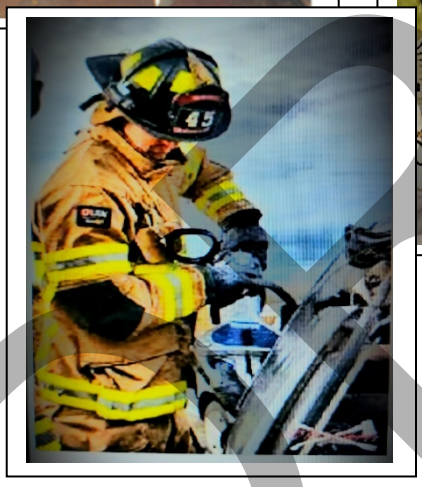
MSHA-RECOGNIZED RULES FOR SURFACE MINE RESCUE CONTESTS



U.S. Department of Labor
Mine Safety and Health Administration

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MSHA
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STEVENS AMENDMENT

Disclosure of Federal Participation (Stevens Amendment)

The Florida MSHA State Grants Program informs the public that the use of Federal dollars in the Florida Mine Safety Program meets the Stevens Amendment requirement. Bid Solicitations, press releases, various instructional material purchases, training resources, video productions, websites, social media, mine rescue events, staff professional development opportunities, and all engagements have been funded in whole or in part with Federal Entitlement Dollars.

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Florida Mine Safety Program
www.flminesafety.com
MSHA State Grants Program
https://www.msha.gov/state-grant-participants

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PREFACE

This book was prepared for mining industry instructors, MSHA instructors and inspectors to train mine rescue steams, judges, and contest personnel in procedure for a Surface Mine Rescue Contest.

Reference to specific brands, equipment or trade names in this document is made to facilitate understanding and does not imply endorsements.

MISSION STATEMENT

The Metal and Nonmetal National and Regional Contests serve as training tools to improve the skills required to respond to a mine emergency. These completions serve to strengthen cooperation between mining companies, equipment manufactures. And Federal and State agencies to enhance mine rescue preparedness. This Contest Rule Book establishes procedures and rules that serve to guide rescue teams in training and competitions.

ACKNOWLEDGEMENTS

A special thanks to the National Surface Mine Contest Rules Advisory Board, (NSMCR) for their valuable assistance in preparing this book. The NSMCR Advisory Board is comprised of representatives from the following organizations:

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Joshua Brady, West Virginia University
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General Rules Committee Membership

A special thanks to the General Rules Committee membership for their valuable assistance in preparing this chapter of the Rule Manual. This Committee is comprised of representatives from the following organizations:

Russell Byers, Ohio Department of Natural Resources

Ryan Fox, Campbell County Fire Department

Clancy Harman, Elko County Fire Protection District

Danielle Hemmert, Genesis Alkali LLC

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GENERAL RULES
FOR CONDUCTING THE CONTEST

Surface Mining Emergency Response Training and Competition will be comprised of six individual events, including a Mine Rescue Field Competition (two days for each participating team), a Firefighting, Extrication, Rope Rescue, First Aid Competition, Confined Space, and Hazmat Materials Competition. Each event will include a written examination. No more than 3 disciplines contained within the National Rules for Surface Mine Rescue shall be utilized in a Field Exercise problem. National Competition will be composed of 2-Day Training and 2-Day Competition. All mine rescue contests will follow the approved set of rules that are developed by the National Surface Standardized Contest Rules taskforce and Sub-Committees and approved by the National Mine Surface Contest Advisory Committees.

1. These rules were designed as a training tool only. They were developed for contest purposes only and to ensure that a contest simulating actual conditions can be created. Discretion should be used in actual mine emergency situations.

2. Mine rescue teams must be composed of persons who are working employees of mining companies or persons who are designated or contracted by mining companies.

3. Contest officials will be comprised of the Contest Director, Contest Coordinator, Chief Judges, Appeals Committee, field competition judges (including field judges and mine attendants), isolation officials, written exam judges, technician team contest judges, and first aid contest judges.

Note: During the working of the field problem(s), the No. 1 Judge will assume the role of the mine manager.

Note: Only life threatening treatment will be judged during a Field Exercise.

4. There will be no limitations as to the number of teams admitted from any county, state, district, company, or organization.

5. Mine rescue teams may register a maximum of (10) ten competing team members, including Team Trainer. For minimum team amount please see individual disciplines.

6. Once registered, no changes will be permitted without the permission of the Contest Director, upon team arrival. Any (new or different equipment MUST be listed) needed equipment changes require submission of a modified list to the Contest Director for consideration of approval.

Note: Each judge will be given a list of your equipment prior to working of the problem to assist them in determining if the equipment was utilized properly and was functional.

7. The agenda will be provided in advance to all participating teams and contest officials. At the time of the contest, the agenda will be posted in various locations as a reminder for all.

8. Only judges, contest officials, escorted photographers, and news media approved by the contest director will be permitted in the problem area. A separate area will be provided for spectators to observe the teams during competition.

9. On the day prior the contest, a meeting will be held to discuss officials' and judges' assignments and training. All personnel who will be officiating during the contest shall attend this meeting.

10. All mine rescue teams must report to isolation at the designated time on each day of their participation. The number of persons in isolation will be limited to ten uniformed team members.
    a. Any team or member receiving information concerning a Contest problem prior to arriving at the rescue area will be disqualified by the Chief judge and Director(s)
    b. This will include smart phones, smart watches, pagers, or any other electronic device capable of sending or receiving information.
    c. Any team member found with a wireless communication or electronic device in isolation once the determined isolation time has begun will result in the entire team being disqualified
    d. Alternates/patients who had been isolated with the team, may assist the team placing equipment prior to starting the clock. In the event of an emergency or by problem design the alternates/patients meeting the physical requirements may be substituted for any working team member or briefing officer/command center attendant. The team may decide which position the alternate will fill.
    e. All mine rescue members must have completed physical examinations in the past 12 months preceding the contest and are capable of performing strenuous work under air.
    f. The person in charge of the team will introduce himself/herself to the judges immediately upon arrival of the team at the mine problem. The captain will then introduce his team and make a statement that reflects that they are fully equipped, trained and ready to help.

11. Teams are required to bring with them a sufficient supply of materials and apparatus accessories. Teams cannot expect recharging materials and facilities, apparatus parts, and accessories for the several types of apparatus to be made available at the contest site. Teams will not be permitted to furnish or make placards indicating materials or equipment and then simulate their use.

12. The team will not be permitted to use any material or manuals for reference purposes during the working of the problem. No practicing will be allowed on the field before beginning of the contest, except for familiarization of contest specific materials.

Note: Teams are not allowed to leave the working area to obtain materials for the problem one the time clock has started, or team has arrived at the problem

13. Novice Teams (if requested) are defined as a team that is within the firsts 2 years of competing. Novice Teams will be drawing FIRST.

14. For Contests, the team drawing will be conducted the day before the competition is set to begin. The number selected by the team captain will determine their running order for the first day's field competition and the second day's first aid competitions. On the second day of the competition, the teams will run in reverse draw order. In both cases, position changes necessary for management of the respective contest will be permitted if the Contest Director approves the change.

15. All rescue equipment used during rescue contest must be up to date according to manufactures guidelines. All equipment must be inspected by the team to assure no defects are detected by the proper manufacture guidelines.

16. Upon registration the team shall properly identify their radios and provide the programmed channels and frequencies for their radios. The team must provide their fully charged intrinsically safe radios immediately upon arrival to a guard in isolation/lock- up on the day of the contest. The radios must be properly labeled as team property.

17. The Contest Director can establish a reasonable amount of time for each team to complete the problems and all teams will be notified of the established time prior to beginning to work the problem. Problems will be designed so that tam can successfully complete the problem with no discounts if worked correctly according to rules set forth. Any teams working beyond the established time period will receive a discount for each minute over the average working time.

18. At a Minimum each team member must wear:
    a. Safety boots
    b. Gloves (appropriate for the problem)
    c. Approved protective hat with chin strap
    d. Eye protection
    e. Headlamp, or lights
       During the working of the problem, headlamps may or may not be turned on but must be operational
    f. Members must be similarly dressed.
    g. Intrinsically safe radio, or type of communication established.

    *Teams may be required to have additional PPE that is task specific for the problem. This will be sent out in registration prior to competition

19. Teams that have competed will not be permitted to return to the isolation area or communicate with any teams awaiting their turn to compete.

20. During each day of the competition, all teams shall be in isolation at a time designated by the Contest Director.

21. All written tests will be administered in isolation. The written examination will consist of fifteen (15) multiple choice questions from each of the discipline's respective handbooks. Prior to each disciple each test will be administered.

    Note: In special circumstances, a team member may be given an oral test by one or more judges in lieu of a written test. Requests for consideration shall be presented to the Contest Director at the time of registration.

22. Twenty (20) minutes will be allowed to complete the written test for each discipline. At the end of the allotted time, tests will be collected regardless of whether or not the contestants have answered all of the required questions.

23. Competing team members (trainer if a field competition member) will take the written test. Contestants will be directed to sit at separate tables. Persons from the same company or organization will also be required to sit apart from each other at the designated tables. All scores will be utilized.

24. Each question shall contain a blank space which shall represent a key word, with no more than two consecutive blanks per statement. Answers will be multiple choice with three choices. Answers will not be intentionally misspelled. “None of the above” shall not be used as one of the choices.

25. The contestants will be assessed one (1) discount point for each incorrect or unanswered question. Any alterations to the test questions or answers will be determined to be incorrect by the test judge and discounts assessed.

26. Team members taking the written examination will not be permitted to take any written material or information into the testing area.

27. There will be no discussion during the time that written examinations are being taken.

28. Team members from the same team will not be allowed to sit at the same table while taking the written examination.

29. In any case, the judges will not explain the meaning of questions.

30. Scoring of the test will be completed by at least two qualified judges.

31. Teams will have 4 minutes to position their equipment, lay out lifeline if needed, distribute radios if applicable.

32. The team will be confined to the designated area during this time period. If the captain fails to start the clock at or before the 4 minutes has elapsed, the clock will be started for them. Once the clock is started the captain will place his initials and the date (month, day, and year) along with team working order on the date board. This must be done before the entire team travels into the working area of the problem. The team will not receive the discount for the captain not starting the clock if it is started by the judges.

33. Each team will be given a written problem and scenario prior to starting the problem. The problem will be given to the team immediately after the captain or judge starts the timing device. Time required for studying the problems and getting under oxygen and/or air will be included in the total problem working time. No testing of equipment is required at the problem. However, any continued use of any defective equipment that occur while working the problem may have discounts assessed.

34. Once the clock has started, only the working team members will be able to do work in the problem.

Note: Any team whose member(s) intentionally disturb or destroy any component on a competition field will immediately be assessed a 100-point discount. Repeated offense may result in team disqualification at the discretion of the Contest Director.

35. Addressing appeals at the conclusion of each of the disciplines, the team members will be instructed to report to the area designated for 30-minute looks. A schedule will be posted near the 30-minute look location. The Team Captain, Team Trainer and one other person will have thirty (30) minutes to review the judges’ scorecards and the team’s written test scores.

36. At the conclusion of the 30-minute look, the Team Captain and/or trainer may submit a written appeal for any discount received to the person in charge of the 30-minute look.

37. If a wireless internet connection is available, the Contest Director(s) may approve an option where the teams can review their results electronically. In those cases, the team must provide an email address that will be used for the review on the form provided at registration. The form must be completed and submitted at registration. Contest officials will email the scorecards, maps, written examination, etc. to the email address on record when they are ready for review. The team will have 45 minutes to review the material starting upon the "read receipt" of the email, but no more than two hours from the time it was posted outside the appeals area and email any protests back to the Contest Officials.

38. In mine rescue ties, judges' score cards will be the first tie breaker; written examinations will be the second tie breaker; timecards will be the third tie breaker; and actual time to work the problem(s) will be the fourth tie breaker.

39. Written appeals are not to exceed one page for any discount assessed and will be forwarded to the Appeals Committees. No additional appeals will be accepted after the 30-minute look.

40. Documentation (contest rules and other documents specified for each discipline used in the contest) supporting the appeal will be accepted.

41. Any protest(s) will be considered by the Appeals Committee. A discount summary sheet will be used to list the discounts.

42. All discounts except time will be listed and totaled. The Team Captain and the review judge will sign the team discount summary sheet to certify they have reviewed the discounts and verified the totals. All appeals will be considered by the committee and their decision will be binding and final.

43. A trophy will be awarded for the Overall Mine Rescue Contest Champion based on the best cumulative team scores, (the least number of discounts), including the combined discounts for the mine rescue field and first aid. In the event of a tie, the team with the best mine rescue team standing in the mine rescue field competition will be the tie breaker.

44. The results from all elements of the contests will be distributed to the teams at the conclusion of the awards ceremony

MATERIALS LIST

24 Triangular Bandages
6 Adhesive Compresses
24 Sterile Gauze, (4”x4”) and/or 4” Compresses
6 Roller Bandages
3 Blankets
1 Scissors/EMT Utility
6 Pairs of Examination Gloves
2 Mask/face shields or masks and goggles combination meeting blood borne pathogen requirements
2 Heat Packs – Simulated
4 Cold Packs – Simulated
2 Oval Eye Pads
1 Pen and Paper Set
1 Barrier devises with one-way valve for performing AV/CPR
1 White bag (i.e. plastic garbage bag)
1 Compliment of splints (may be pre-padded but not assembled)
1 Long back board with straps (Aluminum, Wood, etc.)
2 Air Splints (1 full arm and 1 full leg)
1 Adhesive Tape
1 Burn Sheet, Sterile (40”x80” minimum)
1 Rigid Extrication Collar
4 Trauma Dressings (minimum of 10x30”)
1 Eye Shield/Cup
1 Pen Light
4 Tourniquets (a device used to cut off all blood supply)
2 Towels
1 Pillow
4 Occlusive Dressing
2 Sticks, Wooden Dowels or equivalent
1 Watch/Timing Device
1 Headset (long spine board)
1 500 ml sterile water (for contest purposes, expiration date not applicable)

Compliment of Straps for Long Spine Board (buckle straps, spider straps, etc.)

Automated External Defibrillator Training Unit (do not power up)

MINE RESCUE FIELD COMPETITION
Written Examination Discount Summary Sheet

Company Name: _____

Team Name: _____

Draw Number: _____

Discounts

For each incorrect answer for each person
(1 discount)

No. 1 person 1 x _____ = _____

No. 2 person 1 x _____ = _____

No. 3 person 1 x _____ = _____

No. 4 person 1 x _____ = _____

No. 5 person 1 x _____ = _____

No. 6 person 1 x _____ = _____

No. 7 person 1 x _____ = _____

Note:
Total Discounts is the aggregate sum of the three best test scores (tests with the least amount of discounts).

_____ **Total Discounts** _____
Judge's Signature

MINE RESCUE FIELD COMPETITION
Time Summary Sheet

Company Name: _____

Team Name: _____

Draw Number: _____

Total Time _____

_____
Timekeeper's Signature

BLIND KNOT TYING COMPETITION

Discounts

1. 0 Points for each knot tied correctly
2. 1 Point for each knot tied incorrectly
3. .5 point discount for improper dressed knot
4. (5) Knots to be determined during the Competition

Knots to Know

1. Overhand (Thumb Knot)
2. Figure Eight
3. Fight Eight on A Bight
4. Bowline
5. Figure Eight Follow-Through
6. Figure Eight Bend
7. Grapevine (Double Fisherman)
8. Water Knot (Tape Knot Overhand Bend Ring Bend)
9. Barrel Knot
10. Munter Hitch (half-ring Bend, Italian Hitch)
11. Prussik
12. Sheet Bend (Beckett)
13. Clove Hitch
14. Double Loop Figure Eight (MR Eight)
15. Butterfly

BLIND KNOT TYING COMPETITION
Team Discount Summary Sheet

Company Name: _____

Team Name: _____

Draw Number: _____

Total Discounts _____

Total Time _____

_____
Judge's Signature

FLORIDA MINE SAFETY PROGRAM
SURFACE RESCUE DISCOUNTS
Judges' Discount Card

Time:
Hours:___ Minutes: ___Seconds:___ Discounts:_____

	Discounts
1. No work will be done prior to starting the clock	4 (Total) =_____
2. Team members doing anything to endanger himself/herself/or other team members, 15 points each team member so endangered, each infraction, each occurrence	15x____ =_____
3. Not calling additional resources within 5 min. of reaching pt.	25x____ =_____
4. Team members not clearing hazards	10x____ =_____
5. Not securing the scene	50x____ =_____
6. Failure to bring the patient to the medical personnel for transport	25x____ =_____
7. Triage started?	10 (Total)=_____
8. Failure to locate each patient	50x____ =_____

FLORIDA MINE SAFETY PROGRAM
METAL AND NONMETAL FIRST AID COMPETITION
Judges' Discount Card
Station #2

Patient Assessment — **Control of Bleeding**
Physical Shock — **Soft-Tissue Injuries and Burns**
Musculoskeletal Injuries — **Transportation**

Team Name: _____ Team Number: _____

Team Members: Captain _____

_____

_____

Date: _____ Time to Complete Problem _____

A. Patient Assessment	**Discounts**
1. Not examining head (scalp, blood in hair, ears, etc.)	1x _____ = ____
2. Not assessing facial area	1x _____ = ____
3. Not assessing eyes	1x _____ = ____
4. Not inspecting nose	1x _____ = ____
5. Not inspecting mouth	1x _____ = ____
6. Not examining neck	1x _____ = ____
7. Not checking position of trachea	1x _____ = ____
8. Not inspecting jugular veins for distention	1x _____ = ____
9. Raising head if suspected spinal injury exists	6x _____ = ____
10. Not checking chest (placing hand on chest)	2x _____ = ____
11. Not gently feeling abdominal area	2x _____ = ____
12. Not checking pelvic area for injury	2x _____ = ____
13. Not checking genital area for obvious injury	2x _____ = ____
14. Not checking under patient (lower back) for injury	2x _____ = ____
15. Not checking lower extremities for injury	2x _____ = ____
16. Not checking lower extremities for paralysis	2x _____ = ____
17. Not checking upper extremities for injury	2x _____ = ____
18. Not checking upper extremities for paralysis	2x _____ = ____
19. Not inspecting back	2x _____ = ____
20. Not checking head-to-toe (according to fundamentals)	2x _____ = ____
21. Not checking medic alert bracelets/necklace	2x _____ = ____
22. Work other than taking support or controlling bleeding during secondary survey	4x _____ = ____
23. Not obtaining vital signs (BP, pulse, respirations)	4x _____ = ____

Patient Assessment **Subtotal** _____

B. Control of Bleeding

		Discounts
1.	Not controlling arterial bleeding immediately	20 x ____ = ____
2.	Not applying direct pressure to control arterial bleeding	20 x ____ = ____
3.	Releasing direct or pressure before bleeding is controlled	4 x ____ = ____
4.	Elevating an extremity with fracture present	4 x ____ = ____
5.	Not applying a tourniquet when direct pressure does not control bleeding	10 x ____ = ____
6.	Tourniquet – Ineffective application, improperly applied or loosened during problem and document time	4 x ____ = ____
7.	Applying tourniquets when not required	4 x ____ = ____
8.	Not giving any treatment for internal bleeding	4 x ____ = ____
9.	Bandages improperly applied (not entirely covered, wrong location, method, or position of knot, etc.)	2 x ____ = ____
10.	Failure to reassess distal circulation after bandaging extremities	4 x ____ = ____
11.	Removing or attempting to replace a dressing that is applied directly to the wound	2 x ____ = ____

Control of Bleeding **Subtotal**_____

C. Physical Shock

		Discounts
1.	Not administering oxygen per local protocols	2 x ____ = ____
2.	Not keeping patient in supine position	1 x ____ = ____
3.	Not calming and reassuring the patient	2 x ____ = ____
4.	Not maintaining a normal body temperature	1 x ____ = ____
5.	Providing fluids or food to the patient	4 x ____ = ____
6.	Not monitoring ABC's and vital signs	4 x ____ = ____

Physical Shock **Subtotal**_____

D. Soft-Tissue Injuries and Burns

		Discounts
1.	Not applying dressing for wound or burn (each)	8 x ____ = ____
2.	Not applying cover dressing	4 x ____ = ____
3.	Not using sterile gauze or sterile dressing	1 x ____ = ____
4.	Bandages improperly applied (not entirely covered), wrong location, method, or position of know, etc.)	2 x ____ = ____
5.	Failure to place gauze between fingers, toes, or back of ear (when required)	2 x ____ = ____
6.	Not properly treating an impaled object	2 x ____ = ____
7.	Not removing or indicating removal of clothing from affected area	2 x ____ = ____
8.	Not properly treating an evisceration	6 x ____ = ____
9.	Not simulating or indicating that gauze is moist (when required)	2 x ____ = ____
10.	Failure to properly treat sucking chest wound	10 x ____ = ____
11.	Not treating injuries in their proper order (according to fundamentals)	4 x ____ = ____
12.	Not properly treating eye injuries	1 x ____ = ____

Soft-Tissue Injuries and Burns **Subtotal**_____

E. Musculoskeletal Injuries

		Discounts
1.	Not rendering any treatment for a strain or sprain (each infraction)	4 x ____ = ____
2.	Not treating suspected spinal injury, fracture of pelvis or thigh (each) (this includes not using a properly sized cervical collar	12 x ____ = ____
3.	Not treating fractures other than (#4) (each)	10 x ____ = ____
4.	Failure to properly treat suspected skull fracture	2 x ____ = ____
5.	Failure to support fractures/dislocations until properly splinted	6 x ____ = ____
6.	Not properly treating dislocations (each)	8 x ____ = ____
7.	Failure to properly splint	2 x ____ = ____
8.	Failure to properly apply padding where needed	1 x ____ = ____
9.	Failure to check distal circulation and sensation before and after splinting	2 x ____ = ____
10.	Improperly lifting or rolling of patient (lifting to knee when patient has dislocated or fractured hip or spinal injury)	2 x ____ = ____
11.	Failure to apply cold applications to reduce pain and swelling	2 x ____ = ____
12.	Improperly applied bandages	2 x ____ = ____
13.	Improperly applied slings when required (each)	1 x ____ = ____

Musculoskeletal Injuries **Subtotal**_____

F. Preparation for Transportation

		Discounts
1.	Improper "log roll"	2 x ____ = ____
2.	Patient not placed on a spine board when required	2 x ____ = ____
3.	Improperly secured to a spine board or stretcher	1 x ____ = ____

Preparation for Transportation **Subtotal**_____

1.	Failure to locate and treat any condition (each infraction)	10 x ____ = ____
2.	Not completing problem in specified time	25 (total) _____
3.	Any team found committing an act that will endanger the patient, each infraction	50 x ____ = ____
4.	Any team whose member(s) intentionally disturb or destroy any component on a competition field will immediately be assessed this discount. Repeated offense may result in team disqualification at the discretion of the contest director.	100 (total) _____

Station #2 **Total Discounts** _____

_____
Judge

_____
Judge

_____
Scorecard Examiner

Notes

_____
_____
_____
_____
_____
_____
_____
_____
_____
_____

CONFINED SPACE
RULES

National Standardized
Surface Mine Rescue
Contests Rules

Confined Space Rules

MSHA APPROVAL DATE

Confined Space
Table of Contents

Confined Space Rules Committee Membership

A special thanks to the Confined Space Rules Committee membership for their valuable assistance in preparing this chapter of the Rule Manual. This Committee is comprised of representatives from the following organizations:

Russell Byers, Ohio Department of Natural Resources (Committee Lead)

William Dean, Pennsylvania Department of Environmental Protection, Bureau of Mine Safety

Danielle Hemmert, Genesis Alkali LLC

Brian Millington, Nyrstar Mining Company

Bill York-Feirn, Colorado Division of Reclamation Mining & Safety, Mine Safety & Training Program

General Information

Confined Space rules were designed as a training tool for rescue teams. They were developed for contest purposes only. Discretion should be used in actual mine emergency situations.

Each rescue team must consist of 5 persons who are employees of the mining companies or persons who are designated or contracted by mining companies and trained to perform rescue activities. Team will consist of 4 members and a captain, which will be designated by the team. Captain will be in charge of the rescue, lock and tag out, and locating any entrances into the space. The captain will perform no other work during the problem.

All rescue equipment used during rescue contest must be up to date according to manufactures guidelines. All equipment must be inspected by the team to assure no defects are detected by the proper manufacture guidelines.

Contest director can choose either a horizontal rescue or vertical rescue for the team to perform. Contest director can make the determination to turn off gas detection equipment during adverse weather conditions.

Teams will be given 10 minutes prior to starting the clock to perform the inspection of the equipment in the presence of the judges to assure the equipment is in good working order. Any equipment found not to be in safe working order will be removed from use by the judges.

Each team must be under guard, in a designated location, before the start of the Contest. Teams must remain continuously under guard until time to work the problem. Teams that have competed will not be permitted to return to the isolation area or communicate with any teams awaiting their turn to compete.

Any team or member receiving information concerning a Contest problem prior to arriving at the rescue area will be disqualified by the Chief Judge and Director(s).

Any team or member receiving unauthorized information concerning a Contest problem after arriving at the fresh-air base may be disqualified by the Chief Judge and Director(s) or discounted under Rule 20.

This will include smart phones, smart watches, pagers, or any other electronic device capable of sending or receiving information.

Teams will not be permitted to furnish or make placards indicating materials or equipment and then simulate their use.

Any required PPE or equipment not supplied by the team will be discounted as per rules defined.

Written Examination

A 15-question written exam will be given to the 4 members of the team and scores will be combined for a total score. Each wrong answer will be a 1-point deduction. Questions will be taken from "Confined Space Rescue Technician Manual" Revised Second Edition.

Chapters:

1- Confined Space Entry and Rescue Operations

3- Code of Federal Regulations

4- Confined Space Hazards

5- Atmospheric Monitoring

6- Hazard Control

8- Phases of Confined Space Rescue

During isolation, contest officials will administer a written examination to the five team members.

Answers will be multiple choice with only three choices. “None of the above" will not be used as one of the choices. The answers will be verbatim from the text of the chapters referenced above and will not be intentionally misspelled.

A maximum of 20 minutes will be allowed for the team members to take the test.

No wireless communication or electronic device, including Apple watches or similar devices, will be permitted in the testing area.

There will be no discussion during the time that written examinations are being taken.

Team members from the same team will not be permitted to sit at the same table while taking the written examination.

Minimum PPE Requirements for Team Members

- Hard Hat
- Safety Boots
- Gloves
- Chin Strap
- Eye Protection

Minimum Equipment Supplied by Team

- Breathing apparatus (Suitable for hazardous atmospheres)
- Air monitoring detector (Approved for hazardous atmospheres)
- Permissible cap light (Approved for hazardous atmospheres)
- Tripod/ Davit Arm system w/ retrieval line and back up retrieval line (Non- Powered}
- Safety harness (Each rescuer and patient) Harness will be a full body harness, minimum of 400-pound weight capacity, 5000 pound minimum tensile strength
- Blowing ventilation system
- Lock out, tag out, blank out kit (Used for multiple power sources)
- Communication system (Intrinsically safe for hazardous locations)
- Self- Retracting life- line per rescuer/ 50 foot minimum

Team will be given a statement to the activities that were being performed at the time of the incident to determine the course of action required for the rescue. If permitted location, the team will be given a copy of the permit to show the hazards associated with the location. A back up rescue team must be on site to initiate the rescue and will reflect that in any statement given to the team.

Irrespirable Atmosphere will be Defined as:

Atmospheres containing less than 19.5 percent oxygen (02), concentrations of carbon monoxide (CO) in excess of 50 PPM, hydrogen sulfide (H2S) in excess of 10 PPM, carbon dioxide (CO2) in excess of 5,000 PPM or any smoke are irrespirable atmospheres. No other irrespirable gases will be used for contest purposes. In an irrespirable atmosphere, patient must be protected by an approved breathing apparatus prior to being moved from that location. An unconscious patient must be protected by an approved breathing apparatus or device with full face piece. On a conscious person, if conditions permit, an approved breathing apparatus or Cara-vent may be donned by the patient with the assistance of the team. Simulation of proper donning of approved respiratory apparatus shall not be permitted.

Explosive Mixtures will be Defined as:

An explosive mixture will be present when methane (CH4) is between 5 and 15 percent inclusively and the oxygen (02) is 12.1 percent or greater, OR when hydrogen sulfide (H2S) is from 4 percent to 44 percent, regardless of the amount of oxygen. Carbon Monoxide (CO) is from 12.5% to 74% (12,500 ppm to 75,000 ppm)

Vertical/ Horizontal Rescue:

1. Failure to perform equipment safety checks in presence of judge will result in 2 Discounts.

2. All safety equipment will be checked in the presence of the judge to assure that each piece is in proper working order with no defects.

3. Failure to inspect each gas detecting instrument in the presence of judge will result in 2 Discounts.

4. Each detector will be checked for calibration, physical damage or defects before taken into space.

5. Equipment or PPE missing from the required list so to perform properly will result in l Discount each (4 Per team member max)

6. Failure of the team to lock and tag out all energy sources to the incident site will result in 1 Discounts per source.

7. Any energy source such as, but not limited to, electrical, liquid fill pipes, gas pipes, etc. Must be locked and tagged, to prevent injury to rescuers.

8. Failure to locate all entrances at the incident site will result in 1 Discount.

9. Captain must locate all openings of the area that could be used for ventilation or a secondary escapeway if not will result in 1 Discount.

10. Safety harness must be properly worn if not will result in 1 Discounts.

11. Harness must properly fit as to not let person slip out of harness during rescue. All buckles must me attached around legs and chest area.

12. Failure to take proper gas reading before entering space will result in 3 Discounts

Exercise Sample:

The initial sample will use a 2+2 sample method. Allow 2 minutes for pump to sample and 2 seconds per foot of tubing used. Example: If pump has 12 feet of tubing this would equal 24 seconds, add to initial 2 minutes and the total time needed is 2 minutes 24 seconds for the initial sample to be complete to enter space.

