eye.
- 13. Place on dressing for the following dislocations:
 Dislocated shoulder Dislocated hip
- 14. How would you rescue a man from an electric wire? Domonstrate at least three (3) methods.
- 15. When would you give artificial respiration? Domonstrate the Schaofer method of artificial respiration.
- 16. How long would you continue artificial respiration before stopping?
- 17. Demonstrate the United States Bureau of Mines Standard 4-Man Lift.

	To be used by the instructor only.
Company's	Is the applicant entitled to The Union Pacific Coal First Aid Certificate.
	Buroau of Minos Scrtificate No.

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REVIEW QUESTIONS

l. What is first Aid? 2. What is the purpose of First Aid? 3. What are the limitations of First Aid? 4. Of what is the body composed? 5. What is the skeleton? 6. What does it do? 7. Of what parts is the head made up? 8. Into what two parts is the trunk divided? 9. What does each contain? 10. Describe the spinal column. ll. Describe the ribs. 12. Describe the Breast bone. 13. Describe the Pelvis. 14. What are the extremeties? 15. What is a joint? 16. What movements do joints have? 17. Give example of ball and socket joint. 18. Give example of hinge joint. 19. That are ligaments? 20. What are tendons? 21. What are muscles? 22. What is the purpose of muscles? 25. What is the importance of muscles in reference to fractures and dislocations? 24. What is a sprain? 25. How is it caused? 26. What are the symptoms? What is the treatment? 28. Is a severe sprain a slight injury - Why? 29. What is a dislocation? 30. How are dislocations caused? 31. What are the symptoms? 32. What is the treatment? 33. Under what circumstances would you be justified in trying to reduce a dislocation? 34. What would you proceed to do? Describe treatment for dislocation of lower jaw, fingers, toes, shoulders, 35. 36 . What are the common injuries without a break in the skin? 37. Describe bruises. 38. What are the symptoms of bruises? 39. How would you treat them? 40. In a severe bruise what else would you look for? 41. Tell the difference between a bruise, sprain, dislocation. 42. What is circulation? 43. What is the purpose of the heart? 44. Describe its action. 45. What is the heart beat?

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How often does it occur?

What are the different classes of blood vessels? 470 48. Describe each. 49. What are the characteristics of bleeding from an artery? 50. In bleeding from an Artery where would you press and why? 51. Where would you press to stop arterial bleeding from the scalp? 52. Side of head above, lower part of head and neck, shoulder, armpit, arm, hand. 53. Palm of hand, thigh, leg or foot. 54. Tell exactly what you would do to stop bleeding from a large artery. 55. What are the characteristics of capillary bleeding? 56. How would you stop capillary bleeding, Why? 57. What are the characterisities of veinous bleeding? 58. How would you stop bleeding from veins? 59. What is blood? 60; What doss it do? 61. Describe natures method of stopping bleeding? 62. What methods are used to control bleeding? 63. Describe elotting of blood. 64. What helps to make blood clot? 65. What are the symptoms of a great loss of blood? 66. What is a Tournaquet? 67. What are its uses? 68. What is its danger? 69. Where would you apply 1t? 70. What is treatment of internal bleeding? 71. What is the difference between bleeding from lungs and stomach? 72. Show course of arteries and pressure points? 73. Suppose you have to care for an injured person. What would you do first? 74. When should you send for a doctor or take the injured person to a doctor? 75. What about tight clothing? 76. When would you move en injured person? 77. What are the dangers of moving an injured person? 78. What do you know about giving an injured person water or stimulants? 79. Should clothing always be removed? 80. When would you remove some of the clothing and how would you do it? 81. When does shock occur? 82. What is shock? 85, What is the cause of shock? 84. What is the prevention of shock? 85. What are the symptoms of chock? 86. What is the treatment of shock? 87. Explain the use of heat, stimulants and position in shock, 88. What are the uses of bandages? 89. What is the advantage of the triangular bandage for first aid purposes? 90. What is the size of the triangular bandage? 91. What precautions must be taken in putting on bandages? 92. For what purposes are bandages used? 93. Why should you not use adhesive plaster? 940 What is a wound? 95. What is the special danger to be feared in a wound?

96. How does the skin protect the body?

97. How can germs enter the body?

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98
     Where are the germs found?
     What does disinfection mean?
1000
     What happens in a wound if going gain entrance to it?
     What happens in a wound if they do not gain entrance?
lol.
102.
     How does free bleeding diminish the danger of wound infection?
103
     What is inflamation?
1045
     What is blood poisoning?
     How would you prevent pus germs entering a wound?
105
106. What are the symptoms of inflamation in a wound?
107. What are the rarities of wounds?
108. How would you treat an ordinary wound?
109. Why should one try to make a trivial wound bleed?
110. What dressing would you prefer for a wound?
111. What do you understand by a foreign body?
112. How would you treat a wound in which there is a foreign body?
113. How would you treat an eye wound?
114. How would you remove a speck from the eye?
115. What are the dangers of removing foreign bodies from the eye?
116. What are poisoned wounds?
117.
     What are infected wounds?
118. What would you do for snake bites?
119. What is lockjaw?.
120. How is it prevented?
121. What is a fracture?
122. What is a simple fracture?
123. What is a compound fracture?
124. How would you prevent a simple fracture from becoming compound?
125. How would you recognize a simple fracture?
126. How would you treat a simple fracture?
127. What is a splint?
128. From what materials may a splint be made?
129. What are the precautions in applying splints?
150. Show treatment for fracture upper arm, forearm, wrist, fingers, crushed hand,
           foot, lower leg, thigh, knee cap, collar bone, ribs, skull, lower jaw,
           back, and nose,
131.
     What is a sling?
132. What kinds?
133. How applied?
134. What is a burn?
135. What is a soald?
156. How many degrees of burns?
137.
    Describe them.
158. What is a dry burn?
139. What is a wet burn?
140. What is an acid burn, corrosive?
141. What is treatment for each?
142; What about shock regarding burns, Why?
143. What are the symptoms of burns and scalds?
144. Treatment very slight burns and scalds.
145. Treatment where blisters have formed.
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146. Treatment very deep.

- · 147. What is the difference between sunstroke and heat exaustion?
 - 148. Treatment for each.
 - What is frost bite, symptoms, treatment? 1490
 - 150. How would you treat freezing?
 - 151. How would you lift an injured person? Demonstrate.
 - 152. How would you improvise a stretcher?
 - 153. What is the cause of suffocation?
 - 154. Of what does the respiratory system consist?
 - 155. How may the supply of air to the lungs be interferred with?
 - 156. Symptoms of suffocation?
 - 157. That is artificial Respiration? 158. Demonstrate.

 - 159. How would you treat for drowning?
 - 160. Why did you take this course?

U. S. BUREAU OF MINES
STANDARD EXAMINATION FOR COOPERATIVE FIRST-AID CERTIFICATES

IN. TOMY

- 1. Q. What part of the body, by weight, is composed of blood?

 i. Dout 1/13 of the weight of the body is blood.
- 2. Q. What is the skeleton?
 - i. The skeleton is the framework of the body.
- 3. Q. What is the composition of the skeleton?
 - ... The skeleton is composed of a hard substance called bone.
- 4. Q. What is the purpose of the skeleton?
 - n. The skeleton supports and carries the soft parts, protects the vital organs from injury and gives attachment to the muscles.
- 5. Q. Into what three parts is the body divided?
 - ... The body is divided into the following parts: the head, trunk and extremities.
- 6. Q. What is the cranium?
 - ... The cranium is a bony case which encloses and protects the brain.
- 7. Q. What divides the trunk into two parts?
 - ... The trunk is divided into two parts by a muscular partition called the diaphragm.
- 8. Q. What organs are contained in the upper portion of the trunk?
 - . The gullet, heart, lungs and some large blood vessels are contained in the upper portion of the trunk.
- 9. Q. What organs are contained in the lower portion of the trunk?
 - ... The stomach, liver, kidneys, bladder and intestines are contained in the lower portion of the trunk.
- 10. Q. What are the upper and lower portions of the trunk commonly called?
 - A. The upper and lower portions of the trunk are commonly called the chest and abdomen respectively.
- 11. Q. What bones form the trunk?
 - A. The spinal column or vertebrae, ribs, pelvis, coccyx and sternum form the trunk.
- 12. Q. How many ribs are there?
 - .. There are 24 ribs, 12 on each side.
- 12a.Q. What is the spinal column?
- ... The spinal column is made up of a number of smaller bones called vertebrae extending from the base of the cranium to the pelvic bone and forms a standard for attaching the ribs giving the body its rigidity.
- 12b.Q. What is the function of the spinal column?
 - .. Its function is to give rigidity to the body and to form a canal or protective covering for the chief nerve fibers of the body, the spinal cord.
- 12c.Q. What is the pelvic bone?
 - A. The pelvic bone is a flat dish-shaped bone which gives a point of attachment for the lower extremities and supports the bladder and bowels.
- 12d.Q. What is the danger of a fractured pelvis?
 - in the fact that the bladder, which rests on the pelvis bone, may become punctured through unduc movement of the patient.
- 13. Q. Of what do the extremities consist?
 - ... The upper extremity consists of the shoulder joint, arm, forearm, wrist and hand. The lower extremity consists of the thigh, leg, ankle and foot.

