

Bulletin No. 28

Safety Series No. 6

University of Arizona
Bulletin

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State Safety News
May, 1916



Application for entry as second class matter
at postoffice, Tucson, Arizona, applied for.
Issued forty times annually.

PUBLISHED BY THE

University of Arizona
Bureau of Mines
TUCSON, ARIZONA

1915-16

State Safety News

Safety *Efficiency*

SAFETY SERIES No. 6

MAY 1, 1916

ARIZONA AGAIN IN THE LEAD

The movement started a short time ago by J. T. More, Safety Inspector of the Ray Consolidated and Secretary of the Southwestern Mine Safety Association has borne fruit and has shown that Arizona is ever foremost in the work of promoting mine safety. Mr. More proposed a new set of rules governing first aid contests, which rules have been largely adopted by the United States Bureau of Mines and is being published by them as Miner's Circular No. 15, entitled Instructions for First Aid and Mine Rescue Field Contests. In the publication no recognition is given the Southwestern Mine Safety Association as having proposed the changes. A letter to Mr. More from Hugh M. Wolfen, Safety Engineer of the U. S. Bureau of Mines states that they "infringed upon his good nature and freely applied his ideas to the proposed miners circular."

Following are the rules recommended by the United States Bureau of Mines:

RULES GOVERNING A FIRST AID CONTEST

1. A team will be composed of five or six men, this to include a captain. (Where a team of five men is spoken of, this number includes a captain, but no patient. Where a team of six men is spoken of, this number includes a captain and patient). Any employee of a company may be a member of a contesting team provided he is not a physician or trained nurse.
2. The teams will be numbered consecutively, beginning at No. 1, and they must occupy the positions assigned to them on the field.
3. The captain will select the patient and designate the number of members of the team to perform the event.
4. The captain will control his team in their field work and stretcher drill, but only when the full team is engaged. In other than full team events no members (including the captain) who are not engaged in the event shall be allowed to prompt these members who are engaged.

5. The captain may himself contest in any and all events.
6. At the conclusion of any event the captain must raise his right hand and announce his team number. The team will remain at its post until relieved by the judge.
7. The patient, if trained in first aid, will be required to demonstrate his ability by participating in a one-man or two-man event in order to be awarded a prize with his team, if they are successful contestants in the full team events. If not trained in first aid, he may be awarded a souvenir medal such as other untrained patients are given.
8. Teams must bring their own first aid materials, including triangular bandages, picric acid gauze, three sizes of bandage compress, aromatic spirits of ammonia, scissors, spoon, splints of various sizes, blankets and stretcher. No one shall be allowed to leave the patient in order to obtain material.
9. Where a wound is specified, the exact location and size of the wound should be given.
10. The triangular and cravat bandages and bandage compresses shall be the standard used in the contest.
11. In the case of a burn demanding picric acid gauze, it will not be necessary to wet the gauze.
12. All splints must be prepared on the field during each event requiring their use. They shall contain no notches, nails, projections or marks of any kind which might cause inconvenience or injury to the patient or injury to the other team members. They shall be padded so that one side, all edges and ends are covered and wrapped in triangular bandages or other suitable coverings, so that the splints and padding are concealed. Splints should be padded well where the ends come in contact with the body and extra padding should also be placed near bony prominences, and they should be held in place by triangular bandages.
13. No practicing will be allowed on the field after the teams have been assigned to their places nor will any member be allowed to read any first aid literature after this time.
14. Unless specified, improvised stretchers shall not be used.
15. No limit is placed on the number of triangles that may be taken on the field, and these may be folded and ironed to any width or shape.
16. An event embraces a problem which may call for the treatment of one or more injuries and the handling of the patient.
17. Problems shall be presented to the Chief Judge and shall be written in good, plain English, avoiding where possible technical terms or terms not common to all classes of miners. Problems shall in no

case be made public previous to their announcement on the field. Contestants shall be allowed two minutes for discussion of the problem before time is called.