1. Failure to establish communications before entering space _____2 Discounts.

Rescuers must establish communications before entering confined space with surface personnel and maintain communications until rescue is complete and all persons are removed. If a loss in communication occurs the rescuer can use audible sounds, signals using a light source or life-line signals.

Rapping and Tapping:

1 Rap on side of vessel- All is ok
2 Raps on vessel tells other person to advance the retrieval line
3 Raps on vessel tells other person that line needs to be taken up
4 Raps tells the other person that they need help or to evacuate space

Light Signals:

1 Flash indicates all is ok.
2 Flashes tells the other person to advance the retrieval line.
3 Flashes tells the other person that the line needs taken up
4 Flashes tells the other person that they need help or to evacuate space.

Life- Line Signals:

1 Pull indicates all is ok.
2 Pulls tells the other person to advance the retrieval line.
3 Pulls tells the other person that the line needs taken up
4 Pulls tells the other person that they need help or to evacuate space.

2. Teams using blowing ventilation before entering space it must remain on until all occupants have been removed from the area _____4 Discounts.

Ventilation fan must be a minimum of 800 CFM with enough hose to reach area to be ventilated. If gas operated ventilation systems are used a 5-foot exhaust extension must be used to keep CO from entering air intake.

3. Gas detection instruments must remain on while rescuers are in the confined space to constantly monitor the atmosphere _____2 Discounts.

All persons entering the space must use a gas detector that is rated for hazardous areas and remain on until removed from the space. Gases may accumulate in areas not detected by gas monitoring from outside the space.

4. Rescuer outside the space must record atmospheric gases every 10 minutes _____2 Discounts.

Rescuer outside the space must constantly monitor the interior atmosphere while rescue is in progress. After initial reading is taken and rescuers have entered space, a gas reading will be taken and recorded on the Atmospheric Monitoring Results sheet every 10 minutes. This sheet will be given to the team once the clock has been started.

5. Rescuers must use a SCBA when entering Space if irrespirable atmosphere cannot be removed _____20 Discounts.

Rescuer must be under apparatus before entering the space. Must remain under apparatus until removed from the space. SCBA tank capacity must be capable of lasting long enough to complete the rescue. If low oxygen alarm has been activated, the rescuer must return outside the space to change bottle.

6. Failure of captain to examine the gauges and apparatus of persons entering space _____2 Discounts per person.

Captain must examine the face piece, head straps, harness and tank of each person entering the space by visual or by touching before person enters the space.

Tripod/or other rescue system used to attach to rescuer not properly used or installed _____ 10 Discounts.

7. Team members must attach retrieval line to harness while entering space and use life- line as backup will result in 2 Discounts for each not used.

The retrieval line must be attached to the rescuer whether horizontal or vertical entrance in case of emergency the rescuer can be pulled out. The life- line must also be attached to the rescuer during the rescue until they are removed from the space. The retrieval line will be used to remove patient from location.

8. Failure to locate and remove any hazards that could injure rescuer _____ 2 Discounts.

Rescuer must observe for any objects that could fall or objects that could cause injury to rescuer or patient during rescue operations. These objects must be removed. If hazard cannot be removed it will be marked by ribbon or any feasible way so it is easy seen so all persons can avoid the hazard as to not cause any injury.

9. Failure to protect patient from irrespirable atmosphere _____ 20 Discounts.

Proper protection must be used on persons exposed to or found in irrespirable atmospheres by either breathing apparatus or CAREvent.

10. Methane, carbon monoxide, hydrogen sulfide, and oxygen quantities will be shown on all gas placards. The order of the gases shown on the placards will be methane first, carbon monoxide second, Hydrogen sulfide third and oxygen fourth (example see below).
    - % CH4
    - PPM CO
    - % 02
    - PPM H2S

For contest purposes, gas detectors will be capable of testing for these gases although sensors may not be in place. A verbalization of the test will suffice. No other gases will be used for contest purposes.

11. Any act by a team which may result in an explosion of an explosive air/gas mixture _____ 30 Discount

Any ignition source such as flashlights, cell phones, electrical equipment that is moved through an explosive mixture of gas or gas that is moved over an ignition source.

12. Failure to locate missing persons _____ 10 Discounts.

13. Failure to properly attach harness to patient _____ 10 Discounts

Harness must be attached to patient using manufacturer guidelines.
Retrieval line must be hooked to the safety ring on the back of the patients harness for removal.

14. Failure to "Package" patient properly _____ 10 Discounts.

Any approved rescue equipment designed to remove patients from spaces, other than harness, shall be used as designed with the proper restraints.

15. Any act the furthers injury to the patient _____ 2 Discounts.

Excessive moving or handling of the patient that causes further injury or possible injury.

16. Failure to conduct a complete initial assessment of each patient _____ 2 Discounts per patient.

An initial assessment must be conducted of all persons who are encountered during the working of the problem. The assessment should commence once the team member has physically made contact with the person.

When assessing a conscious live person, a team member must physically contact the patient and verbalize the following assessments.

Ask if he/ she is okay; asking person if he/ she is "alright" will suffice.

When assessing an unconscious live person, a team member must physically contact patient and verbalize the following assessments.

- Ask patient if he/ she is okay; asking if he/ she is" alright"
- Look for absence of breathing or gasping
- Check for presence of a carotid pulse (5-10 seconds)

For contest purposes all patients will be either conscious or unconscious.

17. Team member talking to or receiving information from an unauthorized person without permission of the judge _____ 2 Discounts per infraction.

Unauthorized information given to the team by the patient would be prohibited.

18. Failure to follow proper procedure when putting apparatus on patient _____ 2 Discounts.

Mask tightness test is not required for an unconscious patient.

19. Assistance lent by supposedly unconscious patient _____ 2 Discounts.

Examples such as patient sitting up unassisted or moving arms to help in putting on apparatus, or unconscious patient communicating with team.

Once any patient is brought outside the space he/ she can remove his/her apparatus and turn it off.

20. Failure to remove patient(s) promptly _____ 6 Discounts - Maximum per location.

When a team finds a patient(s), either by visual or verbal contact, every effort must be made to remove them safely and promptly.

21. Less than five team members completing problem, each person _____ 2 Discounts.

22. Failure to properly fill out the confined space rescue permit _____ 1 Discount per item -Maximum of 8.

All areas of the permit will be filled out. Any spaces not used will have "N/ A" in the location. Check boxes will only be filled in if that work wascompleted.

23. Failure to comply with other written adopted National Rules not covered in Discount Sheets _____ 2 Discounts.

24. Failure of team to follow written instructions provided to the team for working of the Contest problem _____ 2 Discounts.

Written instructions will be defined as anything given to team after the clock is started. Any information in the written statement given to the team before the clock is started is to inform the team of the conditions leading up to the event and known conditions after the event and will not be discounted under this rule.

SCBA Donning Procedures

1. Lay out equipment
2. Loosen the shoulder straps
3. Open cylinder valve fully
4. Look behind you
5. Carefully lift the SCBA over your head on to your shoulder, hold shoulder straps on your elbow and slide the SCBA slowly down your back
6. Ensure proper resting on your shoulder & comfort to your back
7. Fasten waist belt properly
8. Adjust shoulder straps
9. Put on facemask, fit on the face properly. Adjust the head straps, from bottom to top.
10. Cover front of mask with hand and breathe in to assure proper tightness
11. Connect the facemask with Second Stage Valve
12. Breathe comfortably and ensure you are getting sufficient air supplied in the facemask through your air cylinder

CAREvent Donning Procedures

Procedures for getting under oxygen:

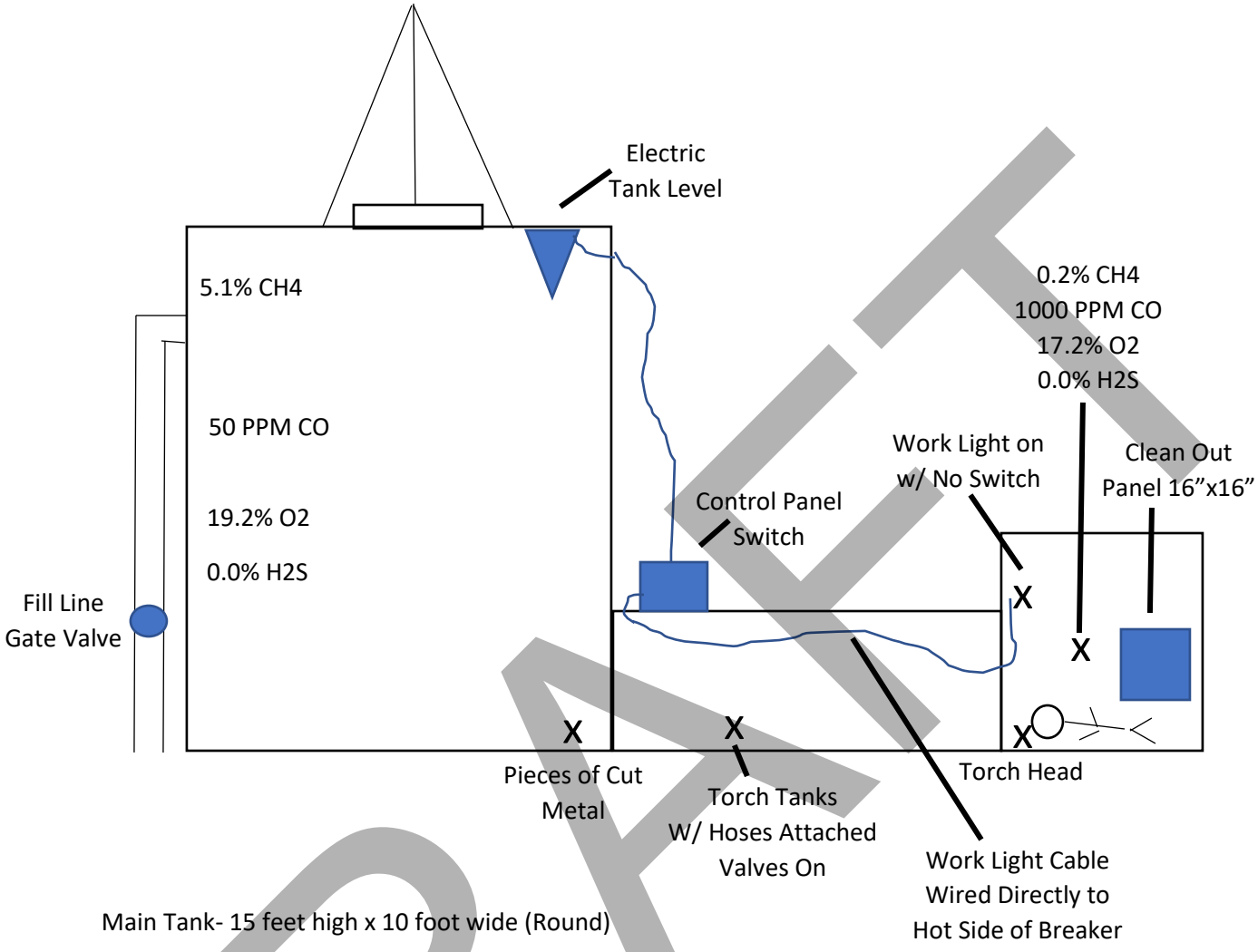
1. Bring mask close to face, check cylinder pressure and open cylinder valve. Face mask straps may be placed over the head and the mask allowed to hang loosely prior to opening cylinder valve. This will suffice for bringing the mask close to the face.

2. Put on facepiece properly and tighten straps; observe gauge.
3. Check gauge and operation, straps, etc.
4. Check cylinder pressure every five (5) minutes.

NOTE: CAREvent® DRA cylinder and regulator must be transported and used in a protective case to prevent damage.

DRAFT

Confined Space Sample Problem



Main Tank- 15 feet high x 10 foot wide (Round)

Section #2- 4 foot high x 4 foot wide x 10 foot long

Section #3- 8 foot long x 6 foot wide x 6 foot high

Approximate 40 foot of lifeline used.

Team will be given 10 minutes to perform equipment safety checks before stating the clock. No other work can be performed at this time.

Once the captain starts the clock the rescuers going into the space can don their SCBA's. Captain will look for any energy sources that needs locked out. (Fill Line Gate Valve, Control Panel Switch) (RULE 4) Captain will find a clean out door that can be used for ventilation but to small to bring patient out. (RULE 5) Captain can not remove door until area has been checked for other hazards.

Rescuers outside the space must take gas reading inside the space (RULE 7) Captain must check the SCBA's before rescuers enter space (RULE 13) and team must establish communications before entering the space. (RULE 8)

Confined Space Sample Problem

Tri- pod/ Davit System must be properly installed before lowing rescuer into space (RULE 14)

The two rescuers going into space can be dropped in, with properly worn harness (RULE 6), with each one having tied their lifeline outside the space (RULE 15). Detectors must remain on until removed from space so they can constantly monitor the atmosphere. (RULE10)

MAIN TANK

Once rescuers are in the space they will find "Pieces of Cut Metal" at the entrance of section #2 that must be removed before passing. (RULE 16) The rescues can place the "pieces of Cut Metal" placard to the Fill Line Gate Valve side of the main tank. The rescuers can enter section #2.

SECTION #2

Once the rescuers enter Section #2 they will find "Torch Tanks w/ Hoses Attached". They must turn off valves (RULE 16) and move to either side of the Section #2 space. Lines on the tank are tied off in space #3 and are unable to be removed at this point. Work light cable must be moved to the side to keep obstacles clear.

Section #3

Once in section #3 the rescuers will find a "Torch Head" which they can move to the side, a "Work Light w/ No Switch", cable wired directly to breaker and can not be locked out, a gas placard with low oxygen, an unconscious live man and the clean- out panel.

Once the rescuers make physical contact, they must complete an initial assessment (Rule 24), place an apparatus/CAREvent on patient to protect them from an irrespirable atmosphere (RULE 17), properly place harness on patient (RULE 21) or properly package patient (RULE 22). Patient must be immediately taken outside the space without delay (RULE 28).

If the "Clean Out Panel is removed during the problem, the explosive mixture in the main tank will be sent over the work light (Ignition Source) that will result in an explosion (RULE 19)

DRAFT

Position Number

Team Number

WRITTEN EXAMINATION

A

Discounts

1. For each incorrect answer. . . . . 1 _____

Total Discounts _____

Judge

Judge

Scorecard Examiners

NOTES

Team Number

Field Number

SURFACE NATIONAL MINE RESCUE CONTEST

Judges Discount Card

Judge

Judge

Judge

Judge

Scorecard Examiners

Recorders

	Discounts
1. Failure to perform equipment safety checks. . . . . in presence of judge	5_____
2. Failure to check gas detecting instruments in presence of judge.	2_____
3. Equipment or PPE missing to perform proper rescue. . . . . (4 per team max)	1_____
4. Failure to lock and tag out energy sources. . . . (Each Source)	5_____
5. Failure to locate all entrances. . . . . (Each Entrance)	2_____
6. Failure to properly wear safety harness.	5_____
7. Failure to take proper gas reading before entering space.	3_____
8. Failure to establish communications.	2_____
9. Turning off ventilation system once started.	2_____
10. Detectors not on while in space (Unless specified by contest director to be off).	2_____
11.Failure to record atmoshere inside space every 10 minutes	2_____
12. Failure to use SCBA in irrespirable atmosphere.	20_____
13. Failure of captain to examine apparatus and gauges.	2_____
14. Tri-pod or other rescue device not properly installed.	10_____
15. Failure to attach retrievel line and/ or lifeline to harness	2_____
16. Failure to locate and move any hazards.	2_____
17. Failure to protect patient from irrespirable atmosphere. .	20_____
18. Failure to record gases in proper order.	3_____
19. Any act by the team that results in an explosion of an explosive air/ gas mixture.	30_____
20. Failure to locate missing person.	10_____
21. Failure to properly attach harness to patient.	10_____
22. Failure to properly "Package" patient.	10_____
23.Any act that furthers injury to patient.	5_____

	Discounts
24. Failure to conduct proper initial assessment of patient.	2_____
25. Patient talking to or receiving information from unauthorized person.	5_____
26. Failure to follow proper procedure when placing apparatus on patient.	2_____
27. Assistance lent by supposedly unconscious patient.	2_____
28. Failure to proptly remove patient from space. .	6_____
29. Less than 5 team members completing problem	5_____
30. Failure to properly fill out the confined space rescue permit. . . . . .(Max 8 Discounts)	1_____
31.Failure to comply with other written adopted rules not covered in discount sheets.	2_____
32. Failure of team to follow written instructions provided for working of contest proplem.	2_____

_____

Total Discounts

National Standardized
Surface Mine Rescue
Contests Rules

Vehicle Extrication Rules

MSHA APPROVAL DATE

Vehicle Extrication Rules

Table of Contents

Vehicle Extrications Rules Committee Membership

A special thanks to the Vehicle Extrications Rules Committee membership for their valuable assistance in preparing this chapter of the Rule Manual. This Committee is comprised of representatives from the following organizations:

David Crafton, Mine Safety and Health Administration

Danielle Hemmert, Genesis Alkali LLC

David Leverknight, Mine Safety and Health Administration

Brian Millington, Nyrstar Mining Company

David Tant, Carmeuse Mining Company

Safety

Safety of all contestants and judges is the top priority. If the judge sees something that causes a safety concern, he/she will intervene immediately to stop the contest.

Introduction

Participants working on this problem will be given information that qualified personnel have already removed dash, roof as needed after team as determined the scene is safe. No hydraulic power tools will be needed at this level of competition. Effort should be used to create a realistic problem for maximum training for teams.

Each team will consist of 5 persons (4 team members and IC/Captain) who are employees of the mining companies or persons who are designated or contracted by mining companies and trained to perform rescue activities. All rescue equipment used will be up to date and used as per manufacturers guidelines or skills provided in the IFSTA Essential of Firefighting volume 7 and IFSTA principles of vehicle extrication 4th edition. All skills must be completed in time allowed or additional discount will be applied.

A minimum of 2 judges will be utilize for this contest. Judges will be supplied with skill sheets and discount forms. These are to be utilized as a tool for judging of contest. Judges will not improvise discounts if not in the interpretation of discount or skill sheets.

Teams will be required to ensure scene safety, secure the vehicle, windshield removal and remove the patient. This may include vehicle on its side, roof resting or resting on 4 wheels.

Written Examination

1.During isolation, contest officials will administer a written examination to the five working team members and the briefing officer. The five lowest test scores will be used for the cumulative score.

2.The written examination will consist of 15 multiple choice questions taken from the review questions and glossaries of the Essentials of Firefighting volume 7 workbook and Reference Manual. Chapter 5 PPE, Chapter 9 Tools, Chapter 10 Victim removal, Chapter 14 Vehicle scene safety, and Chapter 17 vehicle extrication.

3.Answers will be multiple choice with only three choices. “None of the above” will not be used as one of the choices. The answers will be verbatim from the text of the Modules referenced in Item #2 above and will not be intentionally misspelled.

4.A maximum of 20 minutes will be allowed for the team members to take the test.

5.Team members taking the written examination will not be permitted to take any written material or information into the testing area.

6.No wireless communication or electronic device, including Apple watches or similar devices, will be permitted in the testing area.

7.There will be no discussion during the time that written examinations are being taken.

8.Team members from the same team will not be permitted to sit at the same table while taking the written examination.

Materials List

Minimum PPE Requirements for the Extrication will consist of general rule personal protection equipment and an additional requirement of:

- Turnout gear, Tec-Gen gear, or Wildland Gear for extrication
- Respiratory protection for glass cutting (nomex, buff, etc.)
- Safety glasses
- Extrication or Leather gloves- Rated for small fire/fire extinguisher use
- Hearing protection

Equipment

Each team may supply their own rescue equipment that is required to complete the problem in accordance with the general supply list for the tasks. The problem organizer will supply an additional list of supplies if they are required. All pneumatic equipment requirements used to remove dash, roof, or doors will be previously completed or verbalized as completed prior to the problem. No tools with trigger locks will be allowed. Per MSHA standard Trigger locks not allowed to be used. Per MSHA standard, tools with trigger locks, the trigger locks will not be allowed in use during competition.

Minimum Equipment Expectation:

- Reciprocating Saw
- Cribbing Blocks
- Mechanical Jack
- Rescue Air Bags
- Air Supply for Air Bags
- Rope
- Halligan
- Ram
- KED
- Long Back Board with Straps
- Hyperthermia Kit
- Bleeding Rescue Kit

Pick Head Axe
Pry Bar
SCBA
Battery Cable Cutters
Patient Protection

Scenarios may include full turn out gear to perform the task. The problem organizer may also require that the problem be completed while wearing an SCBA. In these cases the organizer may decide whether the members actually use breathing air from the bottle or just wearing the SCBA.

Many skills require that equipment be prepared or assembled. Unless the context indicates otherwise, it is permissible to prepare or assemble the required equipment or a device at any time, as long as it does not interfere with the problem.

While performing the problem, the exact order of the steps (as outlines on the skill sheet) is not critical, unless the steps and order performed are critical to the particular skill. (IE Scene safety, after securing vehicle)

Some items in the problem may be verbalized information about a task or procedure. In such cases the judge must acknowledge the verbalization of the task was received. If not heard from the judge the task was not completed and discount points will remain. Judges will not answer questions regarding a specific task but may answer for clarification of a task.

Guidelines

Understanding injury profiles is the first step in adding value to the extrication process. The crashworthiness of vehicles is based on a detailed assessment of many factors. Translating this information into the initial and ongoing size-up for rescue teams can be intimidating. Begin by considering what the typical crashworthiness test is and make a determination if the impact the survivor compartment sustained was beyond that.

Table 1: Crash report

C	Critical information	Glasgow Coma Scale level, adequacy of ventilations and pulse
R	Restraints used	Types, speed and type of impact
A	Assessment	Account for all limbs, medical history, damage to passenger compartment
S	Suspected injuries	Chest assessment, spine/back discomfort, long bones and pelvis
H	Help needed	Plan for extrication after disentanglement

Table 2: The extrication process

Size up
Scene safety
Vehicle stabilization
Patient access
Disentanglement
Extrication
Treatment and transport

This high index of suspicion for severe injuries will lead the Teammate to consider what severe injuries may be involved.

Teamwork

Units should voice they will always position their equipment to consider upwind and uphill hazard separation and allowing rescue and fire suppression equipment adequate space.
Vehicle extrications pose many hazards to rescuers and survivors. Teams should operate within the hot, warm and cold zone safety fields.
The hot zone should generally be a 15-foot parameter around the vehicle, and everyone in that zone should have proper PPE and respiratory protection as needed.

Scene Safety

Team members are required to do a walk around for scene safety and vehicle stabilization. Teams may place cones or barrier tape to secure scene entry. Problem designer may supply items also to be utilized for scene safety barrier.

The approach to a problem involves a detailed 360-degree size up, scene safety measures, ongoing vehicle stabilization, safe patient access, disentanglement of the vehicle from the patient and extrication of the patient from the vehicle. (See Table 2 above.) Also gathering information about fuel, battery locations and restraint systems. Scene size-up should include looking for evidence the driver was alert and reactive at the time of the accident through steering or braking maneuvers. Gathering information about posted and observed speeds.

Patient protection should include both hard and soft material. Hard material such as polycarbonate (lexan) will shield the patient from impact debris and tools, and soft

material such as a tarp will protect the patient from glass. If sparking tools are used, a non-flammable blanket should be used for protection.

Stabilization of Vehicle

Air bag placement and cribbing with stabilization equipment
D/C battery
Ensure vehicle is off and in park
Wheel chocks
Emergency brake set
Removal of door or displacement of door

Following scene assessment and before any other extrication activities are begun, team must stabilize the vehicle(s) involved. Vehicles must be stabilized from moving in a horizonal movement and a vertical movement. This can be maintained by air bags, wheel chocks, park position, parking brake, wedges, cribbing, and jacks. At no time will the teammate place any part of their body under the vehicle.

Air bags will be inflated 1 inch and then cribbed. Only 1 inch inflation increments to achieve stabilization of the vehicle. Two lifting bags may be utilized to achieve stabilization.

Securing Compartment Safety Air Bags

All battery terminals must be removed from batteries ensuring the vehicle is secure and will not run. Keys must be removed from the steering column and the vehicle placed in park and emergency brake engaged. Teams will need to verbalize checking Supplementary Restraint System or "SRS" by looking for larger or more rectangular steering wheel hub. Look for the name or initials embossed on steering wheel hub trim cover:

'Airbag' 'SRS' 'SIR'
Side Impact Air Bag

When extricating it is possible to deploy the SIPS Bag if the sensor is hit. The sensors for the purpose of competition will be deactivated or removed for safety of the team. Teams will need to verify that the equipment utilized in the problem does not have a side air bag. Teams will need to verbalize the checking the vehicle for a SIPS bag and Sensor unit by looking on the windshield or seat panel. These can be anywhere in the vehicle with new car technology should state that prior to any cuts made in an area, teams will peal back plastic and look for these devices/actuators.

Windshield and Side Window Removal

Side/ Rear Window Removal

Initially, it must be determined whether the glass is tempered or laminated. Do not plan on being able to figure out what type of glass you have based on labels or markings on the glass, if you can even find them at all.

Glass size-up, if there are large cracks in the glass, you can anticipate that the glass is laminated safety glass and immediately proceed to the next step of the removal process.

If you do not see any cracks or damage to the glass and you are assigned to remove it, you should perform a very quick field test on it. After ensuring that the patient and inside rescuer are protected and prepared for glass-breaking, use a center punch on the glass just as you would if it were known to be tempered glass. Observe the results.

If the punch breaks the glass into the familiar “nuggets,” then you just broke a tempered glass window. If the punch results in only a “BB” mark in the glass, move over an inch or so and try the punch again. If you get a second BB mark, then we are dealing with a laminated window glass.

Once confirmed as laminated glass, the second step of our glass-removal skill is to use any windshield-removal tool to cut across the bottom of the window. An axe, a Glas-Master tool, a reciprocating saw, or any of the electric glass removal tools will make this cut. Whatever you use on a windshield, you can use it for the bottom cut.

You follow this bottom cut with the third step of our Skills Update, glass removal. Pry the bottom edge of the laminated glass window outward. Grab the glass and pull it outward and downward. The entire laminated window glass pane will come out of the window opening as one large piece. Unlike the windshield, laminated door-window glass is only secured along its bottom edge, so that is why this technique is so effective.

Laminated side-window glass may be found in front row door windows for the driver and front passenger, or it may be present in all door windows. Don’t assume that just because you find laminated glass in the front door windows that the rear doors will also have laminated glass. They may be or they may not. You should plan on sizing-up each window you encounter during your glass removal work.

Windshield Removal

Removing the glass may be necessary if rescuers cannot operate or unlock the doors, cannot retract, lower or otherwise open the glass. Rescuers should protect vehicle occupants from any glass dust and chips that the removal process produces. To protect themselves, rescue personnel should wear full PPE to include eye and

respiratory protection. If rescuers need to break a window to access a victim, they should choose a window as far away from the victims as possible. Vehicles use multiple types of window materials. Rescuers should know how to remove the following types of window materials:

Laminated Safety Glass
Tempered Glass
Polycarbonate
Transparent Armor
Enhanced Protective Glass (EPG)

NOTE: Rescuers should continuously monitor new developments in automotive glass. Removing laminated safety glass. Removing windshields and other laminated windows is more complicated and time-consuming than removing tempered side or rear windows. During many extrication operations, rescuers may decide to leave the windshield in place.

Skill Sheet 8-2 lists the steps for removing the window seal to remove vehicle glass.

Windshields and other windows constructed of laminated safety glass do not shatter and fall out. Rescuers can use the following hand tools to remove or cut laminated glass:

- Reciprocating Saw
- Commercial Glass Removal Tools
- Air Chisel
- Axe
- Long-Handled Hook

Removing Tempered Glass

To break and remove side and rear tempered glass windows, rescuers should strike them with a sharp, pointed object such as a glass hammer. They may also press a spring-loaded center punch against the glass. Rescuers should usually apply these tools at a lower corner of the glass, but they may work at any point on the glass surface. When using a spring-loaded center punch, rescuers should brace the hand holding the tool with the other hand to increase control of the tool. Having control prevents the rescuer's hand from going into the glass when it breaks. It also prevents the center punch from pushing through the window opening and possibly striking any vehicle occupant located near the window. Rescuers may also use a standard center punch or phillips head screwdriver. They must drive both of these tools into the glass with a hammer or other striking tool. A controlled strike with the pick end of a pick-head axe or

Halligan tool in the corner of the window will also work if rescuers have no other available tools. To control the glass fragments, rescuers may apply a sheet of self-adhering contact paper to the surface of the glass. Once broken, the glass adheres to the contact paper. Alternatively, rescuers may place duct tape on the windows and then spray the glass surface with an aerosol adhesive that forms a coating on the glass. This coating sets up in seconds and allows rescuers to break the glass and retain it in a sheet. Then rescuers can remove the glass in sheets instead of tiny pieces.

Skill Sheet 8-4 lists the steps for removing tempered glass

Removing alternative types of glass. Rescuers should know how to remove other types of glass such as enhanced protective glass, polycarbonates, and transparent armor.

Skill Sheet 8-5 lists the steps for removing alternative types of vehicle glass.

The Three-Step Process for Laminated Glass Removal

1. Size-Up—Determine if the glass is laminated or tempered
2. Cutting—Cut from edge to edge along the bottom of the glass
3. Removing—With a firm grip, pull it outward and downward

On The Inside

Patient access should be performed as soon as the vehicle is stable and any external hazards are controlled. Consider that doors unaffected by the crash may open normally. When breaking glass is required, it should be done farthest from the patient until they're adequately protected.