14. Q. How many bones are in each upper extremity and what are they?

4. Each upper extremity has 1 collar bone, 1 shoulder blade, 1 arm bone, 2 forearm bones, 8 wrist bones, 5 hand bones and 14 finger bones.

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15. Q. How many bones are in each lower extremity and what are they?

- ... Each lower extremity has 1 thigh bone, 2 leg bones, 1 knoecap, 7 ankle bones, 5 foot bones and 14 too bones.
- 16. Q. What is a joint?
 - i. Where two or more bones come together they form a joint.
- 17. Q. How are the bones held in position at the joints?
 - ... The bones are held in position by bands called ligaments.
- 18. Q. What are the muscles and what is their function?
 - A. Muscles give shape to the body and by lengthening or shortening they cause the parts to move to which they are attached.
- 19. Q. What are tendons and what is their function?
 - A. Tendons are strong, white, fibrous cords that attach most muscles to bone.
- 20. Q. How is nourishment carried to the different parts of the body?
 - ... The blood carries nourishment to the different parts of the body by means of closed tubes called blood vessels.
- 21. Q. What other function does the blood perform?
 - ... The blood furnishes heat and oxygen to all parts of the body, and carries waste matter from all the tissues to the lungs, kidneys, skin and bowels, whose work it is to separate the wastes from the blood and expel them from the body.
- 22. Q. What keeps the blood stream in motion?
 - ... The blood is kept moving by the pump-like action of the heart.
- 23. Q. What is the heart and where is it located?
 - i. The heart is a muscular organ about the size of a man's fist, situated in the chest behind and to the left of the breastbone.
- 24. Q. Explain the action of the heart?
 - i. The heart acts like a double-action pump, one side of which forces the fresh blood through the body, the other sido forcing the impure blood to the lungs.
- 25. Q. What is the rate of speed at which the heart operates normally?
 - A. The heart contracts or boats about 72 times per minuto.
- 26. Q. What are the blood vessels?
 - A. The blood vessels are the arteries, voins and capillaries through which the blood is conveyed to all parts of the body.
- 27. Q. What is the function of the arteries?
 - ... The artories carry the pure blood from the heart. They divide and subdivide until they become very small in size and are known as capillaries.
- 28. Q. What is the function of the veins?

 A. The capillaries join finally forming voins through which the impure blood is returned to the heart.
- 29. Q. Where may the pulse beat rate be examined conveniently?
 - A. One can feel the pulse beat at the wrist or temple.
- 30. Q. What is meant by respiration?
 - a. Respiration means breathing inhaling pure air and driving out the impurities that the lungs have separated from the blood.

31. Q. What is the nature of the lungs? 1. The lungs are two cone-shaped bodies which are soft, spongy and elastic. The outside of each lung is covered by a closed sac called the pleura. 32. Q. How is the blood purified in the lungs? ... The lungs contain very delicate capillaries with blood on the inside and air on the outside so that gases in the air and blood are easily exchanged. 33. Q. What is the normal rate of breathing? ... Breathing occurs in health about 15 to 20 times per minute. 34. Q. What duty is performed by the nervous system? ... The nervous system keeps the different parts of the body in touch with each other and it controls and regulates the functions of the organs. 35. Q. Of what does the nervous system consist? A. The nervous system consists of nerves and nerve cells or centers. 36. Q. Describe the nervos! ... The norves are round, white cords consisting of norve fibers which form connections between the nerve centers and the ends of the nerves. 37. Q. Why does the nervous system play an important part in injuries? A. The nerve centers are always affected by serious injury and a condition of shock generally results. SHOCK 38. Q. What is shock? ... Shock is a sudden vital depression of the nervous system. 39. Q. What causes shock? ... Severe pain, loss of blood, fright, anger, surgical operations, seeing own injury or injuries of others, and accidents by electricity or gas cause shock. 40. Q. What are the symptoms of shock? i. 1. The face is pale and has an anxious expression. 2. The cyclids droop, the eyes are dull and the pupils large. 3. The skin is clammy and covered with cold sweat. 4. The patient is somewhat stupid and takes little interest in things about him. 5. He may suffer from nausca and vomiting. 6. He may answer questions slowly. 7. He may be partly or totally unconscious. 8. Breathing is shallow and fcoblo. 9. The pulse is rapid and weak, and may not be felt at the wrist. 41. Q. What is the treatment for shock? ... 1. Place the person in a comfortable position with his head low. 2. Remove all foreign substances from his mouth. 3. Wrap the person in warm blankets, clothing or brattice cloth. 4. Give a liquid stimulant if patient is conscious. 5. Allow patient to inhale fumes of aromatic spirits of ammonia if he is unconscious. First-aid men should test strength of stimulant before applying. 6. Place heat applications around patient under covering. 7. Rub legs and arms toward body under covering. 8. Place a small heat application over heart. 42. Q. Under what conditions would it be improper to place the patient's head low? i. When there is a fractured skull or severe hemorrhage from the head. ilso, in cases of sunstroke and apoplexy.

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43. Q. Under what conditions would it be improper to give a stimulant to a patient who is suffering from shock?

A. If the person has a fractured skull, sunstroke, apoplexy or severe bleeding from the head, do not give a stimulant. If the patient has internal bleeding, do not give a stimulant until the hemorrhage has been checked.

44. Q. What may be used for heat applications?

A. Heat pads, hot water bottles, hot bricks, stones, etc., may be used for heat applications.

45. Q. What precaution must be taken with heat applications to avoid burning patient?

A. Wrap heat applications in cloth or paper and test before applying to avoid burning patient.

46. Q. What substance or material may be used for a liquid stimulant?

A. Aromatic spirits of ammonia, (a teaspoonful in a half glass of water), hot coffee, hot tea or hot water may be used as a liquid stimulant.

47. Q. How should a liquid stimulant be administered?

- A. Raise person's head and allow him to take liquid in sips from a glass.
- 48. Q. Under what condition should a liquid stimulant be given?
 - A. A liquid stimulant should be given when the patient is conscious.

49. Q. How may stimulant be given if the patient is unconscious?

A. Give stimulant to an unconscious person by pouring aromatic spirits of ammonia on a cloth and permitting the patient to inhale the ammonia fumes. The strength of the fumes should be tested before applying to the patient.

50. Q. How long should the shock treatment continue?

A. The shock treatment should be started immediately after the bleeding has been checked and continued until the patient has been turned over to the doctor.

ARTIFICIAL RESPIRATION

Drowning Suffocation Gas Poisoning Electric Shock

51. Q. How does electricity cause shock?

- A. Electricity causes shock by paralyzing the nerve centers that control breathing or by stopping the regular beat of the heart.
- 52. Q. What are the symptoms of electric shock?

A. The symptoms of electric shock are:

1. Sudden loss of consciousness;

2. Absence of respiration which if present is slight and cannot be observed;

- 3. Weak pulse or absence of pulse; and 4. burns at the point of contact with the conductor of electricity.
- 53. Q. What precautions must be taken in rescuing a person from contact with a live A. The following precautions are necessary:

 1. If a switch is near, turn off the current, but lose no time in looking

- 2. Short circuit or ground the current by means of a drill, auger, bar, piece of wire, taking care to release hold of the instrument before it touches
- the live wire. 3. Insulate yourself from the ground and remove the person from the wire. Protect yourself by using dry non-conducting material such as clothing, dry wood or thick paper; also, protect the hand you use to grasp the patient by your cap, coat or any dry non-conducting material.