18. Allotted time for each contest shall be announced by the Chief Judge, and discounts shall be marked if the problems are not completed within specified time. All events will begin and end at the sound of a gong or other audible signal.

19. Judges and teams for the preliminary contest shall be arranged in sets or squads of 3 each. If the number of teams participating is not divisible by three and there remain two teams, this fractional set or squad shall have its full quota of three judges. In case but one team remains the last full set shall absorb it and have a set of four judges, the extra judge dropping out in turn as progression is made. Judges shall judge all teams in their set in conjunction each with the other, i. e., each shall make his own personal notations on each team's work (in his squad) during the event, and the three, convening after each event, shall jointly arrive at each team's score on that particular event. Judges shall perform their work progressively as a set, i. e., Judges 1, 2 and 3 will judge teams 1, 2 and 3 in the first event, teams 4,5 and 6 in the second event, etc. The team from each set receiving the highest score in the preliminary contest shall then compete in a final contest with the high team from each of the other sets and shall be judged by three judges. Judges shall progress as a unit. The number of events in this final contest should correspond with the number of teams participating, so that each team shall have been judged by each set of judges, the winners of this contest being adjudged first place.

20. Each judge shall be required to scrutinize the work done in each event and may call on the captain or member who applied the dressing to explain his treatment only after the work is completed and must in no way interfere with the work while in progress.

21. The broken back splints, stretchers, bandages, etc., described in Miners' Circular, shall be used in all first aid contests.

22. Each set of judges shall mark the team and set numbers, events, discounts for each team, sign their names and deliver the score cards to the Chief Judge after each event; he in turn will deliver them to the recorders to be checked.

Suitable record cards, for the use of the judges, shall be provided by the Chief Judge the day before the event. The Recorders will add the discounts and mark the percentage made by each team in each event. All percentages will be figured from a full team score as a basis, thus, one-man event: Discounts 8 ($8 \times 0.2 = 0.2$ being 1-5 of a

full team— equals 1.6. This amount from 100% leaves a net percentage of 98.4). In like manner the 2, 3 and full team scores would be arrived at by multiplying the discounts by 0.4, 0.6 and 1.0 respectively. The average of the individual net scores will be the final score of the team.

23. Only in case of a tie in the final contest shall the scores of a preliminary contest be used to decide. In case the tie still remains it shall be settled by a full team event.

24. The points made in the events performed to decide a tie shall not be included in the total points made in the whole contest.

25. The teams making the highest average and a tie score shall precede all other teams having a less score in the original events.

26. Where open wounds are specified the bandage compresses and triangular cravat bandages may be applied to the outside of the clothing. Where hemorrhage is to be controlled it is not necessary to so tighten the tourniquet that the flow of blood in that portion of the body will be stopped. It is sufficient if the tourniquet is properly placed so that the hemorrhage can be controlled with the least discomfort.

27. Adhesive straps are not allowed in first aid contests.

28. In carrying a patient on a stretcher and an obstacle is encountered, the carriers as well as patient must go over the obstacle and not to the side of it.

29. Donors of prizes will be required to advise the committee on awards the manner in which their prizes shall be awarded, based upon these rules.

30. Prizes will be listed by the committee on awards.

31. Miners' Circular on first aid is hereby authorized.

32. In events requiring artificial respiration a Judge may require the teams to perform separately if he is judging more than one team.

33. There is no regulation size for the canvas on which the team works, but this is usually 5x7 feet.

CHIEF JUDGE'S DUTIES

1. The Chief Judge will convene with his associates not later than one day before the contest. At this time he will submit the events for the contest; also the events to be used in case of ties. He shall explain the proper treatment of each problem, proper condition of bandages, properly padded and rolled splints, examination of knots, system of docking, apparent conflicts in discounts, and use of record cards. He shall submit a set of these rules and discounts to each judge not less than

three days before the contest in order that each may become familiar with his duties.