The inside member should be prepared with safety equipment, flashlights, hemorrhage control supplies, spinal immobilization equipment and patient lifting straps. A dedicated outside member should stay in constant communication with the inside member to provide any additional equipment.

The inside team member should perform an initial exam of the survivor for life threatening injuries and vehicle encroachment, provide psychological first aid and perform any treatment that doesn't interfere with the problem. The inside teammate should account for all occupants in the vehicle, determine seat position and function and damage to the interior compartment. They should also identify fired or unfired air bags and determine if the patient was restrained.

The presence of unfired restraint systems should be communicated with the team leader. Managing risk and providing protection to all team members and the patient are critical to permitting the problem to proceed at an appropriate speed. If the patient has an adequate airway and ventilation, an early priority will be to determine the extent of the entrapment and communicate this in detail to the rescue team leader.

The inside team members ability to determine and communicate the internal entrapment and possibly remove debris will improve the speed of the rescue. The extent of entrapment will vary based on impact direction, survivor characteristics and vehicle type. In many cases the lower extremities will simply disappear below the dash and their status is unknown.

If the limbs can be located and it is determined the entrapment is a focal entrapment by a pedal or floor pan wrapped around the foot, the rescue team strategy should change appropriately. A verbal recognition of the entrapment will be expressed, and the scenario will allow the team mates to remove extremity from under the dash or pedal. Notification must be voiced to the patient and judge prior to releasing the patient from entrapment.

An overweight or obese patient will also impact the strategy. The larger patient generally is entrapped by pressure in all directions and requires access from 360 degrees to allow team members adequate access to lift without risking injury, lifting straps or large webbing can permit adequate and safe points for rescuers.

Ongoing assessment of the trapped survivor will consist of pertinent medical history of cardiac or endocrine diseases or neurological disorders are important findings to communicate to the Judge.

Each rescue maneuver (door removal, dash removal, roof removal, etc.(voiced)) should take less than five minutes. After size-up, a rescue team should have a good idea of how many maneuvers it should take. A rescue effort lasting longer than four major maneuvers should be considered an extended extrication. During extended extrications, the medical concerns for hypothermia should be taken in consideration.

Hypothermia management kits for any patient with a delayed rescue must be available in kit.

Explanation of Discounts

1.Team did not vocalize that they were upwind of hazard. ____5pts
2.Teammate did not recognize the need for a vehicle stabilization. ____25 pts
3.Teammate did not utilize the necessary resources to conduct operation. ___10pts
4.Team utilized jack but did not crib or secure prior to patient removal. _____10 pts
5.Did not recognize and initiate emergency response from additional services. ____5 pts
6.Team must state that they are calling for additional resources for roof/dash removal if warranted by the problem. _____10pts
7.Failed to recognize general hazards associated with the stabilization of the vehicle and patient recovery. _____20pts
8.Teams must do a 360 walk around for hazards such as airbag deployment/ battery connections fuel leaks etc. _____10pts
9.Failed to ensure scene safety prior to stabilization of the vehicle____5pts

10. Teams must place tape or cones to show boundaries of hot zone and working area that is controlled. _____10pts
11. Failure to inflate 1 inch and crib (ie. cribbed with a 4 inch lift) _____2pts per infraction
12. Air bags will be inflated 1 inch and then cribbed. Only 1 inch inflation increments to achieve stabilization of the vehicle. Two lifting bags may be utilized to achieve stabilization. _____10 pts
13. Teammate not in full PPE___2pts per missing PPE
14. Failure to verbalize that the patient's foot is entrapped under pedal____5pts per infraction/move
15. A verbal recognition of the entrapment will be expressed, and the scenario will allow the team mates to remove extremity from under the dash or pedal. Notification must be voiced to the patient and judge prior to releasing the patient from entrapment. _____10 pts
16. Patient was not covered to protect from glass removal____15pts

DRAFT

Objective(s): 6.4.1 2008 NFPA 1001 Standard	Primary Task: **USES CRIBBING BLOCKS**	
Skill No. 5.1	Station No. 5	**MAXIMUM TIME ALLOWABLE: 6 MINUTES**

INSTRUCTIONS TO THE MONITOR/EVALUATOR

Minimum protection required for evaluators - Full PPE (no SCBA)

The candidate and designated team members shall demonstrate the use of the following rescue tools:

Cribbing and shoring materials

INSTRUCTIONS TO THE CANDIDATE

"You and designated team members, given a vehicle and appropriate cribbing, will demonstrate the proper use of cribbing for stabilizing the given vehicle. You will begin on my instruction to start. The skill will end when you state to me that you have completed all of the identified steps."

CANDIDATE PERFORMANCE	YES	NO
♦ 1. Wears full PPE.		
2. Arranges cribbing blocks in a crate-like manner with two or more blocks laid side by side.		
3. Lays two more blocks on top of and perpendicular to the first two blocks near the end of the blocks underneath. Never allows hand to be higher than cribbing, uses additional cribbing to push cribbing into place. Never puts hand into a place of danger (between auto body and cribbing).		
4. Continues in this process until desired height is reached.		
5. Uses angled blocks to wedge between the top blocks and the object being stabilized.		
♦ 6. The candidate must complete the skill in the "Maximum Allowable Time" indicated above.		

Reference: IFSTA Essentials 5th Edition, Chapter 8 Approved by Committee

♦ *Critical Step* - Failure on this step mandates failure on the entire objective!	**Total steps candidate must complete to Pass:**	4	**TOTALS**		

Objective(s): 6.4.1 2008 NFPA 1001 Standard	Primary Task: **CRASH SCENE ASSESSMENT**	
Skill No. 5.15	Station No. 5	**MAXIMUM TIME ALLOWABLE: 3 MINUTES**

INSTRUCTIONS TO THE MONITOR/EVALUATOR

Minimum protection required for evaluators - Full PPE (no SCBA)

1. Candidate shall be provided with a crash scene and portable radio.
2. The candidate shall be given the instructions below before beginning the exercise.

INSTRUCTIONS TO THE CANDIDATE

1. "The candidate, provided a radio, shall demonstrate the proper procedures for conducting a crash scene assessment.

CANDIDATE PERFORMANCE	**YES**	**NO**
♦ 1. Don full protective clothing.		
♦ 2. Establishes command, checks the area for existing and potential hazards.		
3. Radio dispatch with location and the number and type of vehicles involved.		
4. Radio dispatch the number and apparent extent of injuries		
5. Identifies traffic and non-traffic hazards (hazardous materials, utilities, crowds, etc.)		
6. Cording off area with barricade/fire line tape.		
7. Describes how hazards will be handle identified in item 4.		
♦ 8. The candidate must complete the skill in the "Maximum Allowable Time" indicated above.		

Reference: IFSTA Essentials, 5th Edition, Chapter 8 Approved by Committee

♦ ***Critical Step*** - Failure on this step mandates failure on the entire objective!	**Total steps candidate must complete to Pass:**	5	**TOTALS**		

Objective(s): 6.4.1 2008 NFPA 1001 Standard	Primary Task: **USING A RECIPROCATING SAW**	
Skill No. 5.2	Station No. 5	**MAXIMUM TIME ALLOWABLE: 3 MINUTES**

INSTRUCTIONS TO THE MONITOR/EVALUATOR

Minimum protection required for evaluators - Full PPE (no SCBA)

1. Candidate shall be provided a reciprocating saw, spare blades and safety goggles.
2. Candidate shall be provided with an electric power source and a prop for cutting.
3. The candidate shall be given the instructions below before beginning the exercise.

INSTRUCTIONS TO THE CANDIDATE

1. "The candidate shall demonstrate the proper use of a reciprocating cutting saw."

CANDIDATE PERFORMANCE	**YES**	**NO**
♦ 1. Dons full protective clothing including helmet and eye protection.		
♦ 2. Checks the area for existing and potential hazards		
3. Inspects the saw blade for damage and type for the job.		
♦ 4. Checks safety features, ensures footplate in place and power cord in good condition.		
♦ 5. Ensures safety goggles in place, faceshield down and wears gloves.		
6. Connects tool to power source, ensures ground prong is present on plug. 5.a. Ensures that all trim is removed to expose metal and any other hazards.		
7. Positions the saw, one hand on handle, other hand on saw barrel.		
8. Ensures cord is behind firefighter and away from the blade, if applies.		
9. Makes the directed cuts, keeps blade perpendicular to work. Does not force blade.		
10. Stops the blade by releasing trigger.		
11. Removes blade from the work, cautious not to bend blade and disconnects power.		
12. Returns device to proper storage.		
♦13. The candidate must complete the skill in the "Maximum Allowable Time" indicated above.		

Reference: IFSTA Essentials 5th Edition, Chapter 8 Approved by Committee

♦ ***Critical Step*** - Failure on this step mandates failure on the entire objective!	**Total steps candidate must complete to Pass:**	9	**TOTALS**		

Objective(s): 6.4.1 2008 NFPA 1001 Standard	Primary Task: **USING AIR LIFTING BAGS (COMMAND) SINGLE BAG**	
Skill No. 5.10	Station No. 5	**MAXIMUM TIME ALLOWABLE: 10 MINUTES**

INSTRUCTIONS TO THE MONITOR/EVALUATOR

Minimum protection required for evaluators - Full PPE (no SCBA)

1. Candidate shall be provided with safety goggles and the following:
   a) Air lifting bag (medium or low-pressure)
   b) SCBA Cylinder and pressure regulator and hose
   c) Cribbing, shoring blocks, wedges and shims
   d) Air bag controller, safety hoses and adjustable wrench
2. Candidate shall be provided with 3 assistants and a prop for demonstrating.
3. The candidate shall be given the instructions below before beginning the exercise.
4. Command candidate shall act as Safety Officer.

INSTRUCTIONS TO THE CANDIDATE

1. "The candidate shall demonstrate the proper set-up and use of Air Lifting Bags. Candidates shall work as a team, with assignments for command, cribbing, bag placement and air supply."

CANDIDATE PERFORMANCE	**YES**	**NO**
1. Establishes command and sizes up the scene, checks the area for existing and potential hazards.		
♦ 2. Inspects area for existing and potential hazards.		
3. Plans the operation. Assigns duties and gives brief responsibilities.		
♦ 4. Acts as safety officer. Ensures safety goggles used, faceshields and gloves used.		
5. Directs Cribbing to initiate his/her detail.		
6. Directs Air Supply to initiate his/her detail.		
7. Directs Air Bag Placement to initiate his/her detail.		
8. Constantly monitors the evolution and directs team as necessary.		
9. Initiates air bag fill.		
10. Upon completion of detail, directs deflation of air bag.		
11. Constantly monitors for load shift.		
12. Maintains control of the exercise, handles problems that arise, if applicable.		
13. Directs all equipment and components return to service and proper storage.		
♦14. The candidate must complete the skill in the "Maximum Allowable Time" indicated above.		
Reference: IFSTA Essentials 5th Edition, Chapter 8 Approved by Committee		

♦ ***Critical Step*** - Failure on this step mandates failure on the entire objective!	**Total steps candidate must complete to Pass:**	10	**TOTALS**		

Objective(s): 6.4.1 and 6.4.2 2008 NFPA 1001 Standard	Primary Task: **USING AIR LIFTING BAGS (CRIBBING)**	
Skill No. 5.11	Station No. 5	**MAXIMUM TIME ALLOWABLE: 8 MINUTES**

INSTRUCTIONS TO THE MONITOR/EVALUATOR

Minimum protection required for evaluators - Full PPE (no SCBA)

1. Candidate shall be provided with safety goggles and the following:
   a) Air lifting bags (medium or low-pressure)
   b) SCBA Cylinder and pressure regulator and hose
   c) Cribbing, shoring blocks, wedges and shims
   d) Air bag controller, safety hoses and adjustable wrench
2. Candidate shall be provided with 3 assistants and a prop for demonstrating
3. The candidate shall be given the instructions below before beginning the exercise.

INSTRUCTIONS TO THE CANDIDATE

1. "The candidates shall demonstrate the proper set-up and use of Air Lifting Bags. Candidates shall work as a team, with assignments for command, cribbing, bag placement and air supply."
2. "The candidate shall check all PPE and safety equipment of team."

CANDIDATE PERFORMANCE	YES	NO
1. Accepts assignment under the command system.		
♦ 2. Inspects area for existing and potential hazards.		
♦ 3. Ensures all protective clothing in place. Gloves, goggles and faceshield down.		
♦ 4. Candidate shall check all PPE and safety equipment of team.		
5. Discusses with command a plan of action concerning cribbing type and location.		
6. Upon direction of command, places a base for air bag footing, free of hazards.		
7. Base is of adequate size and height to effect adequate lift.		
8. As bag is inflated, shores load with box or crosshatch type cribbing & adequate support through out operation. (Never allows hand to be in place of danger)		
9. Monitors for any load shift during inflation.		
10. Communicates with other team members and command.		
11. Removes cribbing, piece by piece, as load is lowered for bag removal.		
12. Monitors for any load shift during deflation.		
13. Removes remaining cribbing once bags are removed.		
14. Returns the cribbing and components to proper storage.		
♦15. The candidate must complete the skill in the "Maximum Allowable Time" indicated above.		
Reference: IFSTA Essentials 5th Edition, Chapter 8 Approved by Committee		

♦ ***Critical Step*** - Failure on this step mandates failure on the entire objective!	**Total steps candidate must complete to Pass:**	10	**TOTALS**		

Objective(s): 6.4.1 and 6.4.2 Primary Task: **USING AIR LIFTING BAGS**
2008 NFPA 1001 Standard **(AIR BAG PLACEMENT)**
Skill No. 5.12 Station No. 5 **MAXIMUM TIME ALLOWABLE: 8 MINUTES**

INSTRUCTIONS TO THE MONITOR/EVALUATOR

Minimum protection required for evaluators - Full PPE (no SCBA)

1. Candidate shall be provided with safety goggles and the following:
   a) air lifting bags (medium or low-pressure)
   b) SCBA Cylinder and pressure regulator and hose
   c) Cribbing, shoring blocks, wedges and shims
   d) Air bag controller, safety hoses and adjustable wrench
2. Candidate shall be provided with 3 assistants and a prop for demonstrating.
3. The candidate shall be given the instructions below before beginning the exercise.

INSTRUCTIONS TO THE CANDIDATE

1. "The candidates shall demonstrate the proper set-up and use of Air Lifting Bags. Candidates shall work as a team, with assignments for command, cribbing, bag placement and air supply."

CANDIDATE PERFORMANCE	YES	NO
1. Accepts assignment under the command system.		
♦ 2. Inspects area for existing and potential hazards.		
♦ 3. Ensures all protective clothing in place. Gloves, goggles and faceshield down.		
4. Discusses with command a plan of action concerning air bag type, size, placement.		
5. Inspects bags for damage.		
6. Positions bags on cribbing bases, carried by handles.		
7. Places bags completely under load, smaller bags on top, proper side up.		
8. Ensures bags are centered under load and on top of each other.		
♦ 9. Positions controller out of danger.		
10. Communicates with command and team.		
♦ 11. Monitors for load shift during inflation. As bag is inflated, shores load with box or crosshatch type cribbing & adequate support through out operation. (Never allows hand to be in place of danger)		
12. Assists Air Supply by monitoring inflation volume and watching for leaks.		
♦ 13. Monitors bags for potential "kick out".		
♦ 14. Monitors for any shift in load during deflation.		
15. Removes air bags from under load.		
16. Returns the air bags and components to proper storage.		
♦ 17. The candidate must complete the skill in the "Maximum Allowable Time" indicated above.		

Reference: IFSTA Essentials 5th Edition, Chapter 8 Approved by Committee

♦ ***Critical Step*** - Failure on this step mandates failure on the entire objective!

Total steps candidate must complete to Pass: 12 **TOTALS**

Objective(s): 6.4.1 and 6.4.2 2008 NFPA 1001 Standard	Primary Task:	
Skill No. 5.13	Station No. 5	**MAXIMUM TIME ALLOWABLE: 8 MINUTES**

INSTRUCTIONS TO THE MONITOR/EVALUATOR

Minimum protection required for evaluators - Full PPE (no SCBA)

1. Candidate shall be provided with safety goggles and the following:
   a) Air lifting bags (medium or low-pressure) b) SCBA Cylinder and pressure regulator and hose
   c) Cribbing, shoring blocks, wedges and shims d) Air bag controller, safety hoses and adjustable wrench
2. Candidate shall be provided with 3 assistants and a prop for demonstrating.
3. The candidate shall be given the instructions below before beginning the exercise.

INSTRUCTIONS TO THE CANDIDATE

1. "The candidates shall demonstrate the proper set-up and use of Air Lifting Bags. Candidates shall work as a team, with assignments for command, cribbing, bag placement and air supply."

CANDIDATE PERFORMANCE	**YES**	**NO**
1. Accepts assignment under the command system.		
♦ 2. Inspects area for existing and potential hazards.		
♦ 3. Ensures all protective clothing in place. Gloves, goggles and faceshield down.		
4. Discusses with command a plan of action concerning air bag type, size, placement.		
5. Readies air supply. Turns regulator T-handle *counterclockwise* to NO PRESSURE.		
6. Closes regulator output.		
7. Attaches regulator to SCBA cylinder tightens connection.		
8. Pressurize the regulator. Checks gauge readings for match. Output should be zero.		
♦ 9. Turns regulator handle *clockwise* to **pressurize**, stops at recommended pressure.		
10. Couples regulator hose to controller. Ensure secure connection.		
11. Open regulator output, pressurize the controller.		
12. Couples air supply safety hoses to air bags, makes connections to controller.		
13. Tests for relief valve operation by kinking hoses between controller and bags. (Verbalize)		
14. Turn control valves in proper direction, observes gauges and relief valves for operation.		
15. Communicates with command and team.		
♦16. Activates controller to inflate bags upon command. Lifts load without overinflating.		
17. Allows load to rest on cribbing. Reinflates to necessitate crib removal.		
18. Deflates slowly, allow cribbing to be removed, piece by piece.		
19. Shuts off air supply, bleeds system, disconnects system and hoses.		
20. Returns the cylinder, regulator and components to proper storage.		
♦21. The candidate must complete the skill in the "Maximum Allowable Time" indicated above.		
Reference: IFSTA Essentials 5th Edition, Chapter 8. Approved by Committee		

♦ ***Critical Step*** - Failure on this step mandates failure on the entire objective!	**Total steps candidate must complete to Pass:**	14	**TOTALS**		

Objective(s): 6.4.2 2008 NFPA 1001 Standard	Primary Task: **TOOL IDENTIFICATION**	
Skill No. 5.22	Station No. 5	**MAXIMUM TIME ALLOWABLE: 5 MINUTES**

INSTRUCTIONS TO THE MONITOR/EVALUATOR

Minimum protection required for evaluators - Full PPE (no SCBA)

1. The candidate shall identify and retrieve rescue tools which are located on the fire apparatus or rescue unit.
2. Rescue tools shall be taken off the fire apparatus/unit truck and placed in front of the evaluator.
3. A tarp should be placed on the ground for tools to be placed on.

INSTRUCTIONS TO THE CANDIDATE

1. The candidate shall be able to identify and retrieve rescue tools and place them on the tarp that is provided.

CANDIDATE PERFORMANCE	**YES**	**NO**
1. Rope		
2. Cutting/spreading tool		
3. K-12		
4. Halligan Tool		
5. Ram		
6. Pick head ax		
7. Pry bar		
♦8. The candidate must complete the skill in the "Maximum Allowable Time" indicated above.		

Reference: IFSTA Essentials 5th Edition, Chapter 9 Approved by Committee

♦ ***Critical Step*** - Failure on this step mandates failure on the entire objective!	**Total steps candidate must complete to Pass:**	5	**TOTALS**		

Objective(s): 6.4.1 2008 NFPA 1001 Standard	Primary Task: **USING A MECHANICAL JACK**	
Skill No. 5.3	Station No. 5	**MAXIMUM TIME ALLOWABLE: 3 MINUTES**

INSTRUCTIONS TO THE MONITOR/EVALUATOR

Minimum protection required for evaluators - Full PPE (no SCBA)

1. Candidate shall be provided a mechanical jack, flat board or plate, shims, cribbing, wedges and safety goggles.
2. Candidate shall be provided with a partner (assistant) and a prop for demonstrating.
3. The candidate shall be given the instructions below before beginning the exercise.

INSTRUCTIONS TO THE CANDIDATE

1. "The candidate shall demonstrate the proper use of a mechanical jack device."

CANDIDATE PERFORMANCE	**YES**	**NO**
♦ 1. Dons full protective clothing with helmet and eye protection.		
♦ 2. Checks the area for existing and potential hazards		
3. Assess jack footing (Base surface).		
♦ 4. Ensures safety goggles in place, faceshield down and wears gloves. (and assistant)		
5. Board or plate is placed under load and shimmed for jack base.		
6. Jack is positioned under load on base, fully retracted.		
7. Control lever is placed in the UP position.		
8. Load is lifted by pumping jack lever slowly.		
9. Directs assistant to crib the load as it is raised, ensures enough is used to support.		
10. Continually monitors load for shifting.		
11. Upon completion of lift, places control lever in DOWN position.		
12. Lowers weight of load, allows to rest on cribbing material.		
13. Places control lever in the UP position.		
14. Lifts load slightly off cribbing.		
15. Returns control lever to DOWN position.		
16. Lowers load to original position, directing assistant to remove cribbing, piece by piece, as the load is lowered.		
♦17. Ensures assistant NEVER reaches under the load and ensures load DOES NOT shift.		
♦18. The candidate must complete the skill in the "Maximum Allowable Time" indicated above.		
Reference: IFSTA Essentials 5th Edition, Chapter 8 Approved by Committee		

♦ ***Critical Step*** - Failure on this step mandates failure on the entire objective!	**Total steps candidate must complete to Pass:**	12	**TOTALS**		

WARNING: Rescuers must ensure that the vehicle is properly stabilized and the scene is safe.

CAUTION: Rescuers must take necessary precautions to protect themselves and victims from hazards including, but not limited to, glass fragments and dust, jagged metal, SRS gas cylinders, undeployed airbags, and fire hazards.

NOTE: Only use Hi-Lift® jacks that are designed for and dedicated to extrication tasks. In this method, the jack is inverted in order to maintain the carriage and operating handle at an accessible level. Inspect and maintain all equipment according to local SOPs and manufacturer's guidelines.

Step 1: Maintain control of the door opening by deploying cribbing or lashing the door to the adjacent post.

Step 2: If the window is framed with a solid frame attached to the door, separate the frame from the roof line, and cut or remove it.

Step 3: Place the jack's operating lever in the raised position.

NOTE: Place the jack's operating lever in the raised position prior to positioning the jack.

Step 4: Place the base of the jack on the upper section of the door at the roof line.

Step 5: Move the jack to a position over the latching mechanism.

Step 6: Place the carriage of the jack in position for it to "grab" the inner panel/skin of the door.

Step 7: Secure the main bar of the jack toward the base plate with 1 inch (25 mm) tubular rescue quality webbing. Secure one end of the webbing around the posts on either side of the door. Monitor each end of the webbing.

Step 8: Operate the jack to push the door down and off the latching mechanism.

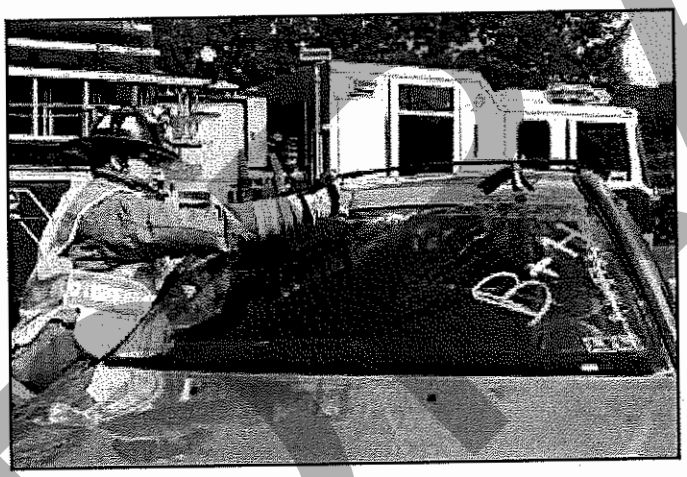
NOTE: Look for opportunities to free the pin or latching mechanism during this operation.

WARNING: Rescuers must ensure that the vehicle is properly stabilized and the scene is safe.

CAUTION: Rescuers must take necessary precautions to protect themselves and victims from hazards including, but not limited to, glass fragments and dust, jagged metal, SRS gas cylinders, undeployed airbags, and fire hazards.

Step 1: Two rescuers position on opposite sides of the vehicle.

Step 2: Make a vertical cut on each side of the glass.

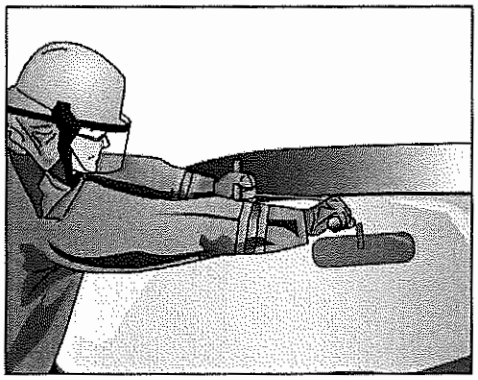


Step 3: Cut the glass at the roof line to connect the side cuts.
Step 4: Rescuers grasp the glass on each side near the roof line cut.
Step 5: Cut bottom side of glass to connect each vertical side cut.

Step 6: Remove the glass and position it away from the rescue scene.

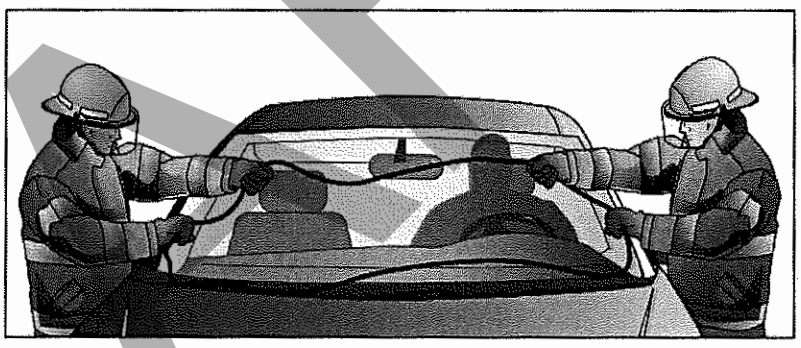
WARNING: Rescuers must ensure that the vehicle is properly stabilized and the scene is safe.

CAUTION: Rescuers must take necessary precautions to protect themselves and victims from hazards including, but not limited to, glass fragments and dust, jagged metal, SRS gas cylinders, undeployed airbags, and fire hazards.

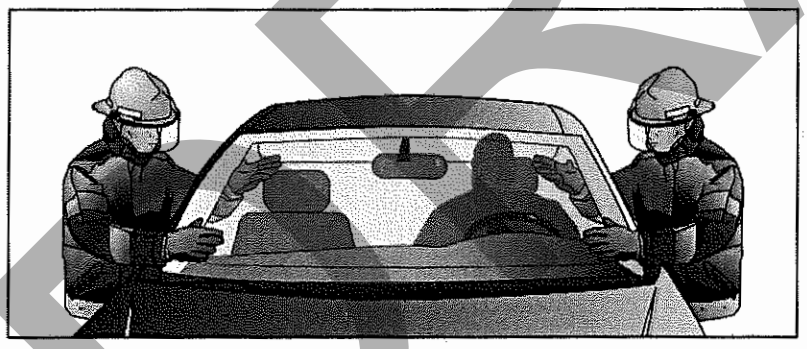


Step 1: Place the blade of a commercial windshield removal tool under the windshield seal.

Step 2: Hold and stabilize tool with one hand. Place the other hand on the attached cable and handle and begin to pull, ensuring that the blade of the tool remains against the windshield and under the seal at all times. Continue until the entire seal has been cut.

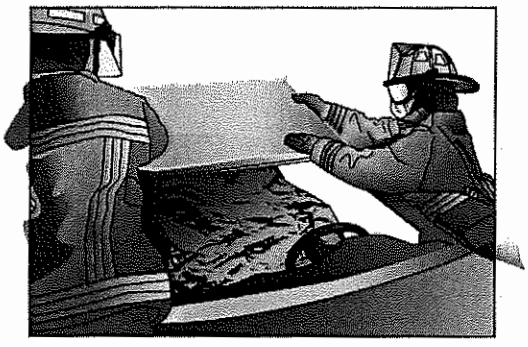


Step 3: Remove the outer portion of the seal from the windshield.



Step 4: Push the windshield outward from the interior of the vehicle.

NOTE: An alternative removal option is to place duct tape handles or suction cups onto the outer portion of the windshield and pull to remove.



Step 5: Position the windshield away from the rescue scene.

National Standardized
Surface Mine Rescue
Contest Rules

Firefighting Rules

MSHA Published Date

Table of Contents

Novice Section

Firefighting Rules Committee Membership

A special thanks to the Firefighting Rules Committee membership for their valuable assistance in preparing this chapter of the Rule Manual. This Committee is comprised of representatives from the following organizations:

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Joshua Caldwell, West Virginia University

Ryan Fox, Campbell County Fire Department

Clancy Harman, Elko County Fire Protection District (Committee Lead)

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General Rules

Firefighting exercise and rules were designed as a training tool for rescue teams. They were developed for contest purposes only. Discretion should be used in actual mine emergency situations.

Each rescue team must consist of six persons who are employees of the mining companies or persons who are designated or contracted by mining companies and trained to perform rescue activities.

All equipment used during the fire exercise must be up to date according to manufactures guidelines. All equipment must be inspected by the team to assure no defects are detected by the proper manufacture guidelines.

Team will have 45 minutes to complete the exercise once the clock has been started. Any equipment found not to be in safe working order will be removed from use by the judges.