4. Another way is to take your belt, handkerchief, coat, piece of dry rope or similar material and loop it over the victim's head or foot and pull

him off the wire.

5. If an axe is near at hand, use it to cut the wire but first make certain that the handle is dry.

do not give a chimalant until the compartings nes been checked. 54. Q. What explosive gas is commonly found in coal mines? A. Methane gas is commonly found in coal mines. 55. 4. In what ways is methane gas dangerous? A. It may explode and burn persons within the range of the explosion. In burning or exploding, poisonous carbon monoxide gas is often generated. 56. Q. What are some of the poisonous gases? A. Sulphur dioxide, oxides of nitrogen, ammonia, hydrogen, sulphide, and carbon monoxide. 57. Q. Is carbon dioxide gas poisonous or dangerous? A. Carbon dioxide gas is not poisonous but may cause death by suffocation if present in sufficient quantity. 58. Q. What treatment should be given a drowning person? A. 1. Always rescue the person from the water as quickly as possible. 2. Lock your hands under the patient's stomach and lift him several times to drain the water out of his air passages and stomach. 3. Lose no time in resorting to artificial respiration. 59. Q. What treatment should be given to a person suffering from suffecation or asphyxiation? 1. Remove the victim to pure air and start artificial respiration without delay. 60. Q. What treatment should be given a person suffering from electric shock? A. Remove the person from contact with electric conductor and start artificial respiration immediately. 61. Q. What is artificial respiration? A. Artificial respiration is the term given to the act of causing a person to breath artificially by means of compressing the walls of the chest, forcing the air out of the lungs, and allowing the walls of the chest to expand, drawing fresh air into the lungs. 62. Q. When should artificial respiration be started? A. As quickly as possible after the accident has occurred. 63. Q. How long should artificial respiration be continued? i. Until breathing is restored or for at least four hours. 64. Q. What precautions must be taken before starting artificial respiration? A. 1. Remove all foreign bodies from the patient's mouth; 2. Loosen tight clothing from the victim's neck, chest and waist; and 3. See that the tongue is forward. 65. Q. What additional treatment would you give the victim? A. Give the victim the regular treatment for shock. 66. Q. How many times per minute would you cause the patient to breath in giving artificial respiration. A. The patient should be made to breath 12 to 15 times por minute. 67. Q. What are the commonly used mothods of artificial respiration. i. The Sylvester and prone pressure methods. 68. Q: Which method is preferable? A. The prone pressure method is preferable. 69. Q. Demonstrate the Sylvester method of artificial respiration and show how to change operators without breaking rhythm. A. (Each member of the class demonstrate.)

(. What are some of the poluenous gases! burning or exploding, polsonous earbon monexide gas is often generated. As may explode and burn parsons sithin the range of the explosion. in 70. Q. Domonstrate the prone pressure method of artificial respiration and show how to change operators without breaking rhythm. i. (Each member of the class demonstrate.) HEMORRHIGE OR BLEEDING 71. Q. Give a definition of hemorrhage? ... Homorrhage is the flow of blood from an artory, vein or capillary. 72. Q. What are the symptoms of arterial bleeding? i. Bright, red blood spurting from a wound indicates that an artory has been cut. 73. Q. What are the symptoms of voinous bleeding? A. Dark red blood flowing in a steady stream indicates veinous bleeding. 74. Q. What are the symptoms of capillary bleeding? .. If the blood is red and cozes from the wound, it is from capillaries. 75. Q. How would you stop the flow of blood from a wound with capillary blooding? a. Apply a clean bandage compress directly over the wound. 76. Q. How would you stop the flow of blood from a wound with voinous bleeding? ... Usually bleeding from a vein can be checked by applying a large bandage compress directly over the wound. If this fails, compression should be made on the side of the wound away from the heart. 77. Q. How would you check the flow of blood from a wound with arterial bleeding? ... When an artery is cut, temporary digital pressure should be applied on a pressure point between the wound and the heart after which a tourniquet should be applied on the pressure point. 78. Q. Why must digital pressure be applied before the tourniquet? .. Digital pressure is applied before the tourniquet so that no unnecessary time will be lost in checking the flow of blood. 79. Q. What is meant by pressure points? i. Pressure points are locations on the surface of the body where pressure can conveniently be made on the large arteries to stop the flow of blood. 80. Q. What is a tourniquot? i. i tourniquot is a device used to apply and hold pressure on a pressure point. 81. Q. How long should a tourniquet remain tightly over a pressure point? A. Not more than twenty minutes after which the tourniquet should be loosened for several seconds and then tightened. 82. Q. Class will indicate the following pressure points: 1. Wound of scalp, 2. wound of face or nose, 3. Wound of armpit or arm torn from body, 4. wound of arm, 5. wound of forearm, 6. wound of hand, 7. wound of groin, 8. wound of thigh, and 9. wound of leg. 83. Q. What are the symptoms of internal hemorrhage? A. The symptoms of internal hemorrhage are faintness, cold skin, pole face, dilated pupils, thirst, feeble, irregular breathing, sighing, clouded vision, weakness, rapid pulse, dizziness and later, loss of consciousness.

.. Homorrhage to the flow of blood from an arcory, voin or capillary. 1. 4. Olvo a definition of hemerrhage? - 7 .

84. Q. What is the treatment for internal hemorrhage? A. Lay the patient down with his head lower than his body and apply ice or cold ciccloths to the body at the point from which you think the bleeding comes. do not give stimulants unless absolutely necessary, but you may give ice water or cold water slowly if the patient is conscious.

85. Q. Why is arterial bleeding dangerous?

A. Arterial bleeding, if allowed to go unchecked for a short time, may cause death. Loss of blood also complicates the condition of shock.

86. Q. What is nature's method of stopping bleeding?

A. While blood is flowing through the body, it is fluid; but as soon as a blood vessel is severed, the blood flowing out thickens or clots and tends to stop flowing.

WOUNDS

87. Q. What is a wound?

A. A wound may be defined as a break in the skin.

88. Q. Name three kinds of wounds?

A. Three kinds of wounds are the incised, lacerated and punctured.

89. Q. What is an incised wound?

A. An incised wound is one which the edges are smoothly divided without any bruising or tearing. They are produced by some sharp cutting instrument, such as a knife, a piece of glass or sharp piece of coal or rock.

90. Q. What is a lacerated wound?

A. A lacerated wound is one which presents ragged edges and is the result of tearing the skin and tissues by blunt instruments or machinery.

91. Q. What is a punctured wound?

- A. A punctured wound may be produced by pointed instruments such as needles, splinters, nails, or pieces of wire. They are usually small in size but may be very deep.
- 92. Q. What precautions must be taken by the first-aid man in treating wounds? A. 1. If there is bleeding from an artery, check the flow of blood and apply a tourniquet.

2. Do not touch the wound with your hand, clothing or any instrument and

do not pour water or any drugs into or on it.

3. Care should be taken to make all dressings wide enough to cover the wound completely. 4. A sterile bandage compress should be applied over the wound as quickly

as possible and the knot tied over the compress.