2. He shall assemble the captains or managers of the teams and their positions on the field shall be decided by lot. (Each team shall have been furnished with a complete set of rules and discounts at least thirty days before the contest).

3. He shall announce the events and time allowed to the public audience after which he shall deliver the problems, in a plain sealed envelope, to each captain. He shall see that all teams are ready and then allow them two minutes for consultation, after which he shall call time. From this moment the time allowed for the problem shall commence. At the end of the time allowed he shall again call time, but the teams shall be allowed to finish their work in case they are not through. However, discounts for slowness will be credited.

4. Should a judge be in doubt on any point in the judging, he shall refer such points to the Chief Judge for decision.

DISCOUNTS:

1.	Not doing the most important thing first. (Lose all for not following proper order.) Failure to call doctor. Failure to stop hemorrhage. Failure to give artificial respiration. Failure to treat shock. Failure to treat wounds and compound fracture. Failure to treat simple fracture. Failure to treat dislocations. Failure to treat burns.	6
2.	Failure of captain to command properly. (This is confined to stretcher drill.)	1
3.	Slowness of work and lack of attention. Failure to complete in allotted time (1) Talking and laughing unnecessarily, or smoking. (1)	2
4.	Failure to entirely cover wound or being unable to give location of injury Parts should be covered entirely with bandage compress, (2) Treating wrong part of body, as tying up right hand instead of left, (2)	4
5.	Ineffective artificial respiration, Not removing foreign bodies from mouth.	11

Not pulling the tongue forward if it is already in that position	(2)	
Working too fast or too slow (14 to 20 times a minute)	(2)	
No pads under lower part of chest of thin persons,	(2)	
Not placing pressure on 8th, 9th, 10th 11th, 12th ribs, little fingers a border of 12th rib, fingers spread with thumbs toward center of back. Pressure should be downward,	(3)	
Not turning head to one side and resting it on forearm,	(2)	
6. Splints improperly applied or improperly padded,		6
Ends or edges of splints not covered with padding,	(2)	
Insufficient padding on inside of splint	(2)	
Splints too loose, too tight, or not parallel	(1)	
Splints not sufficiently long to hold broken bones from moving; broken back splints unstable,	(1)	
7. Tight, loose or improperly applied bandages,		5
Too tight or too loose,	(3)	
Failure to apply bandages according to instructions found in Miners' Circular	(2)	
8. Insecure or granny knot		4
(Failure to apply reef or square knot.)		
9. Unclean first-aid material		3
Soiled dressings.		
10. Failure to have on hand sufficient and proper material to finish dressings		3
11. Lack of neatness		2
Rough padding, loose, ends, wrinkles, knots tied on inside, etc.		
12. Awkward handling of patient.		4
Roughness, unnecessary handling of patient	(1)	
Catching hold of part supposed to be amputated	(1)	
Not supporting broken bones and gently placing limb in as nearly normal position as possible	(1)	

	Not being careful of wounds or fractures when moving patient or giving artificial respiration	(1)	
13.	Assistance lent by patient		3
	Patient must assume an attitude of unconsciousness during the time of dressing. Patient however, may render assistance in 1 or 2 man carry where problem permits.		
14.	Tourniquet improperly applied		7
	Too loose	(2)	
	Too tight	(1)	
	Pad out of place	(2)	
	Not using a pressure point	(2)	
15.	Failure to stop arterial bleeding		
16.	Not treating for shock		5
	Not lowering head, except bright red bleeding from head.	(2)	
	Failure to give aromatic spirits of ammonia	(1)	
	Failure to cover with blankets, etc.	(2)	
17.	Improper treatment		12
	Not using stick in mouth in dislocation of the jaw,	(2)	
	Not having tourniquet in place ready to apply in case of compound fracture	(3)	
	Giving stimulant when patient suffers from arterial bleeding,	(3)	
	Allowing patient to sit up in case of severe injuries,	(2)	
	Not splinting a mashed or crushed member	(2)	
18.	Failure to be aseptic		7
	Touching wounds or edges of wounds	(4)	
	Touching with your hands dressings which cover wounds or placing dressings over wounds which touched the ground or your clothing,	(3)	
19.	Failure to temporarily control hemorrhage previous to application of tourniquet		7
	First place fingers over pressure point while other first aider covers wound with compress.		