Each team must be under guard, in a designated location, before the start of the Contest. Teams must remain continuously under guard until time to work the problem. Teams that have competed will not be permitted to return to the isolation area or communicate with any teams awaiting their turn to compete. This will include smart phones, smart watches, pagers, or any other electronic device capable of sending or receiving information.

Novice Teams (if requested are team that is within the first 2 years of competing) will be judged on:

- Written Examination as outlined on page 3
- Water Supply as outlined on page 7
- Hose Standard 4.5.2 as outlined on page 16.

If **Random Skills** as outlined on page 8 are included in a Regional and/or National Contest Novice Teams would participate in:

- Forcible Entry
- Ground Ladders
- Vehicle Fire*
- Search and Rescue
- Horizontal Ventilation

*Only if Novice Teams have approved Bunker Gear

Teams will not be permitted to furnish or make placards indicating materials or equipment and then simulate their use.

Written Examination

A 15-question written exam will be given to all six team members. Each wrong answer will be a 1-point deduction. Questions will be taken from "Essentials of Fire Fighting, 7th Ed." International Fire Service Training Association chapters 1-15.

1. During isolation, contest officials will administer a written examination to the team members.

2. Answers will be multiple choice with only three choices. "None of the above" will not be used as one of the choices. The answers will be verbatim from the text of the chapters referenced above and will not be intentionally misspelled.
3. A maximum of 20 minutes will be allowed for the team member to take the test.

4. No wireless communication or electronic device, including Apple watches or similar devices, will be permitted in the testing area.

5. There will be no discussion during the time that written examinations are being taken.

Minimum Equipment Supplied by Teams
Minimum PPE requirements for team members: NFPA 1971 Rated

- Fire Helmet
- Nomex Hood
- Fire Protective Pants
- Fire Protective Coat w/ Collar
- Fire Protective Gloves
- Fire Protective Boots w/ Steel Toe
- Open circuit breathing apparatus with a minimum 30-minute capacity x 4

NOVICE TEAMS will be required to supply the following Equipment:

- Hard Hat w/ Shield or SCBA Mask (Not Attached to SCBA)
- Gloves
- Steel Toe Boots

Firefighting Skills:
The ultimate goal of the firefighting portion is to better prepare first responders on mine sites. The firefighting scenarios are designed to include tasks commonly required for fire suppression activities. For contest purposes, the firefighting portion will not include interior fire operations with the understanding that not all mine sites meet the minimum training and equipment requirements for interior live burn scenarios. The below scenarios are based on NFPA 1001 job performance requirements that may be completed as a team or individuals at the discretion of the contest designer.

Mandatory Skills:

- Donning PPE
- Donning SCBA and Emergency Procedures
- Water Supply

Random Skills (Can use any or all skills):

- Forcible Entry
- Ground Ladders
- Vehicle Fire
- Search and Rescue
- Horizontal Ventilation
- Fire Hose*

*Novice Teams will be REQUIRED to complete the Fire Hose Skills

Mandatory Skills:

Donning Personal Protective Clothing (NOT REQUIRED BY NOVICE TEAMS)

Each team member shall be able to properly don personal protective clothing in one minute.

Equipment Required:

- Bunker Pants
- Coat
- Hood
- Gloves
- Helmet

Given PPE each member shall demonstrate the ability to:

1. Don pants and boots properly including suspenders in place _____ 1 discount
2. Don hood _____ 1 discount
3. Don coat-including storm flap closed and collar up and secured _____ 1 discount
4. Don helmet (eye protection not required) _____ 1 discount
5. Don gloves _____ 1 discount

Donning SCBA and Emergency Procedures: (NOT REQUIRED BY NOVICE TEAMS)

Use SCBA during emergency operations, given SCBA and other personal protective equipment, so that the CBA is correctly donned and activated within one minute, the SCA is correctly worn, controlled breathing techniques are used, emergency procedures are enacted in the SCBA fails, all low-air warnings are recognized, respiration protection is not intentionally compromised, and hazardous areas are exited prior to air depletion. Each team member shall demonstrate the ability to don SCBA with 1 minute, control breathing, replace SCA air cylinders, use SCBA to exit through restricted passages, initiate and complete emergency procedure in the event of SCBA failure or air depletion, and complete donning procedures.

Equipment Required:

- SCBA
- Prop for Restricted Passage
- Full PPE

Given a non-fire ground environment and with restricted passages, each member shall demonstrate the ability to:

1. Correctly don SCBA including checking amount of air in cylinder and operation of low air alarm and PASS device _____ 1 discount
2. Correctly don face piece including checking seal and operating of exhalation _____ 1 discount
3. Have all personal protective clothing correctly in place _____ 1 discount
4. Correctly accomplished all the above in 1 minute _____ 1 discount

Demonstrate Conservation of Air:

1. Controlled breathing _____ 1 discount

SCBA Failure:

1. Recognized air delivery system failure _____ 1 discount
2. Initiates action to exit hazardous environment _____ 1 discount

Cylinder Replacement - Non-Hazardous Environment:

1. Properly demonstrates ability to change out empty cylinder with full cylinder _____ 1 discount

Water Supply:

Connect a fire department pumper to a water supply as a member of the team, given supply or intake hose, hose, hose tolls, and a fire hydrant or static water source, so that connections are tight, and water flow I unobstructed.

Each member while operating as a member of a team, shall demonstrate the ability to hand lay a supply hose, connect and place hared suction hose for drafting operations, deploy portable water tank as well as the equipment necessary to transfer water between an draft from them, make hydrant-to-pumper hose connections for forward and revere lays, connect supply hose to a hydrant, and fully open and close the hydrant.

Equipment Required:

- PPE (as outlined on page 4)
- Appropriate equipment for hydrant or static water supply

Given a static water source or fire hydrant, the team member shall demonstrate the ability to:

Fire hydrant Connection Via Forward and Reverse Lay:

1. Connect supply hose to hydrant _____ 1 discount
2. Connect supply hose to pumper intake _____ 1 discount
3. Fully open hydrant _____ 1 discount
4. Fully close the hydrant _____ 1 discount

OR

Static Water Source:

1. Deploy portable water tank _____ 1 discount
2. Check gaskets on the shared suction hose for dirt, gravel or defects _____ 1 discount
3. Connect strainer to hose _____ 1 discount
4. Connect hard suction hose to pumper _____ 1 discount
5. Lower hose and strainer into static water source _____ 1 discount

Random Skills (Can use any or all skills)
:

Forcible Entry

Force entry into a door OR window OR wall, given full PPE tools, and an assignment, so that the tools are used as designed, the barrier is removed, and the opening is in a safe condition and ready for entry.

The team member shall demonstrate the ability to transport and operate hand and power tools and to force entry through doors, windows or walls using assorted methods and tools.

Equipment Required

- PPE (as outlined on page 4)
- Appropriate hand or power tools, and forcible entry props

Given a door, window or wall prop the team member shall demonstrate the ability to:

Door

1. Select the appropriate tools(s)_____ 1 discount
2. Safely carry the selected tool(s) to the door _____ 1 discount
3. Correctly size up the door _____ 1 discount

Wall

1. Select the appropriate tool(s) _____ 1 discount
2. Safely carry the selected tool(s) to the wall _____ 1 discount
3. Sound for studs (if applicable) _____ 1 discount
4. Choose the appropriate technique and demonstrate or simulate forced entry _____ 1 discount

Windows

1. Select the appropriate tool(s) _____ 1 discount
2. Safely carry the selected tool(s) to the window _____ 1 discount
3. Correctly size up the window _____ 1 discount
4. Choose the appropriate technique and demonstrate or simulate forced entry _____ 1 discount
5. Clear opening of obstacles (i.e. class, curtains, blinds (if applicable)) _____ 1 discount

Ground Ladders

Set up, mount, ascent, dismount ground ladders, given single and extension ladders as assignment, and team members if needed, so that hazards are assessed, the ladder is stable, the angel is correct for climbing, extension ladders are extended to the necessary height with the fly locked, the top is placed against a reliable structural component, and the assignment is accomplished.

The team member shall be able to demonstrate the ability to carry ladders, raise ladders, extend ladders and lock flies, determine that a wall and rood will support the ladder, judge extension ladder height requirements, and place the ladder to avoid obvious hazards, mounts, ascent, descend and dismount the ladder.

Equipment Required:

- Straight Ladder
- Various sized of extension ladders
- PPE (as outlined on page 4)

Given a simulated fire scenario and a team, the team member shall demonstrate the ability to:

1. Select the proper length ladder for the designated task _____ 1 discount
2. Lift/carry the ladder from the designated area or apparatus _____ 1 discount
3. Visually check work area for hazard and state if area is safe or if hazards exist _____ 1 discount
4. Raise the ladder upright _____ 1 discount
5. Extend and secure fly section (if using an extension ladder) _____ 1 discount
6. Lower ladder against stable wall or surface _____ 1 discount
7. Adjust for proper climbing angel _____ 1 discount
8. Position ladder correctly for task given _____ 1 discount
9. Mounts, Ascends Ladder Properly _____ 1 discount

SELECT ONE TASK
*Window Ventilation: ladder tip placed about even with the top of the window and to the windward side
*Rescue from window or entry through window: Placed slightly below sill or 2-3 rungs into window if opening is wide enough to allow room beside ladder for rescue or entry
*Work with hose with no entry: Tip placed on wall above window opening if no flame
*Access roof: Place against roof with 3-5 rungs extending above roof

10. Dismounts and Descents Ladder Properly _____ 1 discount
11. Lower ladder to ground (reversing raising procedures) _____ 1 discount
12. Lift/carry ladder to designated site or apparatus _____ 1 discount

Vehicle/Equipment Fire

Attack a passenger vehicle fire operating as a member of a team, given full PPE, and attack line, and hand tools, so that hazards are avoided, leaking flammable fluids are identified and controlled, protecting from flash fires as maintained, all vehicle compartments are overhauled, and the fire is extinguished.

The team member the team member, while operating as a member of a team, shall demonstrate the ability to identify automobile flip fuel type; Access and control fuel leak; Open, close, and adjust the flow and pattern on nozzle; Apply water for maximum effectiveness while maintaining flash Fire Protection, avoid one dash 1-1/2 inch or larger diameter attack lines semicolon and expose hidden fires by opening all automobile compartments.

Equipment Required

- Hose Line
- Fire Apparatus/Pumping Device
- Full PPE
- SCBA
- Vehicle Prop
- Hand Tools
- Dedicated Safety Line Personnel

Given a simulated fire scenario and a team the team member shall demonstrate the ability to:

1. Properly wear full protective clothing SCBA _____ 1 discount
2. Identify possible fuel types and methods for controlling fuel leaks _____ 1 discount
3. Attach from upwind and uphill _____ 1 discount

4. Select at least 1 1/2-inch hose line, bleed line and adjust nozzle _____ 1 discount
5. Extinguish fire around and under the vehicle, attack the remaining the vehicle _____ 1 discount
6. Performed overhaul on vehicle _____ 1 discount
7. Described steps to control any and all fuel leaks _____ 1 discount

Novice Team Requirements

Fire Hoses (REQUIRED BY NOVICE TEAMS)

Minimum Equipment Supplied by Team:

(Minimum PPE requirements for team members: NFPA 1971 Rated)

- Hard Hat w/ Shield or SCBA Mask (Not Attached to SCBA)
- Gloves
- Steel Toe Boots

Firefighting Skills

The ultimate goal of the firefighting portion is to better prepare first responders on mine sites. The firefighting scenarios are designed to include tasks commonly required for fire suppression activities. For contest purposes, the firefighting portion may include interior or exterior fire firefighting skills only under simulated conditions. At no time will team fight a live fire without the proper protective equipment.

Every contest will be required to include the three mandatory skills listed below. Contest designers may choose to include random skills individually or compiled into a scenario based upon the facility and equipment available for the contest.

Mandatory Skills

- Fire Hose Management
- Fire Fighting Procedures
- Water Supply

Fire Hose Exercise:

The goals of this exercise will be to enable the team to work together to control a pressurized hose, and to direct water to a desired location. SCBA's will not be used during this exercise.

The exercise should be conducted on a concrete pad which is divided into two parts by a line in the middle. The first half of the pad should be marked with ordinary traffic cones in a Z-type pattern. The second half of the pad is open (no cones) with a set of "goal posts" at the end of the pad. The six person team will be divided into two groups of three.

The first three-person team will move a hard plastic case or box with water pressure around the cones through the Z pattern until they reach the mid- line of the pad; then they will move the box with water pressure down the rest of the pad through the goal posts.

The team cannot step on the concrete pad while maneuvering the box through the Z pattern; they must manage the hose from the sides of the pad. Once the box breaks the plane of the mid-line, instruct all three of the team members that they can then step on the concrete pad; remain behind the mid line; and continue moving the box with hose pressure, until it breaks the plane between the "goal posts."

The second three-person team will move the box back in the opposite direction through the Z pattern and then through the goal posts located at the original starting point.

Fire Hose Hook-Up Procedures: Team 1

1. Flush the team fire hydrant (Y connectors) before connecting

any fire hose.

2. Roll out fire hose joints (hand-tighten).

3. Flush the fire hose before attaching the nozzle.

4. Install the nozzle (hand-tighten).

Fire Hose Disassembly Procedures: Team 2

1. Turn off hydrant (Y connectors)

2. Open nozzle to relieve pressure

3. Disconnect nozzle

4. Disconnect hose joints

5. Roll up fire hose (tight, street roll)

6. Properly place equipment to the original location

Hose Exercise Discounts

1. Failure to flush hydrant (Y connector) __1 Discount

2. Failure to hand tighten connections__1 Discount Per Connection

3. Failure to flush fire house before installing nozzle__1 Discount

4. Failure to install nozzle hand tight__1 Discount

5. Stepping onto concrete pad before reaching mid-line__1 Discount

6. Running on pad__5 Discounts

7. Failure to close hydrant (Y Connector) after second team completes exercise__1 Discount

8. Failure to open nozzle to relieve pressure on hose__ 5 Discounts

9. Failure to complete a tight street roll on fire hose__1 Discount Per Roll

10. Failure to return all equipment to original location__1 Discount

Fire Fighting Exercise

Contest director can only use a simulated fire and/ or simulated smoke in which rules remain the same for all scenarios. Team safety is the number one priority, and any unsafe acts could result in team disqualification.

Priorities During an Emergency

1. Ensure the safety of all Mine Rescue Team members at all times in all situations.
2. Ensure the safety and safe evacuation of known Casualties (victim / injured persons).
3. Fight and eliminate all known fire and combustion related hazards in the scenario.

Casualties (Victims / Injured Persons)

There will be no requirement to perform First Aid or casualty care during the Firefighting Scenario.

If at any time the Simulation Lead Judge feels that a team member's safety may be compromised, the action will be stopped, and re-direct negative (penalty) points will apply.

Proper firefighting techniques must be used during the scenarios established by the chief judge.

Fire Fighting Time Limits

The firefighting simulation will have a time limit determined by the Chief Judge and Firefighting Lead Simulation Judge. Teams will be advised of the time limit prior to simulation.

Event will be timed from the initial report of fire observation to the final extinguishment task (if multiple tasks take place).

The pre-determined time limit will be established to allow teams more than sufficient time to complete the entire problem or task, should they fully understand their objectives and work towards achieving them. It is important to note, the time limit is not to stop teams from completing the task. The time limit is reserved as a last resort by the Simulation Lead Judge to remove a competing team from the field where they have clearly demonstrated a lack of progress towards the task specific goals. This must be done to ensure the continuation of the competition for remaining teams.

Fire Hose Hook Up Procedures

· Flush each hydrant that is going to be used for firefighting by opening the valve provided on it and allowing water to flow freely. Teams will be working off gaited wyes for hydrants, from any water source designated by the contest director, and a team member will be required to remain at the hydrant until all hoses necessary are established for safety and control.

1. Failure to flush hydrant _____1 Discount

· Flushing the hydrant reveals that you have water to that point and removes debris and scaling so it doesn't find its way to the equipment being used at the end of the hose lay and become an obstruction.

· There will be no need for pressure reduction at the hydrant, so no pressure reducing devices will going to be required to be installed.

· Fire hose will be installed directly to the hydrants provided and will be hand tight without use of spanner wrenches.

2. Failure to hand tighten hose to hydrant ____1 Discount

3. Failure to hand tighten each hose connection____1 Discount

Hose Lay Establishment:

·After the appropriate length of hose lay is established, the entire lay may be flushed at this point. This is best and most efficient. Flushing individual joints as you go is redundant and time consuming.

4. Failure to flush complete hose lay ____1 discount

· Flushing a hose lay is another measure to remove any and all debris and potential obstructions before any equipment is installed at the end of it.

· A team member must secure the open end of the hose during the flushing process to eliminate hazards associated with hose whip.

5. Failure to secure open end of hose during flushing process____ 5 Discounts

· A proper length of hose lay is made up of one to multiple joints of fire hose, extending far enough to be effective in completing the firefighting objective.

6. Failure to have the appropriate amount of hose to extinguish fire____ 5 Discounts

· It takes roughly 3 to 5 seconds to flush approximately 100 feet of 1 ½" fire hose at 100 psi and 100 GPM. These pressures and flows will be maintained to that capacity during the components.

· 50-foot joints, or sections, of fire hose will be provided.

· When establishing a hose lay, couplings must be hand tightened without the use of spanner wrenches. These wrenches are not necessary, and fittings can be over tightened. This is a problem when a nozzle, or other piece of equipment, becomes inoperable due to clogging and one has to break the fittings loose to relieve static pressure to clear the equipment. This is also very dangerous. Never overtighten fittings!

Fire Hose and Nozzle Management

· Two fire hose lays will be used for each component.

· Each 3-man team will follow the “Fire Hose Hook up and Hose Lay Establishment” procedures described on pages 8-10 of the firefighting rules.

· Teams will split up equally on two separate hose lays after nozzles are installed and flushed.

· The fire hose teams will maintain an arm’s length spacing at all times, and keep the hose level and straight. This will permit the bracing of one another with a free hand if necessary, while maintaining control of the hose with the other hand. Keeping the hose level and straight will equally distribute the force from “push back” due to pressure and closed stream patterns. The more closed the stream pattern, themore “push back” a hose team experiences.

of “pulling” during the advancing of a fire hose, which is the duty of each back-up person. The nozzle person dictates the terms of advancement and may verbally prompt the group in preparation by simply calling out, “ready” then “advance”.

7. Failure of the nozzle person to verbally advance the team____ 2 Discounts

· The nozzle person shall dictate stream patterns and flows. This is accomplished by regulating

flow with the “bail,” or shut-off handle, and manipulating the adjustable end of the nozzle.

· Always open the flow to the nozzle slowly and deliberately. This is a safety measure for proper control and fire fighter safety, and to protect the equipment from the damage potentially caused by a sudden rush of water creating a fluid hammer effect.

8. Failure of nozzle person to properly to open and close the nozzle bail to prevent damage____ 2 Discounts

· Dual fire hose attacks in the simulated burn area, and on simulated live fire in general, requires the nozzle persons to be even and in the same stream patterns.

9. Failure of team to be even during dual fire hose attacks____ 1 Discount

Loss of Water on Fire Hose during Dual Attack on Simulated Fire

· All persons on each fire hose will be required to position themselves on the inside of the hoses. This is a fire fighter safety technique that permits the “closing of ranks,” or falling together if the need arises for protection if one of the fire hoses loses water flow and or pressure. It also allows two hoses to function independently by team members “shouldering in” in more confined walkways during nozzle attacks.

10.Failure of each team to be on the inside of the hose____ 1 Discounts Per Member

· If one fire hose were to lose water flow and/or pressure, the trailing person on that particular

hose is to immediately fall back, looking for kinks and contributing causes. They are closest in proximity to the source.

11. Failure of the trailing team member of the hose that lost water flow to retreat- back and find cause____ 5 Discounts

· Immediately, the fire hose that still has pressure and flow shall adjust the nozzle to the “full-fog,” or protection pattern. Immediately, members on the hose that has lost water pressure and flow will maintain control of their inactive fire hose. The nozzle person on that hose must shut off the nozzle in case flow is resumed so as not to lose control, then fall in directly behind each person on the active fire hose.

12. Failure of team with water pressure to adjust to fog pattern until second team restores water pressure_ 5 Discounts

13. Failure of team with loss of water pressure to shut down nozzle and maintain control of hose____5 Discounts

14. Failure of team with loss of water to fall in behind team on active fire hose_ 5 Discounts

· After this is accomplished, the entire group will begin retreat to a safe distance.

15. Failure of entire group to retreat to a safe distance until water is established on both hoses____ 5 Discounts

· This is to protect the group, especially if both fire hoses are operating from the same source and it is a supply issue. Generally, sloppy hose lays provide the potential for “kinks” to occur as fire hose is being advanced.

· It is best to keep all of the “slack”, or excess hose neat and orderly. This can be accomplished by creating even loop lengths and keeping all loops “open.” Therefore

when the hose is advanced and it comes to that point, the hose is not pulling across itself and closing the loop to the point that it may not flop over. Often times with lower pressure and flows, hoses pulling across themselves will “kink,” or pinch themselves off, and we either lose all flow, or lessen the flow substantially

· If all is well and water flow with adequate pressure is re-established, then the teams may carry on and proceed with their attack of the simulated fire.

16. Failure to prevent hose from becoming kinked____1 Discount

· Once the exercise has been completed and equipment has been returned to its original location the time can be stopped.

Sample Exercise Utilizing 3 Random Skills

Search Exercise

This Scenario includes the required mandatory skills and 3 of the Random skills

(PPE, SCBA, Water Supply, Forcible Entry, Search and Rescue, Horizontal Ventilation)

This exercise is designed to test the ability for the group to work as a team while rescuing a victim from a simulated structure fire (no live fire). The team will be called to a report of smoke coming out the second floor windows of a building. Upon arrival, the team will find smoke coming from the front of the building with nobody around and a locked front door.

The team will consist of four entry members (those wearing SCBAs) and two exterior who act as command and support functions. Tasks may be completed as a group or individually given that a minimum of two team members are working together in a simulated IDLH environment. For example, two entry team members may be advancing the hose line while the other two are completing the search functions.

For the purpose of the contest, a simulated backup team (RIT/RIC) is on-scene to meet entry requirements but is not available to assist the team in any way. There are no simulated “maydays” for this drill. Any “mayday” called will stop the scenario and be treated as a real-life emergency. Water based smoke solution (no pyrotechnics or “smoke bombs) will be used to limit visibility inside the structure to allow for a simulated IDLH environment.

Stage 1 (PPE, SCBA)

Upon the signal from the judge, time will start and all six team members will don full bunker gear. Four team members who will be making entry will also don SCBAs with the remaining two moving on to Stage 2.

Stage 2 (Water Supply)

While the four team members who are making entry are donning SCBAs the remaining two will establish a water supply from the hydrant to the fire engine.

Stage 3 (Forcible Entry)

After donning SCBAs, the four entry team members will grab hand tools and proceed to the front door (forcible entry training prop) and find it to be locked. The team will need to force the door in order to make entry.

Stage 4 (Water Supply Continued)

The team will be required to pull an attack hose from the engine to the front door in order to make entry. The hose will be required to be properly flaked out to minimize kinks that inhibit water flow. Once at the front door, the team member at the nozzle will give the signal for water and bleed air from the hose. Upon confirmation of good water flow, the team will make entry to the building and advance the hose to the simulated seat of the fire.

Stage 5 (Search and Rescue)

Team members will make entry into the building with appropriate tools for conducting a search of the building in low visibility. Upon locating a victim, the team will be required to remove the victim from the building via the shortest route (which may not be the same route travelled in).

Stage 6 (Horizontal Ventilation)

Upon confirmation of fire out and search complete, the team will be required to ventilate the building by utilizing a positive pressure fan at the front door and opening a door or window at the opposite side of the building.

Once all team members and victims are outside of the building and all stages complete, the team captain will call time to the judge.

END OF SCENARIO

General Skill Requirements:

STANDARD: 4.1.2 **NFPA 1001, 2019 Edition** **General Skill Requirements:**	Don personal protective clothing within one (1) minute.
PERFORMANCE OUTCOME:	The candidate shall be able to properly don personal protective clothing in one minute. **Safety: A safety violation is grounds for automatic failure. All proctors present shall review the safety violation.**
EQUIPMENT REQUIRED: Bunker pants, coat, hood, gloves, and helmet.	
CONDITIONS: Given personal protective clothing, the candidate shall demonstrate the ability to:	

No.	Task Steps	✓
	DONNING:	
1.	Don pants and boots properly-including suspenders in place.	
2.	Don hood.	
3.	Don coat-including storm flap closed and collar up and secured.	
4.	Don helmet. **(eye protection not required)**	
5.	Don gloves.	
6.	Complete above correctly within one minute.	

Fire Ground Operation:

STANDARD: 4.3.15 NFPA 1001, 2019 Edition Fire Ground Operations	TASK: Connect a fire department pumper to a water supply as a member of a team, given supply or intake hose, hose tools, and a fire hydrant or static water source, so that connections are tight and water flow is unobstructed.
PERFORMANCE OUTCOME:	The candidate, while operating as a member of a team, shall demonstrate the ability to hand lay a supply hose, connect and place hard suction hose for drafting operations, deploy portable water tanks as well as the equipment necessary to transfer water between and draft from them, make hydrant-to-pumper hose connections for forward and reverse lays, connect supply hose to a hydrant, and fully open and close the hydrant. **Safety: A safety violation is grounds for automatic failure. All proctors present shall review the safety violation.**
Equipment Required: Full PPE, appropriate equipment for hydrant or static water supply.	
Conditions: Given a static water source or fire hydrant, the candidate shall demonstrate the ability to:	

No.	Task Steps	✓
	CHECK: Fire Hydrant ☐ or Static Water Source ☐	
	FIRE HYDRANT CONNECTION VIA FORWARD & REVERSE LAY	
1.	Connect supply hose to hydrant.	
2.	Connect supply hose to pumper intake.	
3.	Fully open hydrant.	
4.	Fully close the hydrant.	
	STATIC WATER SOURCE	
1.	Deploy portable water tank.	
2.	Check gaskets on the hard suction hose for dirt, gravel or defects.	
3.	Connect strainer to hose.	
4.	Connect hard suction hose to pumper.	
5.	Lower hose and strainer into static water source.	

STANDARD: 4.3.1; 4.3.9 **NFPA 1001, 2019 Edition** **Fire Ground Operations**	**Task:** Use SCBA during emergency operations, given SCBA and other personal protective equipment, so that the SCBA is correctly donned and activated within 1 minute, the SCBA is correctly worn, controlled breathing techniques are used, emergency procedures are enacted if the SCBA fails, all low-air warnings are recognized, respiratory protection is not intentionally compromised, and hazardous areas are exited prior to air depletion.
PERFORMANCE OUTCOME:	The candidate shall demonstrate the ability to Don SCBA within 1-minute, control breathing, replace SCBA air cylinders, use SCBA to exit through restricted passages, initiate and complete emergency procedures in the event of SCBA failure or air depletion, and complete donning procedures. **Safety: A safety violation is grounds for automatic failure. All proctors present shall review the safety violation.**
EQUIPMENT REQUIRED: SCBA, prop for restricted passage, and full personal protective equipment.	
CONDITIONS: Given a non-fire ground environment and with restricted passages, the candidate shall demonstrate the ability to:	

No.	Task Steps	✓
	Don SCBA:	
1.	Correctly don SCBA including checking amount of air in cylinder and operation of low air alarm and PASS device.	
2.	Correctly don face piece including checking seal and operating of exhalation.	
3.	Have all personal protective clothing correctly in place.	
4.	Correctly accomplished all of the above in one (1) minute.	
	DEMONSTRATE CONSERVATION OF AIR:	
5.	**Controlled Breathing: (As taught / Instructed by AHJ).**	
	SCBA FAILURE:	
6.	***Air Delivery System*:**	
	Recognizes Air Delivery System Failure	
	Initiates actions to exit hazardous environment	
	Activates PASS Device	
	CYLINDER REPLACEMENT - NON HAZARDOUS ENVIRONMENT:	
7.	Properly demonstrates ability to change out empty cylinder with full cylinder	
	RESTRICTED PASSAGE:	
8.	Demonstrate the ability to maneuver through a restricted passage while remaining on air.	

STANDARD: 4.3.4 NFPA 1001, 2019 Edition Fire Ground Operations	Task: Force entry into a structure, given full PPE, tools, and an assignment, so that the tools are used as designed, the barrier is removed, and the opening is in a safe condition and ready for entry.
PERFORMANCE OUTCOME:	The candidate shall demonstrate the ability to transport and operate hand and power tools and to force entry through doors, windows, and walls using assorted methods and tools. **Safety: A safety violation is grounds for automatic failure. All proctors present shall review the safety violation.**
EQUIPMENT REQUIRED: PPE, appropriate hand or power tools, and forcible entry props (if available).	
CONDITIONS: Given a Door, Window and Wall prop the candidate shall demonstrate the ability to:	

No.	Task Steps (ALL REQUIRED)	✓
	DOOR	
1.	Select the appropriate tool(s).	
2.	Safely carry the selected tool(s) to the door.	
3.	Correctly size up the door.	
4.	Choose the appropriate technique and demonstrate or simulate forced entry.	
	WALL	
1.	Select the appropriate tool(s).	
2.	Safely carry the selected tool(s) to the wall.	
3.	Sound for studs (if applicable).	
4.	Choose the appropriate technique and demonstrate or simulate forced entry.	
	WINDOW	
1.	Select the appropriate tool(s).	
2.	Safely carry the selected tool(s) to the window.	
3.	Correctly size up the window.	
4.	Choose the appropriate technique and demonstrate or simulate forced entry.	
5.	Clear opening of obstacles (i.e. Glass, Curtains, Blinds (if applicable).	