- 93. Q. Under what conditions would you not tie the knot over the compress? A. In compound fractures, wounds of the eye and fractured skull, the knot should not be tied over the compress.
- 94. Q. What bandages are used in first-aid work? A. The compress and the triangular or cravat bandages.
- 95. Q. In general, how tight should bandages be applied?
 A. Bundages should be applied firmly, but never tightly.
- 96. Q. Members of the class will demonstrate the following drossings:
 - 1. wound and bleeding of the scalp, temple, ear or face,
 - 2. wound and bleeding of forehead,
 - 3. wound and bleeding of nose,

4. injuries of the eye,

5. wound and bleeding of chin,

6. wound and bleeding of neck or throat,

7. Wound and blooding

- 8. wound and bleeding of armpit,
- 9. arm torn from body,
- 10. dressing for amputated arm,
- 11. wound and blooding of upper arm,
- 12. wound and bleeding of elbow,
- 13. wound and bleeding of forearm,
- 14. wound and bleeding of wrist,
- 15. wound and bleeding of palm of the hand,
- 16. wound and bleeding of back of the hand,
- 17. wound and bleeding between the shoulders,
- 18. wound and bleeding of back, chest, side or abdomen,
- 19. wound and bleeding of lower part of back, abdomen or buttocks,
- 20. wound and bleeding of groin,
- 21. wound and blooding of crotch,
- 22. wound and bleeding of hip,
- 23. wound and bloeding of thigh,
- 24. wound and bleeding of knee
- 25. wound and blooding of log,
- 26. wound and bleeding of ankle or foot, and
- 27. wound and bleeding of foot.
- 97. Q. What is a dislocation?
 - A. A dislocation is a slipping of a bone out of its socket.
- 98. Q. What other injury always accompanies a dislocation?
 - A. The ligaments about a dislocated joint are always torn.
- 99. Q. What are the symptoms of a dislocation?
 - A. The symptoms of a dislocation are (1) deformity; (2) the head of the bone can usually be felt; (3) the limb in which the joint is dislocated may be eithor longer or shorter than the uninjured limb; (4) it is impossible to place the dislocated limb in its natural position; and (5) pain and swelling accompany a dislocation.
- 100. Q. In general, how would you treat a dislocation?
 - A. Apply dressings or splints in the line of deformity, and treat for shock if necessary.
- 101. Q. Is it proper for the first-aid man to reduce certain dislocations? A. Yos.
- 102. Q. What dislocations may the first-aid man reduce?
 - A. The first-aid man may reduce dislocations of the fingers, toes, and lower jaws.
- 103. Q. Members of the class will demonstrate the following treatments:
 - 1. dislocated finger or thumb,
 - 2. dislocation of lower jaw,
 - 3. dislocation of shouldor,
 - 4. dislocation of elbow,
 - 5. dislocation of hip, and
 - 6. dislocation of knoe.

FRACTURES

- 104. Q. What is a fracture? A. A fracture is a broken bone.
- 105. Q. Name the two kinds of fractures handled in first-aid work?
 - 1. Simple and compound fractures.
- 106. Q. Define a simple fracture?
- A. A simple fracture is one in which the bone is broken but there is no open wound in connection with the fracture.

111. Q. In general, what precautions should be taken in treating fractures?

.. The following precautions should be taken in treating fractures:

1. have the injured person lie down and do not move him unless absolutely necessary until splints have been applied;

2. place the limb in a position as nearly natural as possible by taking hold of the lower part of the limb and pulling gently and steadily; and

3. the under part of the limb should be supported on both sides of the break in order to steady the bone until splints have been applied.

- 112. Q. What special procautions must be taken when treating compound fractures?

 A. Special precautions which must be taken when treating compound fractures are as fellows:
 - 1. If arterial blooding is present, check with tomporary pressure and apply a tourniquet tightly;

2. apply a tourniquet loosely on pressure point above the fracture if bleeding is not present;

3. dress the wound with a storile bandage compress and a cravat or triangular bandage;

4. if bones are protruding do not tie knots over compress; and

- 5. do not attempt to pull the limb into normal position if bones are protruding.
- 113. Q. What are the symptoms of a fracture of the skull?

 1. Blood and sorum may flow from the ears. Bleeding may be seen in the eyes, nose and mouth, and the victim may be conscious or unconscious.
- 114. Q. what treatment is given for a fracture of the skull?

 a. Place the head on a folded blanket or coat in such manner as not to evoke pressure on the fracture. If a compound fracture exists, check the bleeding by placing a large bandage compress over the wound and tie it firmly in place with the knet tied away from the wound. Cover the compress with a cravat bendage and treat for shock, but do not give stimulant.
- 115. Q. How would you troat a fracture of the nose?

 A. Apply a bandage compress, not too lightly, as for wound of the nose.
- 116. Q. Mombers of the class will demonstrate the following dressings for fractures:

1. dressing for fracture of jaw,

- 2. dressing for fracture of cellar bone,
- 3. dressing for fracture of arm,
- 4. drossing for fracture of elbow,
- 5. dressing for fracture of forearm,
- 6. dressing for fracture of wrist,
- 7. drossing for fracture of hand, and
- 8. drossing for fracture of shoulder blade.

117. Q. What are the symptems for fracture of the rib? A. The symptoms for fracture of the rib are severe pain in breathing, tenderness over the suspected fracture, and inability to take a long breath because of the pain produced. 118. Q. Demonstrate drossing for fracture of the rib? 119. Q. What are the symptoms for a fracture of the spino or broken back? A. The patient will be paralyzed from the waistline down and he will be unable to move his logs. Deformity may be present at the point where the spine has been fractured. 120. Q. If the patient's back is bent at the peint of fracture, what would be the procedure? i. Do not try to straighten patient if his back is bent. Treat for shock and send for the decter. 121. Q. Class demonstrate precedure of dressing a fracture of the spine if the patient is found in a straight position. 122. Q. What are the symptoms of a fracture of the pelvis? ... The patient complains of severe pain through the polvis. 123. Q. Mombers of the class will domenstrate procedure of dressings for the following fractures: 1. fracture of the polvis; 2, compound fracture of the thigh with arterial bleeding; 3. fracture of the kneccap; 4. fracture of the log or ankle; and 5. fracture or crushing of fect or toes. BURNS OR SCALDS 124. Q. Give a definition of a burn? A. A burn is an injury caused by the application of heat, either dry or moist. 125. Q. How should clothing be removed from a burn? i. Remove all loose clothing, but do not try to remove clothing that adheres to the skin -- cut around it. 126. Q. Where should the dressings be applied after a burn or scald? i. exclude the air as quickly as possible by applying pieric acid gauze meistoned with steam or water to all burned surfaces. 127. Q. Dofino picric acid gauzo? A. Picric acid gauze is a sterile gauze which has been treated with a 0.5 to 1 per cent solution of picric acid. 128. Q. What procautions must be taken in treating burns? in. The fellowing proceutions must be taken in treating burns: 1. don't bind burnod surfaces togethor; 2. don't apply bandages too tightly; and 3. don't fail to be asoptic. 129. Q. Class domonstrate treatment and dressing of the following burns: 1. burns of the head, face and neck; 2. burns of the entire body above the weistline including upper extremities, but not the head, face or neck; and 3. burns of entire body bolew the waistline including lower extremities. GENERAL 130. Q. What are bruises and how are they caused? A. Bruisos are injuries to the tissues under the skin in which many of the small blood vossels may be broken. They are caused by a person falling or striking some part of the body or being struck by some object.

131. Q. What are the symptoms of bruises?

in. The symptoms of bruises are immediate pain from the injury to the nerves, swelling, black and blue marks, and later pain from pressure of the black on the nerves which is increased by movement.

132. Q. What treatment would you give a bruiso?

in Apply an ice bag or cold wot towel and rost the injured part.

133. Q. What is a strain and how is it caused?

i. i. strain is overstretching of the musclos. It may be caused by a suddon wrench as in lifting heavy weights. In severe strains small bleed vessels may bo broken.

134. Q. How would you treat a strain?

A. Have the injured person rest and rub the parts gently with alcohol and water or witch hazol.

135. Q. What is a sprain and how may it bo caused?

in a sprain is an injury to a joint. It may be caused by vielent stretching, twisting or partial breaking of the ligaments about a joint.

136. Q. How would you treat a sprain?

i. Elevate the joint and place it at absolute rest, apply het towels ever the injury soveral times, place a cravat firmly around the joint, and send the injured person to the dector.

137. Q. What are the symptoms of rupture?

1. A sharp stinging pain, sickness at the stemach and a feeling that semething has given way. . lump will appear in the grain.