FUSE TESTING

By L. M. BANKS

When shipments of fuse are received by the mine warehouses, notice is given to the safety department so that it can be tested before it enters the mine. All fuse received is tested in the following manner:

Every case is opened and one roll of every spool number is selected for the burning test. At the factory each spool of core thread, 2000 feet long, is given a serial number. So that we will find in a case, 6000 feet, from three to five different numbers.

To get the rate of burning per linear foot, a piece about fifteen feet long is cut from each roll removed and started. By means of a stop-watch each piece is timed while burning between two knife-cuts three feet apart. Thus from nine to fifteen feet (.15 per cent—.25 per cent) is actually timed for every case. To further test the amount of powder and the continuity of the powder train, and its resistance to pinching and bending while burning, these fifteen foot pieces (representing .75 per cent—1.25 per cent of a case) are subjected to pressure of the heel when the fuse is on a smooth hard surface. If the powder train is of sufficient amount and is continuous, the gas pressure generated ahead of the fire cause a pop or explosion that serves as an indicator of quality. Any fuse that stops burning under such pressure or from any other cause is carefully examined and further tested before acceptance or condemnation.

After all spool numbers have been timed, the average burning rate per foot is calculated. Also the minimum and maximum rates are noted. A report is made out and the quality and burning rates sent to the mine foremen before the fuse enters the mine.

The condition of a shipment in regard to dampness is noted. The number and nature of coverings are determined. To determine the percentage loss by burning, a roll of one hundred feet is weighed before and after burning and the loss calculated.

The strength of the spit in open air is measured as the distance at which a burning fuse will ignite another when the powder trains of the two pieces are in the same straight line. Side-spitting is watched for during the burning tests. An excessive amount of this would cause condemnation of the fuse. Flashing or running are also watched for.

SAFETY-FIRST

Would you take ten thousand dollars for a faithful pair of hands
That will serve you from your childhood to old age?
Would you take an automobile for a pair of nimble feet?
Would you swap off nature's freedom for a cage?
That is all that's left a cripple, for he's never free again,
He's a prisoner within his helpless self
Where pleasures never tease him and the pay check never sees him,
For his useful life is laid upon the shelf.

Would insurance money pay you for the eyes you used to have
As you enter on a life of endless night?
If you had it would you offer all the money in the mint
To a doctor who would give you back your sight.
Now, since these things are precious and can never be replaced,
Never risk them if there is a safer way;
Better cherish them and guard them, ere the accidents have marred
them,
For your future all depends upon today.

Now our days on earth are numbered and our life is short at best,
And the end for each and all will come some day,
So let's be prepared to guard it and save what may be left,
And enjoy the world a little while we may,
We like a man who's fearless, and we hate a coward too,
Still it's better to be wise than always brave,
For perhaps you'll win the gamble, and perhaps you'll only ramble
To the home of risky chances, that's the grave.

The best insurance order that there is in all the world
And the one that is the least misfortune cursed,
Is the brotherhood of labor in the railroads, mines, and mills,
Who don't forget their pass-word, "Safety First."
So don't gamble with the treasures that can never be replaced,
For you may lose and have to face the worst;
If you can't help acting funny, let the thing you risk be money,
Comrades, always ACT the pass-word, "Safety First."

—K. H. CHISHOLM, U. S. Mine Rescue Car No. 2.

.....1916

J. T. MORE, Secretary,
SOUTHWESTERN MINE SAFETY ASSOCIATION,
Ray, Arizona.

Enclosed please find ^{money} order for Three Dollars (\$3.00)
_{check}
for membership in the Southwestern Mine Safety Association for
the year 1916.

Address.....
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