STANDARD: 4.3.6 **NFPA 1001, 2019 Edition** **Fire Ground Operations**	**Task:** Set up, mount, ascend, descend, dismount ground ladders, given single and extension ladders, an assignment, and team members if needed, so that hazards are assessed, the ladder is stable, the angle is correct for climbing, extension ladders are extended to the necessary height with the fly locked, the top is placed against a reliable structural component, and the assignment is accomplished.
PERFORMANCE OUTCOME:	The candidate shall be able to demonstrate the ability to carry ladders, raise ladders, extend ladders and lock flies, determine that a wall and roof will support the ladder, judge extension ladder height requirements, and place the ladder to avoid obvious hazards, mount, ascend, desend and dismount the ladder. **Safety: A safety violation is grounds for automatic failure. All proctors present shall review the safety violation.**
EQUIPMENT REQUIRED: Straight ladder, various sizes of extension ladders, and full personal protective clothing (SCBA determined by proctor).	
CONDITIONS: Given a simulated fire scenario and a team, the candidate shall demonstrate the ability to:	

No.	Task Steps	✓
1.	Select the proper length ladder for the designated task.	
2.	Lift/carry the ladder from the designated area or apparatus.	
3.	Visually check work area for hazards and state if area is safe or if hazards exist.	
4.	Raise the ladder upright.	
5.	Extend and secure fly section (if using an extension ladder).	
6.	Lower ladder against stable wall or surface.	
7.	Adjust for proper climbing angle.	
8.	Position ladder correctly for task given.	
9.	Mounts, Ascends Ladder Properly.	
	SELECT ONE TASK:	
	Window Ventilation: Ladder tip placed about even with the top of the window and to the windward side.	
	Rescue from window or entry through window: Placed slightly below sill or 2-3 rungs into window if opening is wide enough to allow room beside ladder for rescue or entry.	
	Work with hose with no entry: Tip placed on wall above window opening if no flames extending from window or at sill if flames out window.	
	Access roof: Placed against roof with 3-5 rungs extending above roof.	
10.	Dismounts and Descends Ladder Properly.	
11.	Lower ladder to ground (reversing raising procedures).	
12.	Lift/carry ladder to designated site or apparatus.	

STANDARD: 4.3.7 **NFPA 1001, 2019 Edition** **Fire Ground Operations**	**TASK:** Attack a passenger vehicle fire operating as a member of a team, given full PPE, an attack line, and hand tools, so that hazards are avoided, leaking flammable liquids are identified and controlled, protection from flash fires is maintained, all vehicle compartments are overhauled, and the fire is extinguished.

PERFORMANCE OUTCOME: The candidate, while operating as a member of a team, shall demonstrate the ability to identify automobile fuel type; assess and control fuel leaks; open, close, and adjust the flow and pattern on nozzles; apply water for maximum effectiveness while maintaining flash fire protection; advance 1-1/2 in. or larger diameter attack lines; and expose hidden fires by opening all automobile compartments.

Safety: A safety violation is grounds for automatic failure. All proctors present shall review the safety violation.

EQUIPMENT REQUIRED: Hose lines, fire apparatus, personal protective equipment, SCBA, Auto, Truck, Van prop, hand tools, and dedicated safety line personnel.

CONDITIONS: Given a simulated fire scenario and a team, the candidate shall demonstrate the ability to:

No.	Task Steps	✓
1.	Properly wear full protective clothing and SCBA.	
2.	Identify possible fuel types and methods for controlling fuel leaks.	
3.	Attack from upwind and uphill (verbalize conditions were considered if not applicable).	
4.	Select at least one 1 ½ inch hose line, bleed line, and adjust nozzle.	
5.	Extinguish fire around and under the vehicle, attack the remaining fire in the vehicle.	
6.	Perform overhaul on vehicle.	
7.	Describe steps to control any and all fuel leaks.	

STANDARD: 4.5.2 **NFPA 1001, 2019 Edition** **Preparedness, and Maintenance**	**Task:** Clean, inspect, and return fire hose to service, given washing equipment, water, detergent, tools, and replacement gaskets, so that damage is noted and corrected, the hose is clean, and the equipment is placed in a ready state for service.
PERFORMANCE OUTCOME:	The candidate shall demonstrate the ability to clean different types of hose, operate hose washing and drying equipment (if available), mark defective hose, and replace coupling gaskets, roll hose, and reload hose. **Safety: A safety violation is grounds for automatic failure. All proctors present shall review the safety violation.**
Equipment Required: Fire apparatus, scrub brush, hose, cleaning supplies, replacement gaskets, hose washer and dryer (if available), log book or tags for reporting repair needs, and personal protective clothing (proctor to determine what PPE is to be worn).	
CONDITIONS: Given Fire Department hose and apparatus, the candidate shall demonstrate the ability to:	

No.	Task Steps	✓
	INSPECT / CLEAN HOSE	
1.	Inspect / Clean hose.	
2.	Inspect / Clean couplings according to department guidelines.	
3.	Dry hose.	
4.	Place in ready state and report any deficiencies.	
	RETURNING HOSE TO SERVICE	
5.	**Roll hose as selected by proctor (Check one):** Straight ☐ Donut ☐ Twin Donut ☐ Self-Locking Twin Donut ☐	
6.	**Reload hose on apparatus using a hose load specific to apparatus or department:**	
	Pre-connect	
	Supply Line	

Search and Rescue

STANDARD: 4.3.9 **NFPA 1001, 2019 Edition** **Fire Ground Operations**	**TASK:** Conduct a search and rescue in a structure operating as a member of a team, given an assignment, obscured vision conditions, personal protective equipment, a flashlight, forcible entry tools, hose lines, and ladders when necessary, so that ladders are correctly placed when used, all assigned areas are searched, all victims are located and removed, team integrity is maintained, and team member's safety – including respiratory protection – is not compromised.
PERFORMANCE OUTCOME:	The candidate shall demonstrate to the ability to use an SCBA to exit through restricted passages, set up and use different types of ladders for various types of rescue operations, rescue a firefighter with functioning respiratory protection, rescue a firefighter whose respiratory protection is not functioning, rescue a person who has no respiratory protection, and assess areas to determine tenability. **Safety: A safety violation is grounds for automatic failure. All proctors present shall review the safety violation.**
Equipment Required: Full personal protective clothing including SCBA, various size ladders, portable radio, flashlight, hose line, and hand tools.	
Conditions: Given a simulated scenario with obscured visibility and a team member, the candidate shall demonstrate the ability to:	

No.	Task Steps	✓
1.	Size up the problem and select the appropriate tool(s) and equipment.	
2.	Ladders are correctly placed for assignment (if chosen by candidate).	
3.	Establish, maintain, and search in an effective pattern (i.e. left-hand or right-hand).	
4.	Maintain team integrity and safety.	
5.	Use hose line effectively (if chosen by candidate).	
6.	**Find and remove victim (Check victim chosen).** Person without respiratory protection ☐ Firefighter with Non-Functioning SCBA ☐ Firefighter with Functioning SCBA ☐	

One deduct for every step missed, as a team.

Horizontal Ventilation (verbiage for positive pressure fan)

STANDARD: 4.3.11 **NFPA 1001, 2019 Edition** **Fire Ground Operations**	**TASK:** Perform horizontal ventilation on a structure operating as part of a team, given an assignment, PPE, ventilation tools, equipment, and ladders, so that the ventilation openings are free of obstructions, tools are used as designed, ladders are correctly placed, ventilation devices are correctly placed, and the structure is cleared of smoke.
PERFORMANCE OUTCOME:	The candidate shall demonstrate the ability to transport and operate ventilation tools and equipment and ladders, and to use safe procedures for breaking window and door glass and removing obstructions. **Safety: A safety violation is grounds for automatic failure. All proctors present shall review the safety violation.**
Equipment Required: Full PPE with SCBA, hose line, hand tools, pike pole, ladder, positive pressure fan, and/or smoke ejector.	
Conditions: Given a simulated fire and a team, the candidate shall demonstrate the ability to:	

No.	Task Steps	✓
	BREAK WINDOW OR DOOR GLASS	
1.	Properly place ladder (if necessary).	
2.	Choose proper tool for task and carry tool safely.	
3.	Assume proper position and break glass.	
4.	Remove glass and any remaining window obstruction. (i.e. curtains, draperies, blinds, etc.)	
	FORCED VENTILATION (Choose Positive, Negative, or Hydraulic)	
	Positive Pressure Ventilation	
1.	Properly place fan so cone of air covers entry point.	
2.	Ventilation properly performed and structure cleared of smoke.	
	Negative Pressure Ventilation	
1.	Properly place fan in exhaust opening to pull smoke out.	
2.	Ventilation properly performed and structure cleared of smoke.	
	Hydraulic Ventilation	
1.	Cover 85-90% of the ventilation opening.	
2.	Ventilation properly performed and room cleared of smoke.	

One deduct for every step missed, as a team.

National Standardized Surface Mine Rescue Contests Rules

First Aid Rules

MSHA APPOVAL DATE

Table of Contents

First Aid Rules Committee Membership

A special thanks to the First Aid Rules Committee membership for their valuable assistance in preparing this chapter of the Rule Manual. This Committee is comprised of representatives from the following organizations:

Danielle Hemmert, Genesis Alkali LLC

Larry Macy, Freedom Oilfield Services, Inc

Kayla Schipman, ARCH Resources

Marshall Sizemore, Mine Safety and Health Administration

Vernus Sturgill, Mine Safety and Health Administration (Committee Lead)

GENERAL RULES

First Aid rules were designed as a training tool for first aid teams. They were developed for contest purposes only. Discretion should be used in actual mine emergency situations.

1. The Contest Director can establish a reasonable amount of time for each team to complete the problem and all teams will be notified of the established time prior to beginning to work the problem. Any teams working beyond the established time period will be notified by the Judge that they must leave the station.

The First Aid team must furnish the basic first aid supplies needed to complete the problem unless specified by the contest coordinator that the supplies will be available at a specific station.

A. The material list below is a recommended materials list that could be used to treat injuries.
B. Problems should be designed utilizing no more than the minimum material listed below.
C. For contest purposes, all bandaging materials will be considered sterile. For contests purposes only four by four dressings need not be opened before use for treatment.

Materials List

24 Triangular Bandages
6 Adhesive compresses
24 Sterile gauze, (4”x4”) and/or 4” Compresses
6 Roller Bandages
3 Blankets
1 Scissors, EMT Utility
6 Pairs of Examination Gloves
2 Mask/face shields or masks and goggles or safety glasses combination meeting blood borne pathogen requirements
2 Heat Pack - Simulated
4 Cold packs - Simulated
2 Oval Eye Pads
1 Pen and paper set
1 Barrier devices with one-way valve for performing AV/CPR
1 White bag (i.e. plastic garbage bag)
1 Compliment of splints (may be pre-padded but not assembled)
1 Long back board with straps/head bed (Aluminum, Wood, etc.)
2 Splinting Materials
1 Adhesive Tape
1 Burn Sheet, Sterile (40” x 80” minimum)
1 Rigid Extrication Collar
4 Trauma Dressings (minimum of 10” X 30”)
1 Eye Shield/Cup
1 Pen Light
4 Tourniquets (a device used to cut off all blood supply)
2 Towels

1 Pillow
4 Occlusive Dressing
1 Watch/Timing Device
1 500 ml sterile water (for contest purposes expiration date not applicable)
1 Vest Type Extrication Device Compliment of Straps for Long Spine Board (buckle straps, spider straps, etc.)
1 Automated External Defibrillator Training Unit (do not power up)

NOTE: Teams must provide their own manikin, equipped with a feedback feature or capable to record the results of CPR.

3. All injuries presented during the problem will be created using Moulage to be as realistic as possible. No tape, tattoos, or photos describing the injury will be used. All injuries presented during the 1st Aid Problem if feasible will be created using Moulage to be as realistic as possible. If Moulage is cost effective no tape, tattoos, or photos describing the injury will be used. All material used to solve the first aid problem will be picked up by the team prior to moving on to their next prospective station.

A. Local/Regional contests may use the following for the creation of injuries (if not using Moulage). Injuries/conditions requiring treatment will be identified by cards, envelopes or labels attached to the patient at or as near the location of the injury as possible on the outside of the clothing, be identified by simulated wounds, or be in the reading of the problem. Signs, symptoms or mechanisms of injury may be used. If signs and symptoms are used, all signs and symptoms shall be identified by cards, envelopes or labels placed on patient. All signs and symptoms will be given to the teams in writing. Wounds that are listed in the reading of the problem shall also be placed on patient. (Exception: If the wound is on the eyelid or an impaled object in the eye, the label will NOT be placed on the eye, but in an obvious area near the eye.)

B. During the initial or patient assessment, teams may find an envelope attached to the patient(s) or be provided an envelope by the judges which contains patient information that needs immediate attention. If repositioning of patient(s) is required for treatment, patient(s) must be placed in the proper position prior to treatment. Upon completion of treatment of these conditions, the initial or patient assessment will be resumed at the point where team left off. The patient(s) will already be marked upon arrival of the team.

C. If used lettering on the cards and/or labels will be at least 1/4-inch in height and all life-threatening conditions will be in red.

Example: 2-INCH WOUND ON FOREHEAD

If required by the problem, Cardiopulmonary Resuscitation (CPR) with an AED and rescue breathing will only be performed on a manikin. A barrier device must be used when contacting manikin. The face masks/shields may be removed when the team is required to give artificial ventilation, CPR, inflating splints, etc.

4. If required by the problem, Cardiopulmonary Resuscitation (CPR) with an AED and rescue breathing will only be performed on a mannequin.

5. Any team found committing an act that will endanger the patient will receive fifty (50) discounts for each infraction.

6. Team members must wear an approved protective hat, safety shoes, and safety glasses, at a minimum.

GUIDELINES AND PROCEDURES

1. The First Aid Contest will consist of a first aid problem and a written examination.

2. One first aid team will be allowed to compete for each mine rescue team entered in the Mine Rescue Contest.

3. The first aid team will consist of three members from the mine rescue team.

4. All first aid team members will remain in isolation until their team is called. Teams will receive a briefing on the problem scenario when they arrive at the first aid station.

5. There will be a minimum of two (2) judges at the first aid station.

6. Judges will be assigned specific tasks to be scored prior to the judging and will record their findings on a specific scoring card issued prior to the contest.

7. Judges must be trained in first aid methods and knowledgeable in the scenario they will be judging.

8. There will be two (2) first aid stations, including:
   a. Patient assessment, control of bleeding, physical shock, wounds, burns, scalds, musculoskeletal injuries, and transportation.
   b. Cardiopulmonary Resuscitation (CPR) with an AED and Artificial Respiration may be incorporated into the problem.

9. Problems will be kept in unsealed envelopes, retained by the judges, and given to the team after the timing device has been started. Judges shall place the patient in the required position as stated in the problem to be worked. The working time for a problem will start when the team starts the timing device.

10. The problem will end and teams will stop the timing device when all conditions have been located, and treated. The timekeeper/judge must time the problem in minutes and seconds and consult with the team upon completion of the problem to verify the time.

11. Problem will be designed from the Skill Sheets approved by the Rules Committee. Teams will be required to triage the accident scene. Problem may have up to three patients at the scene.

12. Contest officials will designate a space (15 feet by 15 feet minimum) for teams to work, with a minimum of 3 feet by 15 feet area for the team's equipment. All equipment and team members will be kept behind a baseline designated by a contest official. All problems will be worked in the designated area which shall contain only the judges, bystanders/patients and the contesting teams.

13. After stopping the timing device, team members will remain with the patient(s) until released by the judges. Any physical treatment(s) not performed, i.e. bandage, splint not correctly placed or utilized will be pointed out to team at this time. **No docks will be added for any physical treatment(s) not performed, i.e. bandage, splint not correctly placed or utilized that was not pointed out after the team leaves the working field.

14. If a reasonable amount of time is not set for the problem, a calculated time will be determined by contest officials by averaging the working time of all teams participating in the contest (1 discount per 3-minute overtime or fraction thereof). When a reasonable amount of time is not utilized the average working time will not be in problems.

    The accumulation of individual discounts within a procedure shall not exceed the discounts for failure to perform that procedure. (Example AV, CPR, etc.)

15. Judges must keep an accurate time and record it on scoring sheets for tie breaker purposes.

16. Judges will not discuss any first aid problem with team members (prior to the working of the problem) unless there are technical problems.

17. Only judges, contest officials, escorted photographers, and news media approved by the contest director will be permitted in the first aid station. A separate area will be provided for spectators to observe the teams during competition.

18. On the day prior to the contest, a meeting will be held to discuss officials' and judges' assignments and training. All personnel who will be officiating during the contest shall attend this meeting.

19. The team will not be permitted to use first aid manuals for reference purposes during the working of the problem. No practicing will be allowed on the field before the beginning of the contest, with the exception of familiarization of AED and Manikin.

20. Liquids applied for the purposes of washing eyes, moistening dressings, and rinsing contaminated skin must be simulated. All dressings and splints must be placed properly. (If traction splints are used "DO NOT APPLY TRACTION TO THE SPLINT")

21. Team members are not allowed to leave the working area to obtain materials for the problem.

22. Rough treatment of patient is not allowed.

    Handling of a patient by a team or team member in such a manner that could compromise condition of the patient. (Examples: Mishandling extremities, stepping across patient, etc.) (Straddling is only acceptable for patient loading during 2-person extremity lift, or fireman's drag.) (This does not include the rolling of the patient to the side that is injured or rolling a patient more than one time that has signs/symptoms of spinal injury. When teams are required to roll a patient with signs/symptoms of spinal injury, the correct log roll procedure skill sheet for the selected log roll technique, whether it is two or three person log roll will be followed).

23. If a tourniquet is required in First Aid problem, do not secure tightly. No cranking down on the tourniquet. Upon proper application of the tourniquet, bleeding will be considered controlled and acknowledged by the judge.

24. Assistance in treatment from a supposedly unconscious patient (if patient is provided by the working team) is not allowed. Patient cannot talk, direct, or assist unless stated in the problem. (Reactionary or unintentional movements by the patient should not be discounted)

25. Teams failing to complete the problem in the established time (when established) will be discounted.

26. A predetermined amount of trophies will be awarded for the First Aid Competition base on the best cumulative team scores (least amount of discounts). In the event of a tie, the first tie breaker will be time on First Aid Competition, and the second tie breaker will be best test scores. The winning teams will be announced during the banquet.

Ties

In the event of ties in the contest, Scorecard A (First Aid Procedures and Critical Skills) discounts will be the first tie breaker, Scorecard B (AV/CPR) discounts will be the second tie breaker, written exam will be the third tie breaker and actual working time, in minutes and seconds, of the team will be the fourth tie breaker.

WRITTEN TEST

1. On the day before the contest begins, all written tests will be administered in isolation. The written examination will consist of thirty (30) multiple choice questions taken from the Eleventh Edition of Brady "Emergency Medical Responder – First on the Scene" taken from Chapters: 3, 4, 6, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 22, 23 and 27 and the most current edition of American Heart Association BLS Student Handbook (as of January 1st of the contest year) which are the authorized for reference and guidance. The contestants will be assessed one (1) discount point

for each incorrect or unanswered question. Any alterations to the test questions or answers will be determined to be incorrect by the test judge and discounts assessed.

2. Each question shall contain a blank space which shall represent a key word, with no more than two consecutive blanks per statement. Answers will be multiple choice with three choices. Answers will not be intentionally misspelled. "None of the above" shall not be used as one of the choices.

3. Only the three (3) team members registered for the First Aid Competition will be scored on the First Aid Written Test.

4. Team members taking the written examination will not be permitted to take any written material or information into the testing area.

5. There will be no discussion during the time that written examinations are being taken.

6. Team members from the same team will not be allowed to sit at the same table while taking the written examination.

7. In any case, the judges will not explain the meaning of questions.

8. Scoring of the test will be completed by at least two qualified judges.

APPEALS

1. Upon completion of the examination of the patient by the judges, the team will be informed of any infractions regarding treatment while at the station, during the 5-minute look. The team will be permitted to verbally appeal any infractions either with the field judge or the chief judge. If not resolved, the chief judge will make the final decision until an appeal can be filed by the team.

2. During the verbal appeal process, all questionable splints/dressings must remain intact until any verbal appeal is resolved. If any questionable splints/dressings are removed or altered by the team prior to being resolved, the appeal will not be allowed.

3. At the conclusion of the competition, the team members will be instructed to report to the area designated for 30-minuted looks. A schedule will be posted near the 30-minute look location. The First Aid Team and Team Trainer will have thirty (30) minutes to review the judges' scorecards and the team's written test scores.

   At the conclusion of the 30-minute look, the first aid team and/or trainer may submit a written appeal for any discount received to the person in charge of the 30-minute look.

   Written appeals are not to exceed one page for any discount assessed and will be forwarded to the First Aid Appeals Committee. No additional appeals will be accepted after the 30-minute look.

4. Documentation (contest rules and other documents used in the contest) supporting the appeal will be accepted.

5. Any protest(s) will be considered by the First Aid Appeals Committee. A discount summary sheet will be used to list the discounts.

6. All discounts except time will be listed and totaled. Both the first aid team and the review judge will sign the team discount summary sheet to certify they have reviewed the discounts and verified the totals. All appeals will be considered by the committee and their decision will be binding and final.

DISCOUNTS

1. The team is required to call for help/call 911, once during the working of the problem. This statement must be made prior to starting triage.

2. Each critical skill identified with an asterisk (*) shall be clearly verbalized by the team as it is being conducted.

3. When using acronyms required in the Eleventh Edition of Brady "Emergency Medical Responder – First on the Scene" ie. BP-DOC and after initially stating what it stands for, the team will not be required to explain the acronym again.

4. Discounts will not be added to the team score once the judges have signed their discount sheets following a review with team members. This does not preclude changes due to administrative errors or a misapplication of a rule.

5. Teams will not be discounted more than once for any one mistake in the same problem where such mistake may qualify under more than one discount. Judges will confer and assess the highest single discount.

6. Teams will be additionally discounted for repetition of the same mistakes in the same problem. For example, improper bandaging on two separate wounds (2-times the appropriate discount), three granny knots (3 times the appropriate discount), etc.

7. Teams will not be discounted for doing more than the problem call for, unless it is detrimental to the patient or improper care.

8. If the discount is not listed on the discount sheet and if it is not covered under one of the approved rules of the contest, judges will not improvise a discount to cover the suspected violation.

9. Prior to stopping the clock, the team must reassess the patient's level of consciousness, respiratory status and patient response.

10. If Moulage **is not** being used Teams must make statement to judge, "Removing clothing; exposing and cleaning wound surface(s)". This statement is only required to be made once during the working of the problem, prior to treating first wound.

11. Rapid Assessment consists of Initial Assessment and Patient Assessment.

12. If the Rapid Assessment has been performed, all life-threatening injuries are treated, and transportation is delayed the secondary patient assessment will be performed and will consist only of the procedures (no critical skills on patient assessment) with treating all injuries when found.

Information for this table taken from Chart figure 27.5– Start Triage System				
	IMMEDIATE	**DELAYED**	**MINOR**	**DECEASED**
Respirations	**>30 per minute**	**<30 per minute**	**<30 per minute**	**Absent**
Perfusion	**Capillary refill >2 seconds or radial pulse absent**	**Capillary refill <2 seconds or radial pulse present**	**Capillary refill <2 seconds or radial pulse present**	**Absent**
Mental Status	**Unable to follow commands**	**Able to follow commands**	**Able to follow commands (Can Walk)**	**Absent**

Table Reference: Emergency Medical Responder, Eleventh edition by Le Baudour & Bergeron

IMMEDIATE

Teams will systematically conduct initial assessment, treating all life-threatening injuries/conditions. When one or more of the conditions listed in Rule 26 is encountered the team will perform a rapid patient assessment according to the patient assessment skill sheet. To perform a rapid patient assessment, teams will examine each area of the body in its entirety, verbalizing critical skills and injuries/conditions found. No treatment is required for non-life-threatening conditions/injuries found during the rapid patient assessment.

After completing rapid assessment and treating life threatening conditions, if transportation is delayed patient treatment will continue until transportation is available. A secondary patient assessment would be required, treating conditions/injuries as found. Straps may be released as necessary. Support would have to be taken as required. Team will re-strap and transport when transportation is available, or treatment completed. Patient is then prepared for transport and/or transported as required by written problem. To prepare for transportation, a team will be required to properly place and secure a patient on a backboard as outlined in the skill sheets, cover with a blanket the team will verbalize – "transporting patient". (If instructions are given that transportation is delayed prior to or during a rapid assessment a complete-secondary patient assessment only will be required)

DELAYED

Teams will systematically conduct the patient assessment according to procedures of the patient assessment skill sheet. Each area of the body shall be examined in its entirety prior to treating injuries in that area (except taking support). All injuries must be treated on the area being examined prior to moving to the next area to be examined. The sling for fractured ribs may be applied after upper extremity has been surveyed/treated. If treatment has been started and can be completed by one team member (except injuries requiring a backboard), the other team member may continue the examination to the next area and begin treatment. (Systemically, legs are treated before the arms.)

MINOR

Teams will systematically conduct the patient assessment according to procedures of the patient assessment skill sheet. Each area of the body shall be examined in its entirety prior to treating injuries in that area (except taking support). All injuries must be treated on the area being examined prior to moving to the next area to be examined. The sling for fractured ribs may be applied after upper extremity has been surveyed/treated. If treatment has been started and can be completed by one team member (except injuries requiring a backboard), the other team member may continue the examination to the next area and begin treatment. (Systemically, legs are treated before the arms.)

DECEASED

Once the determination that a patient is deceased the team will be required to cover the patient before stopping the timing device(s).

SCORECARD "A" DISCOUNTS

1. All life-threatening conditions shall be located and started before patient assessment can begin. _____20 discounts

   Life threatening conditions will be considered a patient having any one or more of the following conditions: breathing difficulties, no pulse, life threatening bleeding, spinal injury, skull fracture, a sucking chest wound.

   Patient assessment can begin after all life-threatening conditions have been located and treatment started. Environmental and Medical Emergencies can be treated anytime during the working of the problem after initial assessment.

2. When the team encounters life-threatening bleeding, no work other than controlling bleeding shall be done until bleeding is controlled. Bleeding is controlled when notified by the Judge (judge makes a statement that bleeding is controlled). If treatment has been started and one team member can complete that treatment, the other team member may continue to work._____10 discounts for each infraction

3. During the course of the problem, teams may encounter a card, envelope or label stating various conditions. Upon completion of treatment of these conditions, resume patient assessment at the point where team left off._____5 discounts for each infraction

4. Patient cannot talk, direct, or assist unless stated in the problem. _____5 discounts for each infraction

   Reactionary or unintentional movements by the patient should not be discounted

5. The bystander/patient if used as a bystander must be shown the correct method of support. _____2 discounts

   The bystander must be shown the correct method of support and maintaining the open airway by a team member or members any time during the working of the problem, but before taking support.

6. No practicing will be allowed on the field before the beginning of the contest. No reference books or training material will be permitted in the working area during the working or reading of the problems. _____5 discounts

7. All team members shall be dressed uniformly. Shoes need not be identical. The pants/shorts shall be the same color. _____1 discount

8. The team's material and equipment (jump kits, splints, etc.) may not be assembled or donned (excluding BSI) until after the timing device is started. The manikin may be placed in the designated area prior to starting the timing device._____5 discounts

9. Handling of a patient by a team or team member in such a manner that could compromise condition of the patient. (Examples: Mishandling extremities, stepping across patient, etc.) (Straddling is only acceptable for patient loading.) (This does not include the rolling of the patient to the side that is injured or rolling a patient more than one time that has signs/symptoms of spinal injury. When teams are required to roll a patient with signs/symptoms of spinal injury, the correct log roll procedure skill sheet for the selected log roll technique, whether it is two or three person log roll will be followed)._____5 discounts for each infraction

10. All injuries and/or conditions shall be treated (example: wound, fracture, frostbite). ____20 discounts for each infraction

11. Failure to perform a required critical skill. Each CRITICAL SKILL shall be performed as identified on the skill sheets. ____2 discounts for each infraction

    Except for CPR/AV covered by Scorecard B

12. During patient assessment, failure to verbally state the location physically examined and each condition found. _____1 discounts foreach infraction.

13. Working out of order (assessment, procedure, critical skill)._____2 discounts

14. Failure to follow written instructions._____5 discounts

15. Teams shall not pad around the head and neck of the patient, for a suspected spinal injury, before the patient is placed onto the backboard.____1 discounts

    Teams shall not secure head to backboard before securing the torso.

16. Personal protective equipment must be donned by the Team prior to patient(s) Contact. _____5 discounts for each infraction.

    Gloves, face shields and/or masks and goggles or safety glasses combination meeting blood borne pathogen requirements. Only BSI may be donned prior to starting the timing device

17. Gloves shall be changed if there would be contamination because of a glove tear or due to other contamination (such as contacting multiple patients)._____2 discounts for each infraction

18. The broken-back board splint may be preassembled and padded. Other splints may be pre-padded but not assembled. _____5 discounts for each infraction.

    Cravat bandages cannot be preassembled on the back board, except for tying padding

19. Failure to take support of a fracture or dislocation (not supporting fracture or dislocation). _____10 discounts for each infraction

    a. Support of Extremities – Above and below the fracture or dislocation
    b. Support of Hip – Both sides of the fracture or dislocation
    c. Support for spinal injury – Stabilization of neck/Modified Jaw Thrust except for analyzing and shocking with AED patient during CPR
    d. Support for skull fracture – Stabilization of neck/Modified Jaw Thrust
    e. No support for fractured ribs,
    f. No support of fractures/dislocations of nose, jaw, fingers, and toes

20. Support of fractures and/or dislocations shall not be broken or released. (except during the use of an AED when analyzing or shock is delivered)_____5 discounts for each infraction

    When changing support, if support is broken, this discount applies. Change of support can be done as many times as the team desires provided the support is not broken.