138. Q. What is the first-aid treatment for rupture?

- .. Place the patient on his back with his knees well raised toward the abdomen and the legs supported with a pillow or folded jacket. Cloths wet in cold water should then be placed over the hernia or lump and send for the doctor immediately. Nover force the patient to lie in a straight position.
- 139. Q. What is hoat exhaustion?
 - 4. Hoat exhaustion is collapse from the effects of heat.
- 140. Q. What are the symptems of heat exhaustion?
 - i. The symptems of heat exhaustion are the same as those which indicate shock.
- 141. Q. what is the treatment for heat exhaustion?
 - ... The treatment for heat exhaustion is the same as the treatment for shock.
- 142. Q. What is the cause of sunstreke?
 - 1. Sunstroke is caused by prolonged exposure to the ray s of the sun or to excessive heat indoors.
- 143. Q. What are the symptoms of sunstroke?
 - i. The symptoms of sunstroke are as follows:
 - 1. the patient is always unconscious;
 - 2. the face is red and flushed;

 - 3. the skin is het and dry;4. no perspiration whatseever is present;
 - 5, the breathing is labered and of a snoring character,
 - 6. the pupils are enlarged; and
 - 7. the pulse is slow and full,
- 144. Q. What first-aid troatment would you give for sunstroke?

A. For sunstroke you would treat as follows:

1. reduce the temperature of the body as quickly as possible; 2. remove patient to a cool place;

3. raise patient's head by placing on a folded coat or blanket; 4. romovo clothing;

5. apply ice or cold water to head and body;

6. rub extramities toward heart to prevent shock; and 7. do not give stimulant.

145. Q. How would you treat frostbites or freezing?

- A. Rub the affected part with snow or cold water after which use warmer water gradually. Give the patient a liquid stimulant. Do not expose the affected part to heat immediately after having been frostbitten or frozen.
- 146. Q. What first-aid treatment would you use for snake bite?

i. Snake bitc would be treated as follows:

- 1. Apply improvised tourniquet just above the wound between the wound and the heart tight enough to stop the circulation of the blood;
- 2. open the holes made by the snake's fangs cutting lengthwise of the limb;
- 3. let the blood run from the cut and at the same time rub the wound with the fingers to dislodge any of the poison that remains; and
- 4. locsen tourniquet every twenty minutes for five seconds.
- 147. Q. Members of class demonstrate preparing a patient for transportation, loading on improvised or army-type stretcher and transporting patient.

PHELPS DODGE CORPORATION STAG CANON BRANCH

EXPERT FIRST AID EXAMINATION

QUESTIONS

Dawson, New Mexico April 18, 1927.

EXPERT FIRST AID EXAMINATION

1. What is the first thing a first aid man should do with a person that is injured?

SHOCK AND ELECTRIC SHOCK

- 1. Give symptoms of shock.
- 2. What causes shock?
- 3. Explain the treatment for shock
- 4. Explain electric shock, what it does to the body and how to treat.
- 5. Explain how to rescue a man from a live electric wire.

GASES

- 1. Name the three most common gases found in coal mines.
- 2. Explain the dangers of each.
- 3. Explain how to detect each.
- 4. Explain what effect Carbon-dioxide has on the body.
- 5. Explain what effect and action Carbon-monoxide has on the body.

ARTIFICIAL RESPIRATION

- 1. Explain some of the causes of suffocation and asphyxiation, and the treatment.
- 2. Explain how to prepare a patient for artificial respiration.
- 3. When should artificial respiration be given?
- 4. Demonstrate the Schaefer and Sylvester methods of artificial respiration.
- 5. How long would you continue crtificial respiration before you would decide that there was no hope?

DRESSINGS

- 1. What material is used for dressings in first aid work?
- 2. For what are bandages used?
- 3. Explain the different kind of bandages used in first aid work.

BLEEDING

- 1. Explain the circulation of the blood through the body.
- 2. What is the normal pulse per minute?
- 3. In what manner does the bood come from an artery which has been severed?
- 4. Explain capillary bleeding.
- 5. Explain bleeding from veins.
- 6. How much blood is in the human body?
- 7. What is the very first thing to do in case of arterial bleeding?
- 8. What are the three methods of controlling bleeding?
- 9. Explain symptoms of internal hemorrhage and treatment.

TOURNIQUETS

- 1. What is a tourniquet?
- 2. From what can a tourniquet be made?
- 3. In a case of arterial bleeding where do you apply the tourniquet?
- 4. What attention must be given to a tourniquet that has the blood shut off?
- 5. Where do you apply a tourniquet for bleeding veins?
- 6. Point out the points of pressure on the arterial system.

KNOTS

- 1. Make a reef knot.
- 2. Make a surgeons knot.

SPLINTS

- 1. For what are splints used?
- 2. From what material can improvised splints be made?
- 3. Explain how long splints should be that are used on the extremities and body.
- 4. How should splints be padded for simple fractures?
- 5. How should splints be padded for compound fractures?

OPEN WOUNDS

- 1. How should open wounds be treated?
- 2. What precautions should a first aid man take against infection?

BANDAGING

1. How should a bandage be applied over a wound?

DRESSINGS FOR WOUNDS AND BLEEDING

Demonstrate the following dressings and explain treatment:

- 1. Wound and bleeding of the scalp.
- 2. Wound and bleeding of the temple.
- 3. Wound and bleeding of the forehead.
- 4. Dressing for injury to the eye.
- 5. Wound and bleeding of the nose,
- 6. Wound and bleeding of face and chin.
- 7. Wound and bleeding of neck or throat.
- 8. Wound and bleeding of the ear.
- 9. Wound and bleeding of the shoulder.
- 10. Wound and bleeding of the armpit. ..
- 11. Arm torn from the body.
- 12. Wound and bleeding of the arm.
- 13. Wound and bleeding of the elbow.
- 14. Wound and bleeding of the forearm and wrist.
- 15. Wound and bleeding of the back of the hand.
- 16. Wound and bleeding of the palm of the hand.
- 17. Wound and bleeding of the finger.
- 18. Wound of end of the finger.
- 19. Wound and bleeding between the shoulders.
- 20. Wound and bleeding of the back.

DRESSINGS FOR WOUNDS AND BLEEDING CONT'D

- 21. Wound and bleeding of side of chest.
- 22. Wound and bleeding of abdomen.
- 23. Wound and bleeding of lower part of back.
- 24. Wound and bleeding of the groin.
- 25. Wound and bleeding of the hip.
- 26. Wound and bleeding of the thigh.
- 27. Dressing for amputated thigh or leg.
- 28. Wound and bleeding of the knee.
- 29. Bleeding from vericose veins of the leg.
- 30. Wound and bleeding of the leg.
- 31. Wound and bleeding of ankle or heel.
- 32. Wound and bleeding of ankle or foot.
- 33. Wound and bleeding of the foot.
- 34. Wound and bleeding of the toe.
- 35. Wound and bleeding of end of the toe.

FOREIGN BODIES IN THE EYE AND THROAT

- 1. Explain the proper treatment for foreign bodies in the eye.
- 2. Explain treatment in burns of the eye by chemicals.
- 3. Explain treatment for foreign bodies in windpipe or throat.

STRAINS AND SPRAINS

1. Explain what causes strains and sprains and the treatment.

DISLOCATIONS

Deomonstrate the following dressings for dislocations:

- 1. Dislocation of lower jaw, and how to reduce it.
- 2. Dislocation of the shoulder.
- 3. Dislocation of the elbow.
- 4. Dislocation of the finger.

DISLOCATIONS CONT'D

- 5. Dislocation of knee or kneecap.
- 6. Dislocation of the hip.
- 7. Dislocated ankle.

FRACTURES

- 1. What is a fracture?
- 2. How many kinds of fractures are there, from a first aid standpoint?
- 3. What is the difference between a simple fracture and compound fracture?
- 4. How do you recognize a fracture?
- 5. Explain the care that should be taken in dressing a simple fracture.
- 6. Explain the care a compound fracture should be given when dressing.

 Deomstrate and explain the treatment of the following:
- 1. Fracture of the skull.
- 2. Fracture of the nose.
- 3. Fracture of upper jaw or cheek bone.
- 4. Fracture of the lower jaw.
- 5. Fracture of the collar bone.
- 6. Fracture of the shoulderblade.
- 7. Fracture of the arm.
- 8. Fracture of the elbow.
- 9. Fracture of the forearm.
- 10. Fracture of the wrist.
- 11. Fracture of bones of the hand.
- 12. Fracture of the finger.
- 13. Fracture of the ribs.
- 14. Fracture of spine.
- 15. Fracture of pelvis or haunch bone.
- 16. Fracture thigh.

FRACTURES CONT'D.

- 16. Fracture of the knee cap.
- 18. Fracture of the leg.
- 19. Fracture of the ankle.
- 20. Fracture of the foot, toe, or toes.

BURNS

1. Explain fully how to treat a burn.

Deomonstrate and explain the following dressings:

- 1. Burns of the face, head, or neck.
- 2. Burns of the back.
- 3. Burns of the chest.
- 4. Burns of the arms.
- 5. Burns of the hands.

RUPTURE

- 1. What is a rupture?
- 2. How is a rupture caused?
- 3. What is the treatment for a rupture?

POISONS

Explain the kind, symptoms, and treatment of the following poisons:

- 1. Lye poison.
- 2. Bichloride of mercury.
- 3. Match poison.
- 4. Alcoholic poison.
- 5. Carbolic acid poison.

Explain the symptoms of apoplexy and treatment.

Explain symptoms and treatment of sunstroke.

Explain symptoms and treatment for heat exhaustion.

Explain symptoms and treatment of frost bites or freezing.

Explain the treatment for snake bites.

Explain symptoms and treatment for epilepsy.

TRANSPORTATION

Demonstrate and explain the following.

- 1. Assisting one man to walk.
- 2. Carrying across back or fireman's lift.
- 3. Carrying in arms.
- 4. Carrying astride of back.
- 5. Two men assisting patient to walk.
- 6. Two handed seat carry.
- 7. Carrying by extremities.
- 8. Bureau of Mines standard lift.
- 9. How to load a patient on stretcher, and how to carry on stretcher.
- 10. How to make an improvised stretcher.

TWO COPIES OF PROBLEMS AND SOLUTIONS USED FOR FIRSTAAID FIELD DAY, JUNE 17,1938

Reading time 3 min.

Working time 10 min.

A hitch-hiker is struck by an automobile and receives the following injuries: his upper right extremity is straight and will not bend at the elbow, but is free to move at the shoulder. He complains of great pain through the pelvis, and it is black and blue in that area. Blood is spurting from a point where the bones of the left leg are protruding on the inside, midway between the knee and the ankle. Treat and load on stretcher but do not transport.

JUDGES' SHEET MEN'S PROBLEM NO. 1

List of injuries:

- 1. Dislocation of right elbow. P. 94
 A. Elbow is straight: should be supported in this position and bound to one splint as described. Fig. 43 P. 97.
- 2. Fracture of pelvis, simple. P. 116

 A. Support fracture by placing one hand on each hip and then passing one wide cravat round hips and tying.

B. Place patient on well padded board or back splint and bind as directed.

- 3. Compound fracture of left leg Arterial Bleeding P. 101 - P. 121 122
 - A. Check arterial bleeding at point between wound and heart.
 Apply tourniquet.
 - B. Leg should be supported immediately when problem is started.

 C. Cover wound with compress and cravat as for wound of leg P. 82 and 83. Alter position of knot so as not to interfere with splints.

D. Apply splints as described P. 121 - 122.

- 4. Shock. P. 23. Treat throughout problem.
- 5. Load on stretcher any type after testing. No discounts should be given for doing more than problem calls for unless it is injurious to patient.

MEN'S PROBLEM NO. 2

Reading time 3 min.

Working time 11 min.

A motorman is rolled beneath a car and receives the following injuries: the bones in the right foot are crushed; a wound on the palm of the left hand where bone ends are noted; there is a soft lump in the left grain; a cut one inch long on the right elbow; scalds of the left foot, leg and thigh to even with the crotch. Patient unconscious, legs autstretched.

JUDGES' SHEET, MEN'S PROBLEM NO. 2

List of injuries:

- Simple fracture, right foot. P. 123 124.
 Support fractured foot and bind to one splint as directed.
- 2. Compound fracture left hand. P. 109 111.
 Wound on palm of hand. No arterial bleeding. Support fracture, dress wound as for wound of palm of hand. P. 69 = 70. Apply splint as directed.
- 3. Cut one inch long on right elbow P. 67, Fig. 26 B., P. 68. Cover with compress and cravat as directed.
- 4. Rupture. P. 135 137
 Raise knees. Apply cold packs. No bandages to be applied over lump.
- 5. Scalds left foot, leg and thigh up to even with crotch. Cover burn with dampened picric acid gauze and cover with series of bandages as for wounds of foot P. 83, Leg. P. 82 83. Knee P. 81 and Thigh P. 79.
- 6. Shock, P. 23. Patient unconscious. Give no stimulants <u>internally</u>. Carry on complete shock treatment throughout problem.
 - NOTE: All fractures must be supported, all wounds and burns must be given immediate attention. Care must be exercised in handling burned member in aseptic manner, that is, cover hands with picric acid or plain gauze. Clothing should be removed from burned area or announcement made that it has been removed.

Reading time 3 min.

Working time 8 minutes.

Following an automobile accident a man is found in the following condition: Patient conscious, pulse rapid and weak with cold sweat standing out on his forehead; the patient complains of sharp pain as he exhales and a black and blue area is noted over the seventh rib, left side. Blood is spurting from a wound on the inside of the left forearm three (3) inches above wrist; both eyes are burned by the solution from the car battery; the first and second finger of the right hand are dislocated at the second joint and the second finger on that hand is skinned and bleeding. Treat and transport patient 25 feet. Return to original position and unload. Two blankets and two lengths of pipe is the only first-aid material the team members have. All other must be improvised. Team has drinking water.

JUDGES' SHEET, MEN'S PROBLEM NO. 3

List of injuries:

NOTE: No first-aid material available except two blankets, and 2 lengths of pipe.

- 1. Fracture of ribs. P. 111 113. Fig. 49 P. 114.
 Belts or strips of clothing, blanket or such material may be used to bind the ribs as directed.
- 2. Wound on inside of the left forearm. Arterial Bleeding.
 - A. Bleeding must be checked by digital pressure and this pressure held until completion of problem or improvised tourniquet applied at one of the pressure points between heart and wound.
 - B. Wound should not be covered since no steralized material is available. Wound should be guarded and toam should be discounted if blankets or other material touches wound during problem.
- 3. Burns of both eyes. Chemical. P. 125.
 A. Turn patient's head to side and wash freely with water
- 4. Dislocation of first and second fingers second joint on right hand.
 p. 96 99.
 Dislocation on first finger should be reduced.
 Dislocation on second finger should not be reduced due to wound.
 Guard and support finger with wound on.
 Care should be exercised to handle this wound in an aseptic manner as is explained under 2B wound on forearm.
- 5. Shock P. 23.
 Lower head, cover patient, rub extremities, loosen tight clothing and remove foreign material from mouth. All shock treatment to be given without regular first-aid material.
- 6. Transportation.

 Load patient on improvised stretcher and transport 25 feet. Return to original position.

Reading time 3 minutes.

Working time 10 minutes.

A child is playing with a detonator (blasting cap) when it explodes. The four (4) fingers of the left hand are blown off with arterial bleeding; there is a compound fracture of the right forearm, bone does not protrude, midway between the wrist and the elbow. The cut is one (1) inch long on the inside of the forearm. No arterial bleeding; the left eye is injured and bleeding. There is a cut approximately two (2) inches long across the lower abdomen one (1) inch directly below the naval. No internal hemorrhage. NOTE: Dress the left hand in the form of a fist.

JUDGES' SHEET SCOUTS TIE PROBLEM

- 4. Bleeding left eye.
- Arterial bleeding, left hand.
 Amputated fingers, left hand.
- 5. Cut across abdomen.
- 3. Compound fracture right forearm.
- 6. Shock.

SCLUTION

- 1. Arterial bleeding left hand. P. 46 47.
 - A. Apply digital pressure followed with tourniquet placed at the wrist, elbow, or arm pressure points.
- 2. Amputated fingers, left hand.
 - A. Apply compress or gauze over ends of fingers.
 - B. Cover with an open triangular bandage as for wound of hand. P. 70 Fig. 28 P. 72.
- 3. Compound fracture right forearm.
 - A. Support fracture until dressed.
 - B. Prepare and apply tourniquet loosely at pressure point.
 - C. Apply compress and cravat as described Fig. 26A P. 68.
 - D. Apply well padded splint arched for fracture as described P. 108 Fig. 47 P. 110.
- 4. Bleeding left eye.
 - A. Cover eye with compress and cravat as described P. 59. Fig.19, P. 60.
- 5. Cut across abdomen.
 - A. Apply compress and dress as described P. 74. Fig. 32 P. 77.
- 6. Shock. P. 23.
 - A. Place patient in comfortable position head down.
 - B. Remove foreign substances from mouth.
 - C. Wrap in blankets, clothing, etc.
 - D. Give stimulant after bleeding is controlled. E. Rub lower extremities toward the heart.