    Support for upper extremity fractures/dislocations shall be maintained until the sling and swathe are completed. Discount if support of fracture and/or dislocation is released by support person before sling is completed. Sling and swath not required with air splints.

21. Fractures/dislocations shall be supported prior to bandaging injuries. Once the extremity has been assessed, fractures/dislocations must be supported prior to bandaging injuries on the extremity. ____5 discounts for each infraction.

    During initial and patient assessment, teams must physically support/stabilize fractures and dislocations that require support as they are found. When the fracture/dislocation is on an extremity and support has been taken, the team must complete the examination on the extremity treating other injures prior to splinting the fracture/dislocation.

22. Not applying sling for upper extremity wound._____1 discount for each infraction

    Triangular slings are required for all wounds of upper extremities, including shoulder and armpit wounds. Slings will not be required for upper extremity burns/deep cold injuries. However, if a burn/deep cold injury and wound and/or fracture/dislocation are present on the same upper extremity, a sling shall be applied.

23. Failure to determine immediate patients._____10 discounts for each infraction

An immediate patient shall be transported immediately (if transportation is available). This presents a load and go situation.

Immediate conditions are:

- Respirations: >30 respirations per minute
- Perfusion: Capillary refill > 2 seconds or radial pulse absent
- Mental Status: Unable to follow commands. Any one or more of the above conditions must be clearly visible on the patients.

24. Failure of team to start/stop timing device._____2 discounts

25. Each incorrect answer on written examination._____1 discount

INTERPRETATIONS OF SCORECARD "B"
ARTIFICIAL VENTILATION/CARDIOPULMONARY RESUSCITATION

1. Failure to determine unresponsiveness (according to Critical Skill Sheet)._____1 discount
2. Failure to call for help._____1 discount
3. Failure to open airway._____1 discount
4. Failure to use proper maneuver to open airway (using head-tilt/chin-lift maneuver when jaw-thrust should be used, vice versa). _____1 discount
5. Failure to assess breathlessness within 10 seconds._____1 discount
6. Failure to use one-way valve barrier device when ventilating manikin._____1 discount
7. Failure to state "get AED"._____1 discount
8. Failure to use mouth-to-nose ventilation when required. _____1 discount
9. Failure to keep body and head in line, if spinal injury exists. _____1 discount
10. Failure to use tongue jaw lift, cross-finger technique, or finger sweep when required. ____1 discount
11. Failure to reposition head when airway obstruction is suspected._____1 discount
12. Failure to give chest compressions when required (airway obstruction skill sheet). _____1 discount
13. Failure to make pulse prior to giving compressions._____1 discount
14. Failure to assess pulse for 5-10 seconds. ____1 discount
15. Failure to correctly locate the carotid pulse. _____1 discount
16. Failure to ask judge for presence of a pulse. ____1 discount

Cardiopulmonary Resuscitation

1. Failure to give AV/CPR when required. _____20 discounts

   Maximum of 3 sets AV/CPR or combination thereof

2. Improper Hand placement when giving compressions.____1 discount

3. Failure to make parallel axis with heels of hands._____1 discount

4. Allowing fingers to rest on chest._____1 discount

5. Compressions. Discounts shall apply to each set:

   a) Depth. Compression depth shall break the first line for 60 pounds pressure. Over compressions shall not be discounted. ____1 discount

   b) Number required. A total of 30 compressions shall be made each cycle. ____1 discount

   c) Release of upstroke. The release line shall be straight.____1 discount

   d) Rate. Compressions shall be made at the rate of 100 to 120 per minute. _____1 discount

6. Failure to maintain hand contact with manikin when releasing pressure during compressions. _____1 discount (This does not apply between cycles).

7. Failure to give 2 breaths between each cycle of compressions._____1 discount

   a. Timing (not completing breaths and returning to compressions in less than 10 seconds (This will be measured from the end of last down stroke to the start of the first down stroke of the next cycle.)_____1 discount

   b. Volume shall be at least .8 liters (through .7-liter line on new manikins). Over inflation shall not be discounted._____1 discount

8. Failure to give 5 cycles of 30 compressions and 2 breaths for each set of CPR (point of first down stroke to peak of last breath). (A cycle is 30 compressions and two (2) ventilations. A set is 5 cycles.)_____1 discount

9. Failure to assess pulse within 10 seconds after each set of CPR._____1 discount per set

10. Failure to give 30 chest compressions when airway obstruction is suspected._____1 discount

11. Failure to perform CPR as stated in the problem. Too many or too few compressions can be detrimental to patient._____1 discount

12. Failure for the number of Rescuer/Rescuers to perform CPR as stated in the problem. Team performing One-Person CPR when Two-Person CPR is required and vice versa. _____3 discount ____

    When problem states “Two-Rescuer CPR”, two people are required to perform CPR as listed in Two-Rescuer CPR skill sheets.

13. Failure to begin with compressions after pulse check is completed or when changing rescuers._____1 discount

14. Failure to apply the AED when available_____10 discounts

15. Failure of rescuers to change positions in 5 seconds or less when performing two- person CPR. _____1 discount

16. Failure of rescuer to ask the judge if the patient has a pulse when CPR is completed. _____1 discount

17. Delivery of simulated shock with AED to patient while in contact with the patient_____5 discount for each occurrence

Artificial Ventilation

1. Failure to give artificial ventilation. _____20 discounts

   Maximum of 3 sets AV/CPR or combination thereof

2. Failure to give 10-12 breaths in each 58-62-second period ____1discount

   1 minute of AV = 1 set

3. Failure to provide a breath volume of at least .8 liters (through .7-liter line on new manikins). Over inflation shall not be discounted. _____1 discount

4. Failure of rescuer to check for return of breathing and pulse when artificial ventilation is completed. _____1 discount

5. Failure of rescuer to state that patient is breathing and has a pulse when artificial ventilation is completed. _____1 discount

INITIAL ASSESSMENT

PROCEDURES		CRITICAL SKILL
1. SCENE SIZE UP	□ □	*A. Observe area to ensure safety *B. Call for help
2. MECHANISM OF INJURY	□ □ □	*A. Determine causes of injury, if possible *B. Triage: Immediate, Delayed, Minor or Deceased. *C. Ask patient (if conscious) what happened
3. INITIAL ASSESSMENT	□ □ □	*A. Verbalize general impression of the patient(s) *B. Determine responsiveness/level of consciousness (AVPU) Alert, Verbal, Painful, Unresponsive *C. Determine chief complaint/apparent life threat
4. ASSESS AIRWAY AND BREATHING	□ □ □	A. Correctly execute head-tilt/chin-lift or jaw thrust maneuver, depending on the presence of cervical spine (neck) injuries B. Look for absence of breathing (no chest rise and fall) or gasping, which are not considered adequate (within 10 seconds) C. If present, treat sucking chest wound
5. ASSESS FOR CIRCULATION	□ □ □	A. Check for presence of a carotid pulse (5-10 seconds) B. If present, control life threatening bleeding C. Start treatment for all other life-threatening injuries/conditions (reference Rule 2).

IMMEDIATE: Rapid Patient Assessment treating all life threats Load and Go. If the treatment interrupts the rapid trauma assessment, the **assessment** will be completed at the end of the **treatment**.
DELAYED: Secondary Patient Assessment treating all injuries and conditions and prepare for transport.
MINOR: (Can walk) Secondary-Patient Assessment treating all injuries and conditions and prepare for transport. After all IMMEDIATE and DELAYED patient(s) have been treated and transported.
DECEASED: Cover

<u>*NOTE</u>: Each considered critical skill identified with an asterisk (*) shall be clearly verbalized by the team as it is being conducted. After initially stating what BP-DOC- Bleeding, Pain, Deformities, Open wounds, Crepitus **stands for, the team may simply state** BP-DOC **when making their checks.**

- **Teams may use the acronym "CSM" when checking circulation, sensation and motor function.**

PATIENT ASSESSMENT

PROCEDURES		CRITICAL SKILL
1. HEAD	□ □ □ □ □ □ □	*A. Check head for BP-DOC- Bleeding, Pain, Deformities, Open wounds, Crepitus *B. Check and touch the scalp Check *C. the face *D. Check the ears for bleeding or clear fluids *E. Check the eyes for any discoloration, unequal pupils, reaction to light, foreign objects and bleeding *F. Check the nose for any bleeding or drainage Check the *G. mouth for loose or broken teeth, foreign objects, swelling or injury of tongue, unusual breath odor and discoloration
2. NECK	□ □	*A. Check the neck BP-DOC-Inspect for *B. medical ID
3. CHEST	□ □ □	*A. Check chest area for BP-DOC *B. Feel chest for equal breathing movement on both sides Feel *C. chest for inward movement in the rib areas during inhalations
4. ABDOMEN	□	*A. Check abdomen (stomach) for BP-DOC
5. PELVIS	□ □	*A. Check pelvis for BP-DOC *B. Inspect pelvis for injury by touch (Visually inspect and verbally state inspection of crotch and buttocks areas)
6. LEGS	L R □ □ □ □ □ □ □ □	*A. Check each leg for BP-DOC B. Inspect legs for injury by touch C. Unresponsive: Check legs for paralysis (pinch inner side of leg on calf) *D. Responsive: Check legs for motion; places hand on bottom of each foot and states “Can you push against my hand?” *E. Check for medical ID bracelet
7. ARMS	L R □ □ □ □ □ □ □ □	*A. Check each arm for BP-DOC B. Inspect arms for injury by touch C. Unresponsive: Check arms for paralysis (pinch inner side of wrist) *D. Responsive: Check arms for motion (in a conscious patient; team places fingers in each hand of patient and states “Can you squeeze my fingers?” *E. Check for medical ID bracelet
8. BACK SURFACES	□	*A. Check back for BP-DOC

ONE-PERSON CPR (MANIKIN ONLY)

PROCEDURES		CRITICAL SKILL
1. RESCUER ESTABLISH UNRESPONSIVENESS	□	A. Tap or gently shake shoulders
	□	*B. "Are you OK?"
	□	C. Determine unconsciousness without compromising cervical spine (neck) injury
	□	*D. "Call for help"
	□	*E. "Get AED" (Note: If AED is used, follow local protocol)
2. RESCUER MONITOR PATIENT FOR BREATHING	□	A. Look for absence of breathing (no chest rise and fall) or gasping breaths, which are not considered adequate (within 10 seconds)
3. RESCUER CHECK FOR CAROTID PULSE	□	A. Correctly locate the carotid pulse - on the side of the rescuer, locate the patient's windpipe with your index and middle fingers and slide your fingers in the groove between the windpipe and the muscle in the neck
	□	B. Check for presence of carotid pulse for 5 to 10 Seconds
	□	*C. Absence of pulse
	□	*D. Immediately start CPR if no pulse
4. POSITION FOR COMPRESSIONS	□	A. Locate the compression point on the breastbone between the nipples
	□	B. Place the heel of one hand on the compression point and the other hand on top of the first so hands are parallel
	□	C. Do not intentionally rest fingers on the chest
	□	D. Keep heel of your hand on chest during and between compressions
5. DELIVER CARDIAC COMPRESSION	□	A. Give 30 compressions
	□	B. Compressions are at the rate of 100-120 per minute
	□	C. Down stroke for compression must be on or through compression line
	□	D. Return to baseline on upstroke of compression
6. ESTABLISH AIRWAY	□	A. Kneel at the patient's side near the head
	□	B. Correctly execute head-tilt/ chin-lift or jaw thrust maneuver depending on the presence of cervical spine injuries

7. VENTILATIONS BETWEEN COMPRESSIONS	□ □ □ □	A. Place barrier device (pocket mask / shield with one way valve) on manikin B. Give 2 breaths 1 second each C. Each breath - minimum of .8 (through .7 liter line on new manikins) D. Complete breaths and return to compressions in less than 10 seconds (This will be measured from the end of last down stroke to the start of the first down stroke of the next cycle.)
8. CONTINUE CPR FOR TIME STATED IN PROBLEM	□ □ □ □ □ □	A. Provide 5 cycles of 30 chest compressions and 2 rescue breaths B. To check for pulse, stop chest compressions for no more than 10 seconds after the first set of CPR C. Rescuer opens airway and checks for adequate breathing or coughing D. Rescuer checks for a carotid pulse E. If no signs of circulation are detected, continue chest compressions and breaths and check for signs of circulation after each set F. A maximum of 10 seconds will be allowed to complete ventilations and required pulse checks between sets (this will be measured from the end of the last down stroke to the start of the first down stroke of the next cycle)
9. CHECK FOR RETURN OF PULSE	□ □	A. After providing required CPR (outlined in problem), check for return of pulse (within 10 seconds) *B. "Ask judge for presence of a pulse."

TWO-RESCUER CPR WITH AED (NO SPINAL INJURY - MANIKIN ONLY)

PROCEDURES		CRITICAL SKILL
1. RESCUER ESTABLISH UNRESPONSIVENESS	□	A. Tap or gently shake shoulders
	□	*B. "Are you OK?"
	□	C. Determine unconsciousness without compromising cervical spine (neck) injury
	□	*D. "Call for help"
	□	*E. "Get AED" (Note: If AED is used, follow local protocol)
2. RESCUER MONITOR PATIENT FOR BREATHING	□	A. Look for absence of breathing (no chest rise and fall) or gasping breaths, which are not considered adequate (within 10 seconds)
3. RESCUER CHECK FOR CAROTID PULSE	□	A. Correctly locate the carotid pulse - on the side of the rescuer, locate the patient's windpipe with your index and middle fingers and slide your fingers in the groove between the windpipe and the muscle in the neck
	□	B. Check for presence of carotid pulse for 5 to 10 Seconds
	□	*C. Absence of pulse
	□	*D. Immediately starts CPR if no pulse
4. RESCUER POSITION FOR COMPRESSIONS	□	A. Locate the compression point on the breastbone between the nipples
	□	B. Place the heel of one hand on the compression point and the other hand on top of the first so hands are parallel.
	□	C. Do not intentionally rest fingers on the chest. Keep heel of your hand on chest during and between compressions.
5. RESCUER DELIVER CARDIAC COMPRESSION	□	A. Give 30 compressions
	□	B. Compressions are at the rate of 100 to 120 per minute
	□	C. Down stroke for compression must be on or through compression line
	□	D. Return to baseline on upstroke of compression
6. RESCUER ESTABLISH AIRWAY	□	A. Kneel at the patient's side near the head
	□	B. Correctly execute head-tilt/ chin-lift maneuver

7. RESCUER VENTILATIONS BETWEEN COMPRESSIONS	□ □ □ □	A. Place barrier device (pocket mask/shield with one way valve) on manikin B. Give 2 breaths 1 second each C. Each breath - minimum of .8 (through .7-liter line on new manikins) D. Complete breaths and return to compressions in less than 10 seconds (This will be measured from the end of last down stroke to the start of the first down stroke of the next cycle.)
8. CONTINUE CPR FOR TIME STATED IN PROBLEM	□ □ □ □ □ □	A. Provide 5 cycles of 30 chest compressions and 2 rescue breaths B. To check for pulse, stop chest compressions for no more than 10 seconds after the first set of CPR C. Rescuer at patient's head maintains airway and checks for adequate breathing or coughing D. The rescuer at the patient's head shall feel for a carotid pulse E. If no signs of circulation are detected, continue chest compressions and breaths and check for signs of circulation after each set F. A maximum of 10 seconds will be allowed to complete ventilations and required pulse checks between sets (this will be measured from the end of the last down stroke to the start of the first down stroke of the next cycle
9. RESCUER APPLIES THE AED (DURING THE FIFTH CYCLE OF COMPRESSIONS)	□ □ □	A. Rescuer continues compressions while other rescuer turns (simulated) on AED and applies pads. B. RESCUERS SWITCH rescuer clears victim, allowing AED to analyze. (Judges shall provide an envelope indicating a shockable or non-shockable rhythm) C. If AED indicates a shockable rhythm, rescuer clears victim again and delivers shock. *verbalize shock given
10. RESUME HIGH QUALITY CPR	□ □	A. Rescuer gives 30 compressions immediately after shock delivery (2 cycles). B. Other rescuer successfully delivers 2 breaths.
11. CHANGING RESCUERS	□	A. Change of rescuers shall be made in 5 seconds or less and will be completed as outlined in the problem. Team must switch every 5 cycles in less than 5 seconds
12. CHECK FOR RETURN OF PULSE	□ □	A. After providing required CPR (outlined in problem), check for return of pulse (within 10 seconds) *B. "Ask judge for presence of a pulse."

TWO-RESCUER CPR WITH AED (WITH SPINAL INJURY - MANIKIN ONLY)

PROCEDURES		CRITICAL SKILL
1. RESCUER ESTABLISH UNRESPONSIVENESS	□	A. Tap or gently shake shoulders
	□	*B. "Are you OK?"
	□	C. Determine unconsciousness without compromising cervical spine (neck) injury
	□	*D. "Call for help"
	□	*E. "Get AED" (Note: If AED is used, follow local protocol)
2. RESCUER MONITOR PATIENT FOR BREATHING	□	A. Look for absence of breathing (no chest rise and fall) or gasping, which are not considered adequate (within 10 seconds)
3. RESCUER CHECK FOR CAROTID PULSE	□	A. Correctly locate the carotid pulse - on the side of the rescuer, locate the patient's windpipe with your index and middle fingers and slide your fingers in the groove between the windpipe and the muscle in the neck
	□	B. Check for presence of carotid pulse for 5 to 10 second
	□	*C. Absence of pulse
		*D. Immediately start CPR if no pulse
4. RESCUER POSITION FOR COMPRESSIONS	□	A. Locate the compression point on the breastbone between the nipples
	□	B. Place the heel of one hand on sternum the compression point and the other hand on top of the first so hands are parallel
	□	C. Do not rest fingers on the chest Keep heel of your hand on chest during and between compressions
5. RESCUER DELIVER CARDIAC COMPRESSION	□	A. Give 30 compressions
	□	B. Compressions are at the rate of 100 to 120 per minute
	□	C. Down stroke for compression must be on or through compression line
	□	D. Return to baseline on upstroke of compression
6. RESCUER ESTABLISH AIRWAY	□	A. Kneel at the patient's head
	□	B. Correctly execute jaw thrust maneuver

7. RESCUER VENTILATIONS BETWEEN COMPRESSIONS	□ □ □ □	A. Rescuer should place the barrier device (pocket mask/Shield with one way valve) on manikin B. Rescuer Gives 2 breaths 1 second each C. Each breath - minimum of .8 (through .7 liter line on new manikins) D. Complete breaths and return to compressions in less than 10 seconds (This will be measured from the end of last down stroke to the start of the first down stroke of the next cycle.)
8. CONTINUE CPR FOR TIME STATED IN PROBLEM	□ □ □ □ □ □	A. Provide 5 cycles of 30 chest compressions and 2 rescue breaths B. To check pulse, stop chest compressions for no more than 10 seconds after the first set of CPR C. Rescuer at patient's head maintains airway and checks for adequate breathing or coughing D. The rescuer giving compressions shall feel for a carotid pulse E. If no signs of circulation are detected, continue chest compressions and breaths and check for signs of circulation after each set F. A maximum of 10 seconds will be allowed to complete ventilations and required pulse checks between sets (this will be measured from the end of the last down stroke to the start of the first down stroke of the next cycle
9. RESCUER APPLIES THE AED (DURING THE FIFTH CYCLE OF COMPRESSIONS)	□ □ □	A. Rescuer continues compressions while other rescuer turns on AED and applies pads. B. RESCUERS SWITCH rescuer clears victim, allowing AED to analyze. (Judges shall provide an envelope indicating a shockable or non-shockable rhythm) C. If AED indicates a shockable rhythm, rescuer clears victim again and delivers shock. *verbalize shock given
10. RESUME HIGH QUALITY CPR	□ □	A. Rescuer gives 30 compressions immediately after shock delivery (2 cycles). B. Other rescuer successfully delivers 2 breaths.
11. CHANGING RESCUERS	□	A. Change of rescuers shall be made in 5 seconds or less and will be completed as outlined in problem. Team must switch every 5 cycles in less than 5 seconds.
12. CHECK FOR RETURN OF PULSE	□ □	*A. After providing required CPR (outlined in problem), check for return of pulse (within 10 seconds) *B. "Ask judge for presence of a pulse."

MOUTH-TO-MASK RESUSCITATION

PROCEDURES		CRITICAL SKILL
1. ESTABLISH UNRESPONSIVENESS	□ □ □ □ □	A. Tap or gently shake shoulders *B. "Are you OK?" C. Determine unconsciousness without compromising C-spine injury *D. "Call for help" *E. "Get AED" (Note: If AED is used, follow local protocol)
2. MONITOR PATIENT FOR BREATHING	□	A. Look for absence of breathing (no chest rise and fall) or gasping, which are not considered adequate (within 10 seconds)
3. CHECK FOR CAROTID PULSE	□ □ □	A. Correctly locate the carotid pulse (on the side of the rescuer) B. Check for presence of carotid pulse for 5 to 10 second. *C. Presence of pulse
4. ESTABLISH AIRWAY	□	A. Correctly execute head tilt / chin lift or jaw thrust maneuver depending on the presence of cervical spine (neck) injuries
5. VENTILATE PATIENT	□ □	A. Place barrier device (pocket mask/shield with one-way valve on manikin B. Ventilate patient 10 to 12 times per minute. Each ventilation will be provided at a minimum of .8 (through .7-liter line on new manikins)
6. CHECK FOR RETURN OF BREATHING AND PULSE	□ □	A. After providing the required number of breaths (outlined in problem), check for return of breathing and carotid pulse within 10 seconds *B. "Patient is breathing and has a pulse"

AIRWAY OBSTRUCTION (UNCONSCIOUS VICTIM – WITNESSED)

PROCEDURES		CRITICAL SKILL
1. INTIALLY ASSESS LEVEL OF CONSCIOUSNESS	□ □ □ □ □	A. Tap or gently shake shoulders *B. "Are you OK?" C. Determine unconsciousness without compromising C-spine injury *D. "Call for help" *E. "Get AED" (Note: If AED is used, follow local protocol)
2. MONITOR PATIENT FOR BREATHING	□	A. Look for absence of breathing (no chest rise and fall) or gasping, which are not considered adequate (within 10 seconds)
3. PULSE CHECK	□ □ □	A. Correctly locate the carotid pulse - on the side of the rescuer, locate the patient's windpipe with your index and middle fingers and slide your fingers in the groove between the windpipe and muscle in the neck B. Check for presence of carotid pulse for 5 to 10 seconds *C. Patient has pulse
4. OPEN AIRWAY	□ □	A. Correctly execute head-tilt/chin-lift or jaw thrust maneuver depending on the presence of cervical spine (neck) injuries *B. "Look for foreign object"
5. ATTEMPT VENTILATION	□ □ □ □	A. Place barrier device on manikin B. Seal mouth and nose C. Attempt to give slow breath (1 second duration) *D. Identify if there is an obstruction
6. CHECK POSITIONING	□ □	A. Re-establish airway using correct method and procedure *B. Identify continued presence of the obstruction
7. POSITION FOR COMPRESSIONS	□ □ □	Locate the compression point on the breastbone between the nipples Place the heel of one hand on sternum the compression point and the other hand on top of the first so hands are parallel Do not rest fingers on the chest keep heel of your hand on chest during and between compressions.

8. COMPRESSIONS	□ □ □ □	A. Give 30 compressions B. Compressions are at the rate of 100-120 per minute C. Down stroke for compression must be on or through compression line D. Return to baseline on upstroke of compression
9. OPEN AIRWAY	□ □	A. Correctly execute head-tilt / chin-lift or jaw-thrust maneuver depending on the presence of cervical spine (neck) injuries *B "Look for foreign object"
10. PERFORM FINGER SWEEP (IF OBJECT IS SEEN)	□ □	A. Follow with finger sweep, only if the object is seen. (open mouth, grasping tongue and lower jaw with thumb and fingers, insert index finger of other hand down along inside cheek and deeply into throat in a hooking action) B. Grasp and remove foreign object
11. ATTEMPT VENTILATION	□ □ □	A. Correctly make effort to administer breath B. Administer second breath, if first successful and check pulse C. If unsuccessful repeat sequence of compressions, mouth check, finger sweep (if object is visible) and attempt to ventilate

SUCKING CHEST WOUND

PROCEDURES		CRITICAL SKILL
1. EXPOSE WOUND	□	*A. Expose entire wound
2. SEAL WOUND AND CONTROL BLEEDING	□	*A. Place occlusive dressing over wound (If occlusive dressing is not available use gloved hand)
	□	B. Apply direct pressure as needed to stop the bleeding
3. APPLY AN OCCLUSIVE DRESSING	□	A. Keep patient calm and quiet
	□	*B. Explain to the patient what you are doing
	□	*C. Ensure dressing is large enough not to be sucked into the wound (two inches beyond edges of wound)
	□	D. Affix dressing with tape
	□	*E. Seal on three sides
	□	*F. Monitor patient closely for increasing difficulty breathing
	□	*G. Transport as soon as possible
	□	H. Keep patient positioned on the injured side unless other injuries prohibit
	□	*I. Reassess wound to ensure bleeding control
		*J. Assess level of consciousness (AVPU), respiratory status and patient response

LIFE-THREATENING BLEEDING

PROCEDURES		CRITICAL SKILL
1. DIRECT PRESSURE AND ELEVATION	□ □ □ □ □	*A. Apply direct pressure with a gloved hand *B. Apply a dressing to wound (cover entire wound) and continue to apply direct pressure *C. Elevate the extremity except when spinal injury exists *D. Bleeding has been controlled *E. If controlled, bandage dressing in place
2. IF NOTIFIED THAT BLEEDING IS NOT CONTROLLED, APPLY TOURIQUET	□	A. Apply as per tourniquet skill sheet

External Bleeding

To Control: 1st: Direct pressure
2nd: Elevation & direct pressure
Last Resort: Tourniquet

Internal Bleeding

*1. Monitor breathing and pulse
*2. Keep patient still
*3. Loosen restrictive clothing
*4. Be alert if patient vomits
*5. Nothing by mouth
*6 Report possibility of internal bleeding as soon as EMS personnel on the scene.

TOURNIQUET

PROCEDURES		CRITICAL SKILL
1. DETERMINE NEED OR USING TOURNIQUET	□ □	If these conditions are met, a tourniquet may be the only alternative: A. Direct pressure has not been successful in stopping bleeding B. Elevation of wound above heart has not been successful in stopping of bleeding
2. SELECT APPROPRIATE MATERIALS	□	A. Select a band that will be between 1-4 inches in width and can be wrapped six or eight layers deep for improvised tourniquet or select factory tourniquet.
3. APPLY TOURNIQUET	□ □ □ □	<u>Factory Tourniquet</u> A. Wrap band around the extremity proximal to the wound (one inch above but not on a joint) <u>Improvised Tourniquet</u> B. Apply a bandage around the extremity proximal to the wound (one inch above but not on a joint) and tie a half knot in the bandage C. Place a stick or pencil on top of the knot and tie the ends of the bandage over the stick in a square knot D. Twist the stick until the bleeding is controlled, secure the stick in position
4. APPLY PRESSURE WITH TOURNIQUET	□ □	A. Do not cover the tourniquet with bandaging material *B. Notify other medical personnel caring for the patient
5. MARK PATIENT APPROPRIATELY	□	A. Mark a piece of tape on the patient's forehead "TQ" and time applied
6. REASSESS	□	*A. Assess level of consciousness (AVPU), respiratory status, and patient response

DRESSINGS AND BANDAGING – OPEN WOUNDS

PROCEDURES		CRITICAL SKILL
1. EMERGENCY CARE FOR AN OPEN WOUND	□	*A. Control bleeding
	□	*B. Prevent further contamination
	□	*C. Bandage dressing in place after bleeding has been controlled
	□	*D. Keep patient lying still
2. APPLY DRESSING	□	A. Use sterile dressing
	□	B. Cover entire wound
	□	C. Control bleeding
	□	D. Do not remove dressing
3. APPLY BANDAGE	□	A. Do not bandage too tightly.
	□	B. Do not bandage too loosely.
	□	C. Cover all edges of dressing.
	□	D. Do not cover tips of fingers and toes, unless they are injured.
	□	E. Bandage from the bottom of the limb to the top (distal to proximal) if applicable.

Multiple wounds will be treated as per procedures listed in patient assessment.

Impaled Objects

*1. Do not remove
2. Expose wound
3. Control bleeding
4. Stabilize with a bulky dressing; criss-cross the layers
5. Tie 4in. wide cravats around to hold in place, or tape in place
*6. Check for exit wound (treat when found)
7. Immobilize affected area

Impaled Objects in the Jaw

*1. Examine, inside & outside
2. If end not impaled in mouth – pull it out
3. Position head for drainage: if spinal injury, immobilize 1st and tilt board
4. Dress outside of wound
*5. Gauze on inside only if patient alert, (Simulate only in contest and state, "I would leave 3-4 inches of gauze outside of mouth.")

Impaled Objects in the Eye

1. Stabilize with 3-inch gauze or folded 4x4
2. Put cup (no Styrofoam) over object and allow cup to rest on roller gauze or 4x4
3. Secure cup with roller gauze (not over top of cup)

*4. Cover uninjured eye too

Open Neck Wound (Serious or Life Threatening)

*1. Gloved hand over wound
*2. Occlusive dressing over wound- 2 inches larger than wound site
3. Gauze dressing over occlusive
4. Place roller gauze beside site and wrap around figure 8 under opposite arm

Abdominal Injury

*1. Place on back with legs flexed at the knees (for closed or open wounds)

Additional Steps for Open Abdominal Wounds (Serious or Life Threatening)

*1. Apply moist dressing, then an occlusive dressing
*2. Cover the occlusive with pads or a towel for warmth
*3. If an object is impaled in abs, stabilize it and do not flex legs- leave them in the position you found them.