 - F. Apply heat application.

SENIOR SCOUT PROBLEM NC. 1

Reading time 3 min.

Working time 10 min.

A boy is injured in a car wreck and the following symptoms and injuries are observed: breathing is shallow and feeble; eyes are dull with large pupils; covered with cold sweat and answers questions slowly. He is lying straight, is able to move his head, arms and shoulders, but is paralyzed from the waistline down. He has a cut two (2) inches long across the center of the forehead; a cut two (2) inches long across palm of left hand spurting blood, and a cut two (2) inches long also spurting blood, on the inside of the right arm four (4) inches above the point of the elbow. Treat, load on stretcher and transport 25 feet and return to original position.

JUDGE'S SHEET, SENIOR SCOUT PROBLEM NO. 1

List of injuries;

- 1. Fracture (simple) of spine. P. 113.
 Prepare splints and bind patient to same as directed.
- 2. Wound two (2) inches long center of forehead. P. 58. Cover wound with compress and cravat as directed.
- 3. Wound on palm of left hand. P. 69 70.

 Arterial Bleeding P. 46 47. Check same at one of pressure points between wound and heart by digital pressure. Apply tourniquet at pressure point between wound and heart.
- 4. Wound two (2) inches long inside right arm four (4) inches above elbow.
 P. 67, Fig. 26A, P. 68.
 Arterial Bleeding. P. 46 47.
 Check arterial bleeding by digital pressure at pressure point between wound and heart (either above wound in arm, in arm pit, or subclavian above collar bone). Apply tourniquet, between wound and heart.
- 5. Shock. P. 23.
 Raise head until bleeding on forehead is considered checked by compress.
 Then head should be lowered.
 Remove foreign material from mouth of patient, cover patient, rub extremities, administer stimulants, remove tight clothing.
- 6. Load patient on any type stretcher and transport 25 feet. P. 172.

SENIOR SCOUT PROBLEM NO. 2

Reading time 3 min.

Working time 10 min.

Treat the following injuries: simple fracture of lower jaw; compound fracture with arterial bleeding right thigh on inner side two (2) inches above knee; cut on the top (instep) of left foot. Patient unconscious in state of shock.

JUDGES' SHEET SENIOR SCOUT PROBLEM NO. 2

List of injuries:

- 1. Fracture of lower jaw. P. 105.
- 2. Compound fracture right thigh, arterial bleeding wound two inches above knee, inner side. P. 118 119.
- 3. Wound on top of instep left foot. P. 83. Fig. 39 P. 85.
- 4. Shock, P. 23.

All fractures must be supported from beginning of problem until splints or bandages are applied.

Arterial bleeding must be checked at once by digital pressure and tourniquet applied.

Shock treatment must be continued throughout problem.

SENIOR SCOUT TROBLEM NO. 3

Reading time 3 min.

Working time 10 min.

A man is found unconscious, apparently not breathing, lying on his back across an electric wire. He has burns two (2) inches wide across the palm and inside of fingers of right hand; burns one (1) inch wide across back near top of shoulders. Demonstrate three methods of "shorting" or "cutting off" electric current before removing patient from wire, then resuscitate by all team members (excepting patient) performing artificial respiration for one minute each, making a proper change of operators. Patient resumes breathing after team has performed artificial respiration but does not regain consciousness. Treat.

JUDGES' SHEET SENIOR SCOUT PROBLEM NO. 3

List of injuries:

- 1. Burns 2 inches wide across palm and fingers right hand. P. 135.
- 2. Burns 1 inch wide across back top of shoulders. P. 128. Fig. 30. P. 75.
- 3. Artificial Respiration Prone pressure method. P. 33, 34, 35.
 - A. Three methods of shorting or cutting off current must be demonstrated before artificial respiration is started.
 - B. All members excluding the patient must perform artificial respiration and operators must change without breaking rhythm.
- 4. Shock. P. 23.
 Shock must be treated during the entire problem in addition to the removal of foreign objects from mouth and loosening tight clothing before starting artificial respiration.

NOTE: Burns must be covered with picric acid gauze or a suitable substitute and care must be taken to place gauze between fingers. It should be announced that gauze is first dampened if dry type is used.

JUNIOR SCOUTS PROBLEM NO. 1

Reading time 3 min.

getinen the

Working time 10 min.

On a hike a scout slips and falls over a ledge and receives the following injuries: Fracture of the right collar bone; a cut two (2) inches long, spurting bright red blood, on the bottom (arch) of the right foot; and a simple fracture of the lower jaw, right side. The patient is unconscious throughout the problem and suffering from shock. Treat and prepare for transportation, but do not load on stretcher.

JUDGES' SHEET JUNIOR SCOUTS PROBLEM NO.1

List of injuries:

- 1. Fracture of right collar bone. P. 105, Fig. 42, P. 95. Support right arm and forearm and bandage as directed.
- 2. Wound 2 inches long, bottom of right foot. P. 83, Fig. 40. P. 86.

 A. ARTERIAL BLEEDING. P. 47.

 Check bleeding by digital pressure at pressure point between foot and heart.

 Apply tourniquet at any one of the points.
- Simple fracture of lower jaw. Right side. P. 105.
 Support fracture to prevent movement and apply bandage as directed.
- 4. Shock. P. 23. Continue shock treatment throughout problem.

JUNIOR SCOUTS PROBLEM NO. 2

Reading time 3 min.

Working time 10 min.

A man is injured in an automobile wreck as follows: simple fracture of skull on right side of head; a cut two (2) inches long in the right arm pit, with dark red blood oczing from the wound; a simple fracture of the left leg; the patient is conscious but his mind is wandering, his hands and feet are cold, and his face covered with cold perspiration. Treat and transport 15 feet on improvised stretcher.

JUDGES' SHEET JUNIOR SCOUTS PROBLEM NO. 2

List of injuries:

- Fracture of skull, right side of head. P. 104.
 Raise head. GIVE NO STIMULANTS.
- 2. Wound in right arm pit. Veinous bleeding. P. 63. Fig. 25 P. 65.
- 3. Simple fracture of left leg. P. 121 122.
- 4. Shock. P. 23.

 <u>Give no stimulants</u>. Raise head. Cover patient, rub extremities, apply hot pads, bricks or hot water bottles, etc. Continue treatment throughout problem.

JUNIOR SCOUTS PROBLEM NO. 3

Reading time 3 min.

Working time 10 min.

Treat the following injuries: Compound fracture of the left thigh, spurting blood, two inches (2) above knee; a compound fracture of the left hand, wound on back of hand with only venous bleeding; dislocation of second finger of right hand. Patient is unconscious.

JUDGES' SHEET, JUNIOR SCOUT PROBLEM NO. 3

List of injuries:

- 1. Compound fracture left thigh. P. 118 119 120.
 - A. Arterial Bleeding. P. 46 47.

 Support fracture of thigh. Check bleeding by digital pressure at point either in thigh above wound or in groin. Apply tourniquet.

 Apply bandage compress and cravat as for wound of thigh Fig. 36 P. 81.

 Alter position of knot so as not to form pressure over wound.

 Apply splints as directed.
- 2. Compound fracture left hand Venous bleeding. P. 109-111 Fig. 48 P. 112. Cover wound with compress and triangular bandage as for wound on back of hand. P. 70 71. Fig. 28 P. 72. Apply tourniquet at pressure point between hand and heart but do not tighten. Apply splint as directed P. 109 111.
- 3. Dislocation second finger right hand. P. 96 98.

 Demonstrate method of reducing finger dislocation. No bandage required.
- 4. Shock. P. 23.

INSTRUCTOR'S OUTLINE OF BUREAU OF MINES STANDARD FIRST-AID COURSE

Lesson No. 1.

- 1. Roll call.
- Brief talk on purpose, effects, and benefits of first aid.
- Brief talk on anatomy of human body. (Use charts.)
 - (a) Skeleton
 - (b) Joints
 - (c) Muscles
 - (d) Tendons
 - (e) Skin
- Shock. 4.
 - (a) The nervous system
 - (a) The nervous system
 (b) Physical shock; cause and effect
 - (c) Treatment for shock; use of stimulants
- 5. Artificial respiration.
 - (a) The lungs and respiration
 - (b) Need for artificial respiration
 - (1) Electric Shock
 - (2) Gas poisoning
 - (3) Drowning
 - (4) Asphyxiation
 - (c) Description and demonstration by instructor of Schaofer and Sylvester methods of artificial respiration and how to change operators without breaking rhythm.
 - (d) Class practice in both methods of artificial respiration and change of operators.
- Bandages and compresses.
 - (a) Describe and show class triangular bandage and compresses and show use.
 - (b) Pass out triangular bandages.
 - (c) Describe and demonstrate method of folding cravat bandage.
 - (d) Describe and demonstrate method of tying square knot.
 - (e) Have class practice folding cravat bandage and tying square knot.

7. Control of bleeding.

- (a) Explain the heart and its action. (Use chart.)
- (b) Describe circulation and time it takes person to bleed
- (c) Describe symptoms of arterial, veinous and capillary bleeding.
- (d) Describe methods of controlling bleeding by
 - (1) Cold applications
 - (2) Elevation
 - (3) Direct pressure
 - (4) Digital pressure
 - (5) Tourniquet
- (e) Point out pressure points on the arterial system and demonstrate control of bleeding by digital pressure.
- (f) Explain to class tourniquet and improvised tourniquet, when and how to use, and danger of not loosening at 20-minute intervals.
- (g) Demonstrate application of tourniquet to pressure points.
- (h) Have class apply tourniquets to all pressure points.

8. Roll Call.

NOTE: The work of the instructor will be greatly facilitated by using practical or actual examples when lecturing to class on value of first aid; for example, give instances where life has been saved by artificial respiration, control of bleeding, etc. The use of practical illustrations such as the ventilation of a mine or the flow of water through a city water system will assist the class to grasp more clearly the circulation of blood through the arteries, capillaries, and veins. First-aid charts should be freely used in lecturing on anatomy, circulation of blood, control of bleeding, etc.

Lasson No. 2

- 1. Roll call.
- 2. Give complete review of previous lesson with special emphasis on shock, artificial respiration, and control of bleeding.
- 3. Pass out bandages and compresses and, if previous lesson has not been completed, finish it.
- 4. Wounds.
 - (a) Describe wounds.
 - (1) Incised
 - (2) Lacerated
 - (3) Punctured
 - (b) Describe treatment for wounds, danger of infection, and how to guard against infection.
 - (c) Instructor demonstrate and have class practice dressings for the following wounds:
 - (1) Head, temple, face, or ear
 - (2) Forehead ..
 - (3) Eye
 - (4) Nose

 - (6) Neck
 - (7) Shoulder
 - (8) Armpit
 - (8) Armpit
 (9) Arm torn from body
 - (10) Amoutation of arm or forearm
 - (11) Arm
 - (12) Elbow
 - (13) Forearm
- (14) Wrist
 - (15) Palm of hand
 - (16) Back of hand

 - (16) Back of (17) Finger (19) Between shoulders
 - (20) Back, chest, side, or abdomen
 - (21) Lower part of abdomen, back, or buttocks
 - (22) Groin
 - (23) Crotch
 - 5. Roll call.

Lesson No. 3

- 1. Roll call.
- 2. Give complete review of previous lessons with special emphasis on shock, artificial respiration, and control of bleeding.
- 3. Pass out bandages and compresses and, if previous lesson has not been completed, finish it.
- 4. Continue demonstrations and have class practice dressing for the following wounds:
 - (24) Hip
 - (25) Thigh
 - (26) Amputated leg or thigh
 - (27) Knee (28) Log

 - (29) Ankle or foot (30) Toe.

 - (31) End of toe
- 5. Describe and explain treatment of
 - (a) Foreign bodies in eye
 - " ear
 - " nose
 - " windpipe or throat
 - " stomach
- 6. Describe treatment and symptoms of The section of the se
 - (a) Bruises
 - (b) Strains
 - (c) Sprains
- 7. Dislocations.
 - (a) Describe symptoms and treatment for dislocation.
 - (b) Describe and explain symptoms and treatment for dislocation of lower jaw, fingers, and toes.
- 8. Demonstrate and have class practice dressings for following
 - (a) Lower jaw (after being reduced)
 - (b) Shoulder
 - (c) Elbow
 - (d) Hip
 - (e) Knee or kneecap

9. Fractures.

- (a) Describe symptoms and treatment of
 - (1) Simple fractures
 - (2) Compound fractures
- (b) Explain danger of moving persons or not dressing fractures.
- (c) Demonstrate and have class practice dressings for following fractures:
 - (1) Skull
 - (2) Nose
 - (3) Jaw
 - (4) Collar bone
 - (5) Shoulder blade
 - (6) Arm
 - (7) Elbow
 - (8) Forearm
 - (9) Wrist (10) Hand
 - (11) Fingers
- 10. Roll call.

Lesson No. 4

- 1. Roll call.
- 2. Give complete review of previous lessons with special emphasis on shock, artificial respiration, control of bleeding, and treatment for wounds.
- 3. Pass out bandages and compresses, and if previous lesson has not · been completed, finish it.
- 4. Demonstrate and have class practice following dressings for frac-
 - (12) Rib
 - (13) Spine
 - (14) Pelvis
 - (15) Thigh
 - (16) Kneecap
 - (17) Leg
 - (18) Ankle
 - (19) Foot or toes
- 5. Burns or scalds.
 - (a) Describe burns or scalds and treatment.
 - (b) Describe burns of the eye by chemicals.
 - (c) Demonstrate and have class practice following dressings for burns:
 - (1) Head
 - (2) Face
 - (3) Neck
 - (4) Arm
 - (5) Forearm
 - (6) Hand
 - (7) Body
 - (8) Thigh
 - (9) Leg
 - (10) Foot
- 6. Roll call.

- 1. Roll call.
- 21 Give review of previous lessons with special emphasis on shock, artificial respiration, control of bleeding, treatment for wounds, dislocations, and fractures.
- 3. Pass out bandages and compresses, and if previous lesson has not been completed, finish it.
- 4. Describe symptoms and treatment of:
 - (a) Rupture .
 - (b) Poisons
 - (1) Corrosive poisons
 - (2) Irritant poisons
 - (3) Alcoholic poisoning or apoplexy
 - (c) Fainting
 - (d) Sunstroke
 - (e) Heat exhaustion
 - (f) Frostbite or freezing
 - (g) Snake bite
- 5. Transportation

 - (a) Brief talk on transportation (b) Demonstrate and have class practice one, two, and threeman carries .
 - (c) Describe types of stretchers .
 - (1) Army stretcher
 - (2) Navy stretcher
 - (3) Improvised stretchers
 - (d) Demonstrate and have class practice making improvised stretchers
 - (e) Stretcher drill
 - (1) Fall in
 - · (2) Count off
 - (3) Procure stretcher
 - (4) To patient
 - (5) Lift patient
 - (6) Place stretcher under patient
 - (7) Lower patient on stretcher
 - (8) Carry stretcher
 - (9) Carry stretcher over obstacle
 - (10) Lower stretcher
 - (11) Load in ambulance
 - (12) Unload stretcher

- 6. Divide class into teams.
- 7. Give teams problems and train teams how to work problems and perform team work.

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8. Questioning and examination of class by Bureau of Mines instructor.

NOTE: This outline is to be followed by Bureau of Mines instructors and key men in training first-aid classes. The lessons, as outlined, are only suggestions as to the scope of each lesson and are based on 3 hours actual working time. Local conditions as to length of time of meetings may change the amount of the course which can be covered per lesson. The class may, therefore, be stopped at any point in the lessons as long as the entire subject matter is covered during the course. The sequence of the outline as to subjects and material must, however, be strictly followed. All subjects, dressings, etc., must be taken up in the order as given in the outline, reviews held as noted, and roll call held at beginning and ending of each meeting.

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