Skull Fractures and Brain Injuries

*1. Open airway with jaw thrust
2. Apply collar
*3. Use loose gauze dressing- no direct pressure
*4. Keep at rest, ask them questions
5. Don't elevate legs (on or off a backboard)
6. After entire body is immobilized- tilt back board, injured side down

Amputations

*1. Wrap in slightly moistened sterile dressing
2. Place in plastic bag or wrap in plastic
*3. Keep part cool avoid freezing
*4. Do not place in water or direct contact with ice
*5. Transport with patient
6. Label with patients name

NOTE: Slings are required for all wounds of upper extremities, including shoulder and armpit wounds. Slings will not be required for upper extremity burns. However, if a burn and wound and/or fracture/dislocation are present on the same upper extremity, a sling shall be applied.

TWO-PERSON LOG ROLL

PROCEDURES		CRITICAL SKILL
1. STABILIZE HEAD	□	*A. Stabilize the head and neck
2. PREPARING THE PATIENT	□ □	A. When placing patient on board place board parallel to the patient B. Kneel at the patient's shoulders opposite the board (if used) leaving room to roll the patient toward knees Raise the patient's arm, if not injured (the one closer to the rescuer) above the patient's head
3. PREPARING THE RESCUER	□ □	A. Grasp the patient at the shoulder and pelvis area B. Give instructions to bystander, if used to support
4. ROLLING THE PATIENT	□ □ □ □ □	A. While stabilizing the head, roll the patient toward the rescuer by pulling steadily and evenly at the shoulder and pelvis areas B. The head and neck should remain on the same plane as the torso C. Maintain stability by holding patient with one hand and placing board (if used) with other D. Roll the body as a unit onto the board (if used) (board may be slanted or flat) E. Place the arm alongside the body

THREE-PERSON LOG ROLL

PROCEDURES		CRITICAL SKILL
1. STABILIZE HEAD	□ □	*A. Stabilize the head and neck B. One rescuer should kneel at the top of the patient's head and hold or stabilize the head and neck in position found.
2. PREPARING THE PATIENT	□ □ □ □	A. A second rescuer should kneel at the patient's side opposite the direction the face is facing. B. When placing patient on board place board parallel to the patient. C. Quickly assess the patient's arms to ensure no obvious injuries. D. Kneel at the patient's shoulders opposite the board (if used) leaving room to roll the patient toward knees Raise the patient's arm, if not injured (the one closer to the rescuer) above the patient's head. E. The third rescuer should kneel at the patient's hips.
3. PREPARING THE RESCUER	□ □	A. Rescuers should grasp the patient at the shoulders, hips, knees, and ankles. *B. Give instructions to bystander (physically show), if used to support
4. ROLLING THE PATIENT	□ □ □ □ □ □	A. While stabilizing the head, the rescuer at the patient's head should signal and give directions, All rescuers should slowly roll the patient toward the rescuers in a coordinated move, keeping the spine in a neutral, in-line position. B. On three, slowly roll. One, two, three roll together. C. The head and neck should remain on the same plane as the torso, the rescuer holding the head should not initially try to turn the head with the body. (if the head is already facing sideways, allow the body to come into alignment with the head) D. Maintain stability by holding patient with one hand and placing board (if used) with other E. Roll the body as a unit onto the board (if used) (board may be slanted or flat) Center the patient on the board. F. Place the arm alongside the body

SPLINTING (RIGID) UPPER EXTREMITY FRACTURES AND DISLOCATIONS

PROCEDURES		CRITICAL SKILL
1. CARE FOR FRACTURE	□	*A. Check for distal circulation, sensation, and motor function ▪ Do not attempt to reduce dislocations (if applies)
2. IMMOBILIZING FRACTURE	□ □ □ □ □ □ □	A. Selection of appropriate rigid splint of proper length B. Support affected limb and limit movement C. Apply appropriate padded rigid splint against injured extremity D. Place appropriate roller bandage in hand to ensure the position of function E. Secure splint to patient with roller bandage, handkerchiefs, cravats, or cloth strips F. Apply wrap distal to proximal *G. Reassess distal circulation, sensation, and motor function
3. SECURING WITH SLING	□ □ □ □ □ □ □ □ □	A. Place sling over chest and under arm B. Hold or stabilize arm C. Triangle should extend behind elbow on injured side D. Pull sling around neck and tie-on uninjured side E. Pad at the neck (except when C-Collar is present) F. Secure excess material at elbow G. Fingertips should be exposed *H. Reassess distal circulation, sensation, and motor function
4. SECURING SLING WITH SWATHE	□ □ □	A. Use triangle cravat or factory swathe B. Swathe is tied around chest and injured arm *C. Reassess distal circulation, sensation, and motor function

ELBOW (STRAIGHT POSITION)

Follow Procedures No. 1 and No. 2 above

FINGER/FINGERS

Immobilize Fracture

1. Tape injured finger to an adjacent uninjured finger; or
2. Tape injured finger to a tongue depressor, aluminum splint, or pen and pencil
3. Secure with sling and swathe
4.

COLLAR BONE

Support and limit movement of affected area Follow
Procedures No. 1, No. 3 and No. 4 above

SHOULDER BLADE

Support and limit movement of affected area Follow Procedures No. 1, No. 3 and No. 4 above

NOTE: Do not reposition dislocations

SPLINTING (SOFT) UPPER EXTREMITY FRACTURES AND DISLOCATIONS (WRIST AND HAND)

PROCEDURES		CRITICAL SKILL
1. CARE FOR FRACTURE	□ □	*A. Check for distal circulation, sensation, and motor function B. Do not attempt to reduce dislocations (if applies)
2. IMMOBILIZING FRACTURE	□ □ □ □ □	A. Support affected limb and limit movement B. Place two cravats (triangular bandage) under wrist/hand C. Place pillow length wise under wrist/hand, on top of cravats (pillow should extend past fingertips) D. Lower limb, adjust cravats to tie E. Tie cravats distal to proximal
3. SECURING WITH SLING	□ □ □ □ □ □	A. Place sling over chest and under arm B. Hold or stabilize arm C. Triangle should extend behind elbow or injured side D. Secure excess material at elbow E. Fingertips should be exposed *F. Reassess distal circulation, sensation, and motor function
4. SECURING SLING WITH SWATHE	□ □ □	A. Use triangle cravat or factory swathe B. Swathe is tied around chest and injured arm *C. Reassess distal circulation, sensation, and motor function

SPLINTING (RIGID OR SOFT) PELVIC GIRDLE, THIGH, KNEE AND LOWER LEG

PROCEDURES		CRITICAL SKILL
1. DETERMINE NEED FOR SPLINTING	□ □	*A. Assess for: ▪ Pain ▪ Swelling ▪ Deformity B. Determine if splinting is warranted
2. APPLY MANUAL STABILIZATION	□	A. Support affected limb and limit movement ▪ Do not attempt to reduce dislocations
3. SELECT APPROPRIATE SPLINT	□ □	A. Select appropriate splinting method depending on position of extremity and materials available B. Select appropriate padding material
4. PREPARE FOR SPLINTING	□ □ □ □ □	A. Remove or cut away clothing as needed *B. Assess distal circulation, sensation, and motor function C. Cover any open wounds with sterile dressing and bandage D. Measure splint E. Pad around splint for patient comfort

5. SPLINT	□	A. Maintain support while splinting
		<u>Living Splint:</u>
	□	A. Immobilize the site of the injury
	□	B. Carefully place a pillow or folded blanket between the patient's knees/legs
	□	C. Bind the legs together with wide straps or cravats
		D. Carefully place patient on long spine board
	□	E. Secure the patient to the long spine board (if primary splint)
	□	*F. Reassess distal circulation, sensation, and motor function
		<u>Padded Board Splint:</u>
	□	A. Splint with two long padded splinting boards (one should be long enough to extend from the patient's armpit to beyond the foot. The other should extend from the groin to beyond the foot.) (Lower leg requires boards to extend from knee to below the foot.)
	□	B. Cushion with padding in the armpit and groin and all voids created at the ankle and knee
	□	C. Secure the splinting boards with straps and cravats
	□	D. Carefully place the patient on long spine board
	□	E. Secure the patient to the long spine board (if primary splint)
	□	*F. Reassess distal circulation, sensation, and motor function
		<u>Other Splints:</u>
	□	A. Immobilize the site of the injury
	□	B. Pad as needed
	□	C. Secure to splint distal to proximal
	□	D. Carefully place patient on long spine board
	□	E. Secure the patient to the long spine board (if primary splint)
	□	*F. Reassess distal circulation, sensation, and motor function
6. REASSESS	□	*A. Assess patient response and level of comfort

SPLINTING (SOFT) LOWER EXTREMITY FRACTURES AND DISLOCATIONS (ANKLE AND FOOT)

PROCEDURES		CRITICAL SKILL
1. CARE FOR FRACTURE	□ □	*A. Assess for distal circulation, sensation, and motor function B. Do not attempt to reduce dislocations (if applies)
2. IMMOBILIZING FRACTURE	□ □ □ □ □ □ □	A. Support affected limb and limit movement B. Place three cravats (triangular bandage) under ankle/foot C. Place pillow length wise under ankle/foot, on top of cravats (pillow should extend 6 inches beyond foot) D. Lower limb, adjust cravats to tie E. Tie cravats distal to proximal F. Elevate with blanket or pillow *G. Reassess distal circulation, sensation, and motor function

SPLINTING UPPER EXTREMITY/LOWER EXTREMITY
FRACTURES (AIR SPLINT)

PROCEDURES		CRITICAL SKILL
1. CARE FOR FRACTURE	□	*A. Assess distal circulation, sensation, and motor function(fingers/toes)
2. IMMOBILIZE FRACTURE	□ □ □ □ □ □	A. Grasp above and below the injury site B. Maintain support C. Properly apply air splint D. Splint should be relatively free of wrinkles E. Inflate splint to point that slight dent can be made *F. Reassess distal circulation, sensation, and motor function (fingers/toes)
3. MONITOR AIR-INFLATED SPLINT	□ □ □ □	*A. Periodically check for increase or decrease in pressure *B. Monitor pressure in splint with finger tip C. Make sure desired pressure is maintained *D. Reassess distal circulation, sensation, and motor function (fingers/toes)

NOTE: Air splints may not be used with open (protruding bones) fractures.
Air splints may only be used on the lower part of the extremities (from below the elbow on the arm and below the knee to the leg).

SPLINTING – FLAIL CHEST

PROCEDURES		CRITICAL SKILL
1. DETERMINE NEED FOR SPLINTING	□ □	*A. Assess for: • Pain • Swelling • Deformity *B. Determine if splinting is warranted
2. SELECT APPROPRIATE SPLINTING MATERIAL	□	A. Choose a pillow, blanket, trauma dressing, or other appropriate splinting material
3. PREPARE FOR SPLINTING	□ □	*A. Remove or cut away clothing as needed. B. Cover any open wounds with sterile dressing and bandage
4. APPLY SPLINT	□ □ □ □	A. Affix splint to chest with adhesive tape or roller bandage B. Immobilize the site of injury C. Use caution when taping splint to chest circumferentially *D. Ensure sufficient chest expansion
5. REASSESS	□	*A. Assess patient response and level of comfort
6. ASSIST VENTILATIONS	□	*A. Assist with ventilation as needed

ONE RESCUER BLANKET DRAG

PROCEDURES		CRITICAL SKILL
1. VICTIM SUPINE ON GROUND	□ □	A. Properly prepare blanket for use in blanket drag B. Spread blanket alongside patient with approximately one half the width gathered lengthwise into pleats
2. POSITION PATIENT	□ □ □	A. Properly roll victim on one side B. Take patients arm on side of body opposite to blanket and extend arm over head C. Support head and neck roll patient on side away from Blanket
3. PLACE PATIENT ON BLANKET	□ □ □ □ □	A. Properly position on blanket B. Hold patient on side while pleated portion of blanket is pulled in close to victim's back C. Roll patient onto blanket, extend opposite arm and roll onto opposite side D. Smooth out pleats and roll patient onto back E. Snugly wrap patient in blanket with arms at sides
4. PREPARE TO DRAG PATIENT	□ □	A. Proper blanket drag of patient B. Grasp portion of blanket beneath victim's head and drag victim to safety

TWO RESCUER EXTREMITY GROUND LIFT

PROCEDURES		CRITICAL SKILL
1. POSITIONING	□ □	A. Rescuer 1 – Kneel at the head of the patient and place one hand under each of the shoulders B. Rescuer 2 – Kneel by the patient's feet and grasp the patient's wrist
2. RAISING PATIENT TO A SITTING POSITION	□ □ □	A. Direct rescuer 2-to pull patient into a sitting position. B. Rescuer 1 – push patient's shoulders up, slip your arms under the patient's armpits and grasp wrist. C. Rescuer 2 – Gently pull-on patient's arms
3. POSITIONING AND LIFTING	□ □ □	A. Rescuer 1 –Once the patient is in a semi sitting position have rescuer 2 crouch down and grasp the patient's legs behind the knees. B. Rescuer 1-Directs rescuer 2 so you both stand at the same time. Then move as a unit when carrying the patient. C. The rescuer at the head to direct the rescuer at the feet when to stop the carry and when to place the patient down in a supine or seated position.

SHIRT DRAG

PROCEDURES		CRITICAL SKILL
1. POSITIONING	□	A. Rescuer - Kneel at the head of the patient and place one hand under each of the shoulders
2. MOVING PATIENT	□ □	A. Rescuer – Grasp shirt at the shoulder area B. Drag patient in a straight (keep spine as straight as possible avoid dragging a patient sideways, by one arm, or one leg. A sideways drag can cause twisting motions of the spine that could aggravate existing injuries.)
3. MOVING PATIENT DOWN STAIRS OR INCLINE	□	A. When using a drag to move a patient down stairs or down an incline, grab the patient under the shoulders and pull the patient head first as you walk backward. If possible, try to cradle the patient's head in your forearms as you drag.

ESTABLISHING AIRWAY–SUSPECTED CERVICAL SPINE (NECK) INJURY

PROCEDURES		CRITICAL SKILL
1. STABILIZE HEAD	□ □	A. Rescuer – Position at top of the victim's head B. Restrain victim's head and neck to avoid voluntary or involuntary movement/rotation of the neck
2. ESTABLISH AIRWAY	□	A. Use modified jaw thrust maneuver without causing over-extension of victim's neck
3. CHECK FOR BREATHING	□ □	A. Look for absence of breathing (no chest rise and fall) or gasping, which are not considered adequate (within 10 seconds) *B. State that the victim is/is not breathing
4. MAINTAIN OPEN AIRWAY	□	A. Do not compromise suspected neck injury

SHOCK

PROCEDURES		CRITICAL SKILL
1. CHECK FOR SIGNS AND SYMPTOMS OF SHOCK	□	*A. Check restlessness; anxiety; altered mental status; increased heart rate; normal to slightly low blood pressure; mildly increased breathing rate; pale (or bluish) skin (in victim with dark skin examine inside of mouth and nailbeds for bluish coloration.
	□	*B. Check for cool, moist skin; sluggish pupils; and nausea and vomiting.
	□	*C. Check for weakness
2. TREATMENT	□	A. Ensure the ABCs are properly supported.
	□	B. Control external bleeding.
	□	C. Keep the patient in a supine position.
	□	*D. Calm and reassure the patient and maintain a normal body temperature.
	□	E. Cover with blanket to prevent loss of body heat and place a blanket under the patient. (Do not try to place blanket under patient with possible spinal injuries)
	□	F. Continue to monitor and support ABCs
	□	G. Do not give the patient anything by mouth. Do not give any fluids or food and be alert for vomiting.
	□	*H. Monitor the patient's ABCs at least every five minutes.
	□	*I. Reassure and calm the patient

IMMOBILIZATION – LONG SPINE BOARD (Backboard)

PROCEDURES		CRITICAL SKILL
1. MOVE THE PATIENT ONTO THE LONG SPINE BOARD	□ □ □ □ □ □ □ □	A. Rescuer One at the head must maintain in-line immobilization of the head and spine B. Rescuer One at the head directs the movement of the patient C. Other Rescuers control movement of the rest of body D. Rescuer Two position themselves on same side E. Upon command of Rescuer One at the head, roll patient onto side toward Rescuer Two. F. Quickly assess posterior body, if not already done G. Place long spine board next to the patient with top of board beyond top of head H. Place patient onto the board at command of the Rescuer at head while holding in-line immobilization using methods to limit spinal movement I. Slide patient into proper position using smooth coordinated moves keeping spine in alignment
2. PAD VOIDS BETWEEN PATIENT AND LONG SPINE BOARD	□ □ □	A. Select and use appropriate padding B. Place padding as needed under the head C. Place padding as needed under torso
3. IMMOBILIZE BODY TO THE LONG SPINE BOARD	□	A. Strap and secure body to board ensuring spinal immobilization, beginning at shoulder and working toward feet
4. IMMOBILIZE HEAD TO THE LONG SPINE BOARD	□ □	A. Using head set or place rolled towels on each side of head B. Tape and/or strap head securely to board, ensuring cervical spine immobilization
5. REASSESS	□ □	*A. Reassess distal circulation, sensation, and motor function *B. Assess patient response and level of comfort

IMMOBILIZATION OF CERVICAL SPINE

PROCEDURES		CRITICAL SKILL
1. ESTABLISH AND MAINTAIN IN-LINE IMMOBILIZATION	□ □ □	A. Place head in a neutral, in-line position unless patient complains of pain or the head is not easily moved into position B. Place head in alignment with spine C. Maintain constant manual in-line immobilization until the patient is properly secured to a backboard with head immobilized
2. ASSESS CSM	□	*A. Assess distal circulation, sensation, and motor function (on all extremities)
3. ASSESS CERVICAL REGION AND NECK	□ □	*A. Inspect and palpate for injuries or signs of injuries B. Remove clothing or jewelry as necessary
4. BANDAGE ANY WOUND	□	A. Any neck wounds
5. APPLY CERVICAL SPINE IMMOBILIZATION	□ □ □ □ □ □ □ □ □ □ □	A. Apply properly sized collar or manual immobilization <u>One piece C-collar</u> A. Select proper sized collar B. Apply collar C. Ensure that patient's head is not twisted during application D. Ensure airway is open after placement <u>Two-piece C-collar</u> A. Select proper sized collar B. Apply rear section to back of neck C. Center rigid support on spine D. Apply front section (overlaps rear section) E. Ensure chin rests in chin cavity F. Secure collar with Velcro straps G. Ensure airway is open after placement
6. SECURE HEAD TO APPROPRIATE IMMOBILIZATION DEVICE	□ □ □	A. Immobilize patient to appropriate immobilization device B. Use head set or place rolled blankets or towels on each side of head C. Tape and or strap head securely to appropriate immobilization device
7. REASSESS	□ □	*A. Reassess distal circulation, sensation, and motor function *B. Assess patient response and level of comfort

BURNS

PROCEDURES		CRITICAL SKILL
1. DETERMINE BURN TYPE	□	*A. Determine type ▪ Thermal ▪ Chemical ▪ Electrical
2. DETERMINE BODY SURFACE AREA	□	*A. Determine Body Surface Area (BSA) using rule of nines
3. BURN CARE (All Types)	□	*A. Remove patient from source of burn and prevent further contamination
	□	*B. Consider the type of burn and stopping the burning process initially with water or saline.
	□	C. Do not flush with water unless they involve an area less than 9% of the total body surface area)
	□	D. Remove smoldering clothing (do not remove any clothing that is melted onto the skin) jewelry
	□	*E. Continually monitor the airway for evidence of closure
	□	F. Prevent further contamination. Keep the burned area clean by covering it with a dressing. Cover partial- and full-thickness burns with dry clean dressings. In most cases place dry, sterile dressings onto the burned area.
	□	*G. Do not use any type of ointment, lotion or antiseptic
	□	*H. Do not break blisters
	□	*I. Ensure patient does not get hypothermic
	□	J. If eyes or eyelids have been burned, place dressings or pads over them. Moisten these pads with sterile water if possible. Both eyes will be covered.
	□	K. If serious burn (partial or full-thickness burns) involves the hands or feet, always place a clean pad between toes or fingers when completing the dressing.

4. CARE FOR CHEMICAL BURNS	□ □ □ □ □ □ □	A. Protect yourself from exposure to hazardous materials B. Wear gloves, eye protection, and respiratory protection *C. Flush the burned area for at least 20 minutes. (If possible and it can be done quickly, try to identify any chemical powders before applying water) D. Apply a dry, clean dressing. E. If dry lime is the agent causing the burn, do not flush with water. Instead use a dry dressing to brush the substance off the patient's skin, hair, and clothing. F. Remove any contaminated clothing or jewelry. G. Once this is done, you may flush the area with water. H. Use caution not to contaminate uninjured areas when flushing or brushing
5. CARE FOR ELECTRICAL BURNS	□ □ □ □ □	*A. Ensure safety before removing patient from the electrical source *B. If the patient is still in contact with the electrical source or you are unsure, do not approach or touch the patient, contact power company *C. Monitor the patient closely for respiratory and cardiac arrest D. Treat the soft tissue injuries associated with the burn *E. Look for both an entrance and exit wound
6. REASSESS	□	*A. Reassess level of consciousness (AVPU), respiratory status, and patient response

****Multiple burns will be treated as per procedures listed in patient assessment.**

EARLY OR SUPERFICIAL FROSTBITE

PROCEDURES		CRITICAL SKILL
1. ASSESS FOR FROSTBITE AND COLD INJURIES	□	*A. Patient exhibits signs and symptoms of frostbite or cold injuries
2. ASSESS FOR EARLY OR SUPERFICIAL FROSTBITE	□ □ □ □	A. Blanching of the skin – palpitation of the skin in which normal color does not return B. Loss of feeling and sensation in the injured area C. Skin remains soft D. If re-warmed, patient will feel a tingling sensation
3. TREAT EARLY OR SUPERFICIAL INJURY	□ □ □ □	*A. Remove the patient from the environment B. Protect the cold injured extremity from further injury *C. Remove wet or restrictive clothing D. Do not rub or massage E. Do not re-expose to the cold
4. REASSESS	□	*A. Reassess level of consciousness (AVPU), respiratory status and patient response

LATE OR DEEP COLD INJURY

PROCEDURES		CRITICAL SKILL
1. ASSESS FOR FROSTBITE AND COLD INJURIES	□	*A. Patient exhibits signs and symptoms of frostbite or cold injuries
2. ASSESS FOR LATE OR DEEP COLD INJURY	□ □ □ □ □	A. White, waxy skin B. Firm to frozen feeling upon palpitation C. If thawed or partially thawed, the skin may appear flushed with areas of purple and blanching or mottled and cyanotic D. Swelling may be present E. Blisters may be present
3. TREAT LATE OR DEEP COLD INJURY	□ □ □ □ □ □	*A. Remove the patient from the environment B. Protect the cold injured extremity from further injury *C. Remove wet or restrictive clothing D. Remove jewelry E. Cover with dry clothing or dressings *F. Do not: ▪ Break blisters ▪ Rub or massage area ▪ Apply heat ▪ Re-warm ▪ Allow the patient to walk on the affected extremity
4. REASSESS	□	*A. Reassess level of consciousness (AVPU), respiratory status and patient response

MILD HYPERTHERMIA (HEAT)

PROCEDURES		CRITICAL SKILL
1. ASSESS FOR HYPERTHERMIA	□	*A. Patient exhibits signs and symptoms of hyperthermia: ▪ Redness ▪ Muscular cramps ▪ Weakness or exhaustion ▪ Rapid heart rate ▪ Dizziness or faintness ▪ Altered mental status to unresponsive
2. PREVIOUS INTERVENTIONS	□	*A. Inquire about previous interventions attempted
3. ASSESS FOR MILD HYPERTHERMIA (HEAT EXHAUSTION)	□	*A. Check skin for: ▪ Normal to cool temperature ▪ Pale ▪ Moist
4. TREATMENT FOR MILD HYPERTHERMIA	□ □ □ □ □	*A. Place in a cool environment *B. Cool patient by fanning C. Put in supine position with legs elevated *D. Offer drinking water if patient is responsive and not nauseated E. If the patient is unresponsive or is vomiting, transport to the hospital
5. REASSESS	□	*A. Reassess level of consciousness (AVPU), respiratory status and patient response

SEVERE HYPERTHERMIA

PROCEDURES		CRITICAL SKILL
1. ASSESS FOR HYPERTHERMIA	□	*A. Patient exhibits signs and symptoms of hyperthermia: ▪ Redness ▪ Muscular cramps ▪ Weakness or exhaustion ▪ Rapid heart rate ▪ Dizziness or faintness ▪ Altered mental status to unresponsive
2. PREVIOUS INTERVENTIONS	□	*A. Inquire about previous interventions attempted
3. ASSESS FOR SEVERE HYPERTHERMIA (HEAT STROKE)	□	*A. Check skin for: ▪ Hot temperature ▪ Red ▪ Dry or moist
4. TREATMENT FOR SEVERE HYPERTHERMIA	□ □ □ □ □ □	*A. Place patient in a cool environment *B. Wet patient skin by applying water from sponge or wet towels and fan C. Put in supine position with legs elevated *D. Offer drinking water if patient is responsive and not nauseated *E. Apply cool packs to neck, groin and armpits *F. Transport immediately
5. REASSESS	□	*A. Reassess level of consciousness (AVPU), respiratory status and patient response

SPINAL IMMOBILIZATION SEATED PATIENT VEST TYPE

EXTRICATION DEVICE

PROCEDURES		CRITICAL SKILL
1. Immobilization of C-Spine	□ □	*A. Directs assistant to place/maintain head in the neutral, in-line position B. Directs assistant to maintain manual immobilization of the head
2. INITIAL ASSESSMENT	□ □ □	*A. Check for distal circulation, sensation, and motor function *B. Measure and apply appropriately sized extrication collar. *C. Directs assistant to continue with maintaining manual immobilization of head.
3. Applying Immobilization Device	□ □ □ □ □ □	A. Positions the device behind the patient *B. Secure the device to patients' torso C. Evaluates torso fixation and adjust as necessary D. Evaluates and pads behind the patient's head as necessary. *E. Secures the patients head to the device F. Secures leg straps prior to moving patient.
4. Moving To Long board	□ □	D. Moves the patient to a long board E. Removes straps at legs to enable patient to be properly strapped to the long board.
5. ASSESS FOR CIRCULATION	□	D. Reassesses for distal circulation, sensation, and motor function in each extremity.

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5. ASSESS FOR CIRCULATION	□	D. Reassesses for distal circulation, sensation, and motor function in each extremity.

National Standardized Surface Mine Rescue Contests Rules

Hazardous Materials Rules

MSHA APPROVAL DATE

Hazardous Materials Rules

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Hazardous Materials Rules Committee Membership

A special thanks to Hazardous Materials Rules Committee membership for their valuable assistance in preparing this chapter of the Rule Manual. This Committee is comprised of representatives from the following organizations:

Russell Byers, Ohio Department of Natural Resources

David Crafton, Mine Safety and Health Administration

James Davis, Nevada Gold Mines

Ryan Fox, Campbell County Fire Department (Committee Lead)

David Tant, Carmeuse Mining Company

General Rules

Hazardous Materials rules were designed as a training tool for rescue teams. They were developed for contest purposes only. Discretion should be used in actual mine emergency situations.

Each rescue team must consist of 5 persons who are employees of the mining companies or persons who are designated or contracted by mining companies and trained to perform rescue activities. Team will consist of 4 members and a captain, which will be designated by the team. Captain will be in charge of the hazmat scene and rescue operation. The captain will perform no other work during the problem.

All equipment used during the rescue contest must be up to date according to the manufacture's guidelines.

Rescue teams will utilize the APIE response model for hazardous materials incidents, Analyze, Plan, Implement, and Evaluate.

For the purposes of the contest, all hazardous materials/WMD items will be properly labeled and stored in the correct containers.

Written Examination

A 15-question written exam will be given to the 5 members of the team and scores will be combined for a total score. Each wrong answer will be a 1-point deduction. Questions will be taken from "Essentials of Fire Fighting, 7th Ed. International Fire Service Training Association. Chapters 24- Analyzing the Incident, Chapter 25- Action Options and Response Objectives, Chapter 26 – Personal Protective Equipment, Product Control, and Decontamination. Pages 1047- 1382.

1. During isolation, contest officials will administer a written examination to the five team members.

2. Answers will be multiple choice with only three choices. "None of the above" will not be used as one of the choices. The answers will be verbatim from the text of the chapters referenced above and will not be intentionally misspelled.

3. A maximum of 20 minutes will be allowed for the team members to take the test.

4. No wireless communication or electronic device, including Apple watches or similar devices, will be permitted in the testing area.

5. There will be no discussion during the time that written examinations are being taken.

6. Team members from the same team will not be permitted to sit at the same table while taking the written examination.

Minimum PPE Requirements for Team Members:

- Hard Hat
- Safety Boots
- Gloves
- Chin Strap
- Eye Protection

Minimum Equipment Supplied by Team:

- Self-Contained Breathing Apparatus (SCBA) (Suitable for hazardous atmospheres)
- Air monitoring detector (Approved for hazardous atmospheres)
- Caution Tape
- Binoculars
- CO2 Air horn
- Lock out, tag out, blank out kit. (Used for multiple energy sources)
- Communication system (Approved for hazardous locations)
- Emergency Response Guidebook (ERG) 2020 version
- Approved Breathing Apparatus for Patient
- Stretcher (wheeled or carried) w/minimum of three straps

Team Evacuation Signals (Air Horn)

- Cease operations/ All Quiet: one long blast (3 seconds)
- Evacuate the area: three short blasts (one second each)
- Resume operations: one long blast and one short blast

Discounts

1. Failure to lock and tag all energy sources from hazmat area__5 Discounts

   All energy sources must be found, identified, lock and tagged out to prevent injuries to team, further injuries to patients, and bystanders

2. Failure to establish communications before entering threat zone__2 Discounts

   Communications between the rescuers and the command area must be established before leaving safe zone.

3. Failure to approach hazmat scene up wind, uphill, or up stream of contaminated area__5 Discounts

   All teams must approach any hazmat scene up wind of the area to keep rescuers safe from any contaminants that can be carried by the wind and avoid any additional hazards it may cause.

4. Failure to identify the hot, warm, and cold zone__10 Discounts

   Captain shall determine by the identification of the hazardous material the three zones to maintain safe area for the command post and a decontamination area in the warm zone.

5. Failure to locate any other hazards at the scene that could injury rescuers__5 Discounts

   Any hazard that can cause injury to rescuers other than the hazardous material itself

6. Failure to identify and ignition sources at the hazmat scene__5 Discounts

   Ignition sources will consider as open flames, electrical sources, heated surfaces, internal combustion engines, generators, cigarettes/ other smoking material, cameras/ cell phones, road flares, flashlights, non- permissible radios.

7. Failure to isolate the hazmat area from unauthorized persons__10 Discounts

   Area must be dangered off, caution tape, cones, or fencing, to prevent anyone other than rescuers from entering the warm or hot zone inside of the cold zone. Anyone within the containment area must be removed and decontaminated if required.

8. Failure to identify hazardous material container__5 Discounts

   All hazardous materials containers must be identified from within the cold zone from the identification placards on the material containers.

9. Failure to don appropriate PPE for the identified chemical hazard__15 Discounts

   Rescuer must wear the appropriate PPE that is recommended for the hazardous material/ materials that has been identified by the team

10. Failure to properly don SCBA__5 Discounts

    SCBA must be donned following proper donning procedures and a mask tested for airtight fit

11. Failure of captain to check SCBA before rescuers enter the warm zone__2 Discounts (Each rescuer)

    Captain must check each rescuer to assure mask tightness, properly donned, and tank pressure.

12. Failure to record all identified materials in a hazardous materials log __2 Discounts

    All materials identified must be recorded into a log sheet, including name of hazardous material, UN number, placard, and container information that can be used by all rescuers that are that are on scene including back up rescuers

13. Failure to identify source of leak at hazmat site__5 discounts

    All sources of leaks must be identified at the hazmat site for containment and to remove additional hazards

14. Failure to locate any storm drains or sewer access covers within the hot zone__2 Discounts

    All drains and surface access covers that lead to underground areas must be located to prevent further contamination that could move past the containment area

15. Failure to properly protect storm drains/ underground access from being contaminated by hazardous materials__8 Discounts

Any access areas that can lead to storm drains or other underground access areas must be properly protected by sealing/ diking/ absorption material so that contamination can not spread to areas outside the hot zone

16. Failure to protect patient within the hot zone__10 Discounts

    An apparatus/CAREvent must be placed on any patient found within the hot zone and remain on until taken to cold zone

17. Causing further injury to patient from mishandling/ excessive movement__5 Discounts

    Any excessive force/ dropping of the patient or handling in a way that would cause further injury to the patient

18. Failure to promptly remove patient from threat zone to safe zone__10 Discounts (Delay)

    Once patient has been reached, apparatus/CAREvent donned, and packaged the patient must be immediately taken to safe zone. No other work can be done by team till patient has been removed

19. Failure to properly decontaminate patient before leaving decontamination area__10 Discounts

20. Failure of team members to decontaminate before leaving decontamination area__10 Discounts

CAREvent Donning Procedures

A. **Procedures for getting under oxygen**

1. Bring mask close to face, check cylinder pressure and open cylinder valve. Face mask straps may be placed over the head and the mask allowed to hang loosely prior to opening cylinder valve. This will suffice for bringing the mask close to the face.

2. Put on facepiece properly and tighten straps; observe gauge.

3. Check gauge and operation, straps, etc.

4. Check cylinder pressure every five (5) minutes.

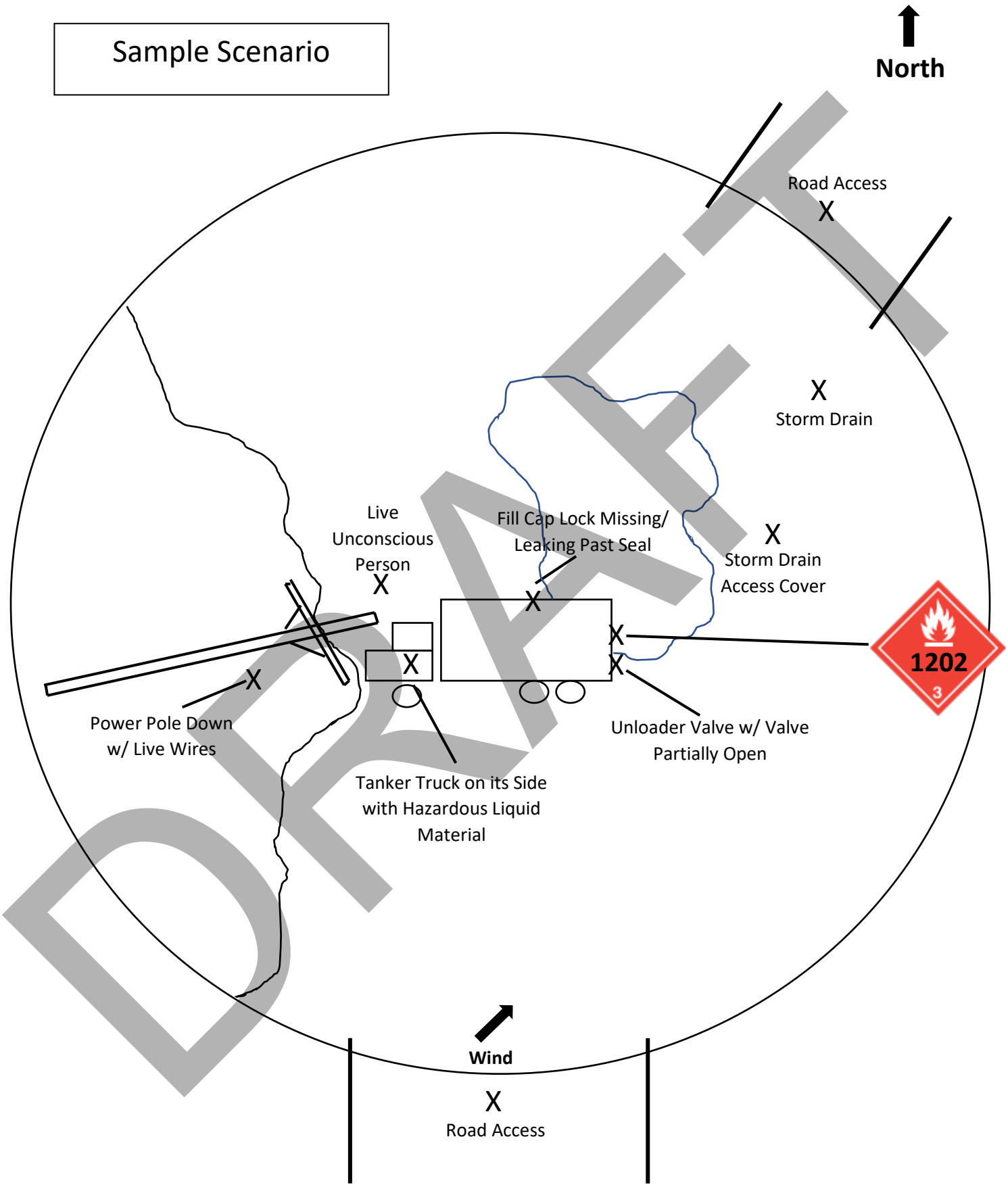
NOTE: CAREvent® DRA cylinder and regulator must be transported and used in a protective case to prevent damage.

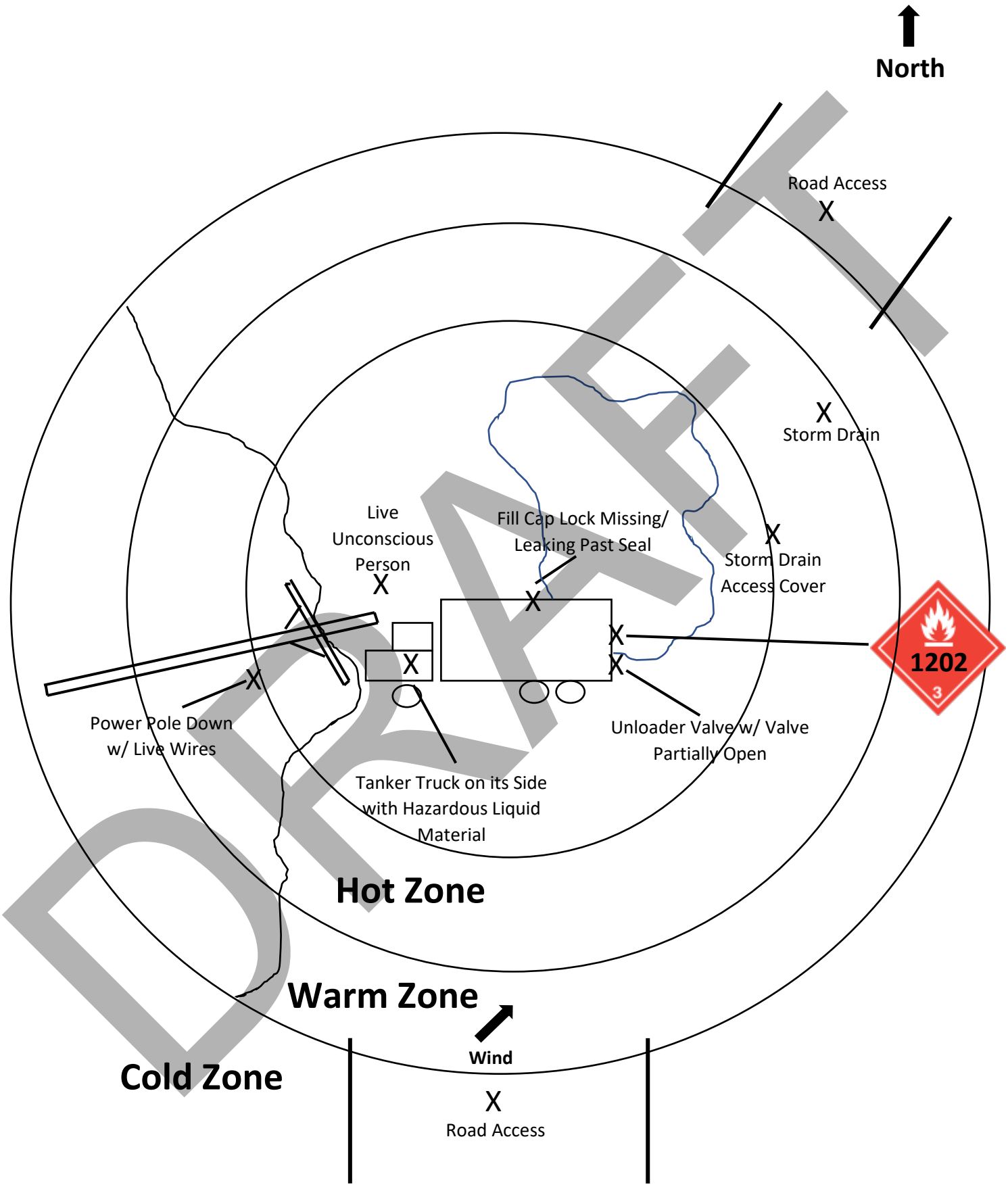
SCBA Donning Procedures

1. Lay out equipment
2. Loosen the shoulder straps
3. Open cylinder valve fully
4. Look behind you
5. Carefully lift the SCBA over your head on to your shoulder, hold shoulder straps on your elbow and slide the SCBA slowly down your back
6. Ensure proper resting on your shoulder & comfort to your back
7. Fasten waist belt properly
8. Adjust shoulder straps
9. Put on facemask, fit on the face properly. Adjust the head straps, from bottom to top
10. Cover front of mask with hand and breathe in to assure proper tightness
11. Connect the facemask with second stage regulator
12. Breathe comfortably and ensure you are getting sufficient air supplied in the facemask through your air cylinder

DRAFT

Sample Scenario




North
Road Access
Storm Drain
Live
Unconscious
Person
Fill Cap Lock Missing/
Leaking Past Seal
Storm Drain
Access Cover
1202
3
Power Pole Down
w/ Live Wires
Unloader Valve w/ Valve
Partially Open
Tanker Truck on its Side
with Hazardous Liquid
Material
Hot Zone
Warm Zone
Wind
Cold Zone
Road Access
DRAFT

Upon arrival at the scene, the captain must determine (by the hazmat placard) the know substance that has been spilled. The captain will use the binoculars to identify from a distance (Rule 8) Once the container and material have been identified the captain must determine and set the zones (hot, warm, and cold) (Rule 4). Rescuers must establish communications with the command center (Rule 2) and don the apparatus (which the captain must check) (Rule 10, Rule 11) The captain must identify the possible ignition sources at the scene. (Rule 6). The captain will find downed electrical lines and hot engine. The captain can ask to have the power shut off to the electrical lines. The captain will advise the rescuers to block off the two road access areas from the cold zone. (Rule 7) The rescuers must approach the scene from the South side access road. (Rule 3) Rescuers may now proceed to the hot zone.

Rescuers will approach the truck to identify where the spill is coming from. (Rule13). The rescuers will find at the back of the truck an unloader valve partially open (Team can close the valve) (Rule 13). At this point the team can scene the extent of the spill. Two members can continue to check the vehicle for other leaks and two team members can start a dike for containment.

The team will find a storm drain and a storm drain access cover (Rule 16) (which they must dike) Two team members will continue to locate other leaks at the scene. Team must walk around the spill area and not through it. (Rule 14) They will find a fill cap with the lock missing and leaking past the seal. Team must place a lock on the fill cap to stop the leak. (Rule 13, Rule 1).

Team will find an unconscious live person. All team members must assist the patient recovery. (Rule 17) Team must place breathing apparatus on the patient (Rule 18) and immediately take to the warm zone to determine if decontamination is needed (none is needed) The patient can now be taken to the command center. Once patient has been delivered to the command center the team must return and continue the diking of the spill. Once containment has been complete and logs finished, they can stop the clock at any time.

ROPE RESCUE
RULES

National Standardized Surface Mine Rescue Contest Rules

Rope Rescue Rules

MSHA APPROVAL DATE

Ropes Rescue Rules Committee Membership

A special thanks to the Ropes Rescue Rules Committee membership for their valuable assistance in preparing this chapter of the Rule Manual. This Committee is comprised of representatives from the following organizations:

David Crafton, Mine Safety and Health Administration

Danielle Hemmert, Genesis Alkali LLC

David Leverknight, Mine Safety and Health Administration

Brian Malott, West Virginia University (Committee Lead)

Kayla Schipman, ARCH Resource

Rope Rescue
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The following rules are to be utilized as a guideline for rescue teams. They are developed for contest purposes only. Discretion and Team safety is a priority and should be used in actual mine emergency situations. At any point throughout the scenario there is an unsafe act about to occur the judges will stop the contest and correct the unsafe act.

Each Team must consist of mining companies or persons who are designated or contracted by mining companies and trained to perform rescue activities.

Equipment

Teams will be required to use their own safety equipment but must be inspected by judges prior to the start of the evolution. Rescue teams will be supplied with rescue equipment required for the scenario that is not in the minimum requirements. Examples would include but are not limited to class III harnesses, rope rescue gloves, eye protection, fall protection, etc.

Minimum Equipment Required

- Hard hat with suspension and chin strap
- Work gloves
- Eye protection
- Boots with steel toes
- Optional equipment:
    - Intrinsically Safe Radio
    - Lights

Rope Rescue Equipment

Mine Rescue Teams will be required to use their team rope rescue equipment. Rope Rescue equipment not in minimum requirements will be available for viewing prior to the competition. Anchors will be available and identified to the team prior to starting an evolution. All teams must supply enough equipment to support a rescue that includes a minimum of a two-person haul. This may include but not limited to a High-Line rescue.

Minimum Rescue Equipment Requirements

Locking Carabiners

- Auto Locking
- A minimum of a two stage (2) locking
- General use (rated of 40kn)

Control Decent Device

- Variable-friction descent control device for rescue systems and rappels
- Incorporates a high efficiency pulley with an integral rope-locking mechanism (ratchet) for a haul system
- Built-in becket allows cleaner rigging and more efficient pulley systems
- Allows main line and belay line rigging to be mirrored or twin-tensioned
- Functions as both a lowering brake and as a ratcheting pulley for raising
- If utilizing a non-mechanical control decent device; it must include a progress capture device. (IE prusik)

Synthetic Fiber Kernmantle Rope Static Line

- Kernmantle type design
- Block and Creel Construction
- 2x- Min of 200 feet in length
- Rated for a two-person load (600 LBS)

1 inch Tubular Nylon Webbing (Varying Lengths)

- Must be looped and doubled at minimum for anchors
- Configured or tied in a manner to achieve over 9,000 LBS breaking Strength https://www.cmcpro.com/one-inch-webbing-anchors-minimum-breaking-strength/

Manufactured Anchor straps of various lengths

- Must meet min manufacturing requirements of rescue rated shock load 9000 pounds breaking strength

Single/ Double Pulley

- General Use Rated
- Swivel Omni Pulley (or like)
  Double Not rated for loading single sheave (must have two ropes loaded to use)
- Double pulley without the side lock may load single sheave

Cam Ascender

- General use rated

Handled Ascenders

- Technical use rated
- Used for one person load only

Prusik Cords

- Two different lengths (must use tandem if catching or holding a load)
- Must be used in a general use rated configuration
- Pre-sewn and/or double fishermen

Patient Packaging Device

- Tie in system for easy patient packaging
- Able to use for vertical or horizontal rescue
- Stabilize patient for proper retrieval.

Tripod

- Must extend from 6' to 10' high at the anchors. When at full extension this tripod allows you to bring the patient in a stretcher completely out of the hole. It is rated to handle an NFPA rescue load. It utilizes a chain/rope through the feet to provide greater strength and stability.

General

- Any scenario and evaluation will derive core principles from the following reference material:

CMC Field Guide Application (Free Download)

Current CMC Rope Rescue Manual

a) As reference for training only
b) Not to be used as discounts for team members if the information is not in field guide
c) Rescue use of beyond what is required in the scenario will not be discounted against team members

Team Procedure

- At no point will any team members be suspended from ropes in any unsafe manner and not using proper ropes and knots as outlined in CMC Field Guild under section Rope Rescue Field Guide.
- Each team participating shall be made up of (6) rescuers who will be wearing proper personal protection equipment (as defined in previous section). Also available will be one Incident Commander/Captain, and one alternate/trainer.
- The team members participating must be registered before leaving isolation.
- Mine Rescue Teams will not be allowed to possess reference material after they leave isolation.
  Note: This includes the CMC Field Guide
- Establish team assignments which will include but aren't limited to; hauling/lowering, belay, patient packaging, and edge attendant.
- The safety of all members in any situation at all times
- Evacuation and safety of known casualties
- Prevent further harm to known casualty while on rope rescue system
- No first aid or casualty care will be required; however, patient packaging may be required to transport injured patients to safety
- Teams will be given 10 min prior to starting the clock to perform inspection of the equipment in the presence of the judges to assure the equipment is in good working order. Any equipment found not to be in safe working order will be removed from use by the judges.
- Once clock has started teams will need to complete rescue that Contest Director has chosen, or by general rule guideline of time constraints.
- There will be a minimum of two Simulation Judges per competing team.
- Simulation Judges will be competent in the judging of Rope Rescue simulations.
- Simulation Judges will keep accurate start and finish times on the Score Cards.
- The Rope Rescue Lead Judge will ensure the Rope Rescue simulation is reset in an identical manner for each team
- Mine Rescue Team Members are encouraged to carry out tasks as safely, efficiently, and quickly as they normally would during an actual mine emergency at their home jurisdiction. However, any unsafe tasks observed by any Judges or Safety Officers will result in a pause in the evolution until the action can be corrected. Note: during this time the time clock will continue to run without delay
- Verbal communication of tasks between the Mine Rescue Teams and Judges will not be required or encouraged to remove any disadvantage to non-English speaking teams
- In the event of a tied score the Mine Rescue Team with the faster completion will break a tie

Incident Commander/Captain

- Responsible for overall safety of each team member
- Responsible for maintaining control of each team member
- Assess the situation and develop a plan in consultation with the incident commander when necessary
- Provides clear and concise direction to each team member
- Determines and identifies priorities of each team member

Hazards

- Hazards to the safety of the Mine Rescue Team at the site must be eliminated and reported to the Incident Commander prior to proceeding. Safety takes priority over any other task. Hazards include, but are not limited to:
    - Unsafe or damaged equipment
    - Water of any quantity on rope rescue equipment
    - Fire and or electrical hazards
    - Machinery
- Members must protect against the risk of falling over any edges or holes. Teams must designate by flagging tape or rope to indicate the area near the edge/hole that may be entered only by personnel on a belay or safety line. When a rescuer crosses the line, fall protection measure are required. All other personnel at the scene remain on the safe side of the line.

Anchors

- Anchors will be established and utilized by the Mine Rescue Team. If no suitable anchors can be established within the specified radius a tripod will be available to establish a temporary anchor.
- The anchors will be utilized in a manner where the safety factor never falls below a safety factor of 10:1.
- Any software attached to an anchor(s) must be done in a manner it can take a force of no less than 9000 LBS.
- Main line and belay lines shall not be secured to the same software on one anchor.

Lowering Systems

- Some rescue teams use single rope technique (SRT) for single-person loads—climbers use single rope technique exclusively. A single rope is more than adequate to maintain a good safety factor and single rope technique adds safety through simplicity (i.e., it requires half the rigging), but SRT does not pass the "critical point" (45 degree decent)

- Double rope technique (DRT) is the most common method of supporting rescue loads (i.e., raising or lowering two people). One rescuer normally controls the descent of the load and a second rescuer belays the load with the goal of catching it should the main line fail (an almost unheard-of occurrence). The resulting two-rope system clearly passes both the "critical point test" and the "whistle test."

- If one rope is used to lower rescuers or victims over 45 degree it is required a belay line be a second means of safety and an attendant must tend the belay line while any personnel are on the ropes.

- The rescuer lowering the load uses a descent control device. The belayer uses tandem Prusiks or a device that is designed to catch a rescue load. It is important that the belayer minimizes slack in the belay line to avoid a shock load in the event the main line fails.
- Note that some descent control devices (e.g., CMC's MPD) are designed to catch the load if the rescuer lets go of the rope.
- If wet conditions exist, the 540 decent device shall not be utilized due to its capability of failing as safety belay.

Mechanical Advantage System/ Haul System

- The term "mechanical advantage" is a measurement of how much your rope and pulley system will leverage the force that you put into them.
- At a minimum a 3:1 mechanical advantage system will be required for utilization in the scenario.
- Systems will be required to have a safety line (belay) for any haul system over 45 degree angle.
- The term “shock load” occurs when a load is quickly jerked in any direction or if it is allowed to free-fall before the rigging catches it. Rapid acceleration increases the force put on the rigging system, and if the acceleration is too severe, it can overload the capacity of the system.

Note: A shock load is considered an uncontrolled fall of 6 feet or greater.

- Teams may use mechanical devise in system as pulley, IE MPD/Clutch.
- Prior to any team member loading a lowering or haul system, a safety check will be required by the team Captain to ensure the system is safe. During the safety check every carabiner in the system will be observed for possible side loading or unlocked. If either situation is observed, it must be immediately corrected.
- The lowering, hauling, and belay system but be tested to ensure the load would be caught if all members of the teams were to let go of the rope.

- The haul team will and cannot haul or lower the system with a rescuer if they can't communicate to the IC/Captain
- Communication may be with radios, Voice commands, or can be accomplished through sight. (lights) Commands must be explained to judge prior to entrance on field.

Discounts

Scoring of each task will be scored by more than one Simulation Judge independently. Simulation Judges will create a consensus score based on the independent observations. The Rope Rescue Scenario will be judged using a discount point system with teams receiving points for each task that is not completed or partially completed. and discount points will apply.

Scorecard Discounts

- Any unsafe act that judge must stop scenario to correct. _____50 pts
    - At any time if any Judge or Safety Officer feels that a team member's safety may be compromised the action will be stopped
- Failure to establish mitigation from falling. _____25 pts
    - Defining the safe area of edge
- Failure to establish communication prior to raise/lower. _____2 pts
    - Communication may be with radios, Voice commands, or can be accomplished through sight. (lights) Commands must be explained to judge prior to entrance on field.
- Unable to identify appropriate anchor and attachment. _____10pts
    - The anchors will be utilized in a manner where the safety factor never falls below a safety factor of 10:1.
    - Any software attached to an anchor(s) must be done in a manner it can take a force of no less than 9000 pounds.

- No use of edge protection or padding if warranted. _____2pts
- Improper use of mechanisms for load and action. _____10pts
    - IE: Did not use prussik with belay, did not set up proper 3:1 rigging etc.
- Incorrect use of knots for the use and/or did not dress knot appropriately. _____5 pts
    - For each infraction
- If using a prussik; a minding pulley (or like) must be used to secure load. _____5 pts each
    - For each infraction
- Rope rigging system must be within safe working load. _____50 pts

    - Any software attached to an anchor(s) must be done in a manner it can take a force of no less than 9000 pounds
    - Webbing not set up correctly for anchor use
- Improper Patient packaging used to ensure safe operations while suspended on rope rescue systems. _____5 pts
    - Patient must be secured in a fashion to not compromise rescue.
    - If vertical must use proper equipment designed to vertical lift and lower and patient must be properly secured inside equipment.
    - Patient should not sustain further harm inside equipment
- At any time if more than one anchor is needed to attach any type of system to said anchor, than a load sharing self-equalizing knot must be applied. _____10 pts
- Safety checks not completed prior to move. _____20pts
    - Checks all knots
    - Carabiners are checked
    - Capture device check
        - Belay catch
        - Mechanical advantage catch
        - Triple wrap on prusik
- Failure to maintain slack or take up as needed on belay. _____10pts
    - Belay must have min slack to reduce shock load if main line fails.
- Failure to identify a proper braking mechanism. _____10pts
    - In wet conditions 540 will fail as a safety device and another braking mechanism must be utilized.
- Unable to complete the move in time allotted. _____20pts
- Failure to maintain a smooth load movement during raise and lower. _____10pts
    - Raise and lower should have minimal movement and not jogging of patient or rescuer
    - Patient if lowered out of a window should not slide or slack back against building or object
- Did not check for overhead hazards prior to move. _____10 pts
- Team members not wearing proper PPE for rescue. _____1pt
    - For each infraction
- System was shock loaded at 6 feet or greater. _____10pts
- Tripod used, and belay was not set up independently. _____10 pts
    - Mainline will be utilized with tripod
    - Another anchor will be utilized with belay to reduce shock load to belay line
- Equipment was not treated with care. _____1 pt for each infraction
    - Side loaded carabiner
    - Equipment tossed and hit ground
    - Ropes that are stepped on
    - Ropes that are not edge protected

    - Side loading double pulley, pulleys not rated for loading single sheave (must have two ropes loaded to use)
    - Did not secure with a safety on a break bar or rescue 8
    - Did not place MPD in park and unmanned the device
- Failure to maintain team edge management. _____10pts
    - Teams are not protected from going over an edge
    - Teams are not tied off and going within 10 ft of edge
    - Teams are not wearing harness in the area prior to looking at edge/decent
- Patient cannot talk, direct, or assist unless stated in problem. _____2 pts
    - Reactionary or unintentional movement by the patient should not be discounted
    - Handling of a patient by a team or team member in such a manner that could compromise condition of the patient.(standing over patient to secure to patient packaging device.)

DRAFT

Rope Rescue Scenario

General

The rope rescue task will be carried out off site at the Fire Department Station #3 training tower. This scenario will involve a scenario inside the tower and out of any unforeseen environmental elements.

Location

Fire Department Station #3 (Coordinates: N 37° 48'34.7" W 81° 10'44.2")

Training tower, equipment photos and videos will be available for visual familiarization purposes no later than 1 month prior to the competition.

Team safety is a priority: at any point throughout the evolution there is an unsafe act about to occur the judges will stop the evolution and correct the unsafe act. The timing device will not be stopped during this time frame. Every team member must utilize fall protection within 10 feet of any edge or hole within the confines of training tower.

Scope

- Team preparation and donning of safety equipment and harnesses.
- Team preparation of rope rescue equipment, rigging, and patient packaging systems to be taken to the training tower.
- Establish team assignments which will include but aren't limited to; hauling/lowering, belay, patient packaging, and edge attendant.

Victims/Casualties

- No first aid or casualty care will be required, however, patient packaging may be required to transport injured patients to safety

Location Reporting

- Mine rescue teams must be assigned a target destination/task and time limit by the Incident Commander and Assistant. The next report to the Incident Commander must come from the assigned destination or following completion of the assigned task

Anchors

- Anchors will be established and utilized by the Mine Rescue Team. If no suitable anchors can be established within the specified radius a tripod will be available to establish a temporary anchor.
- The anchors will be utilized in a manner where the safety factor never falls below a safety factor of 10:1.
- Any software attached to an anchor must be done in a manner it can take a force of no less than 9000 LBS.
- At any time if more than one anchor is needed to attach any type system to said anchor, than a load sharing self-equalizing knot must be applied.
- If 1 inch tubular webbing is used at an anchor, the webbing shall be a least looped and doubled for added safety

Mechanical Advantage System/ Haul System

- In most cases, raising a rescuer and/or patient is a last resort, because overcoming gravity requires significantly more effort than lowering. That said, there certainly are times when raising is a better choice than lowering. These include when raising the load a short distance will avoid a very long lower, when your ropes aren't long enough to reach a safe landing, when there are additional hazards below, when the only egress is above you, when communication will be difficult, etc.

- RopeRescueTraining.com provides details on 1:1, 2:1, 3:1, 4:1, 5:1, 6:1, and 9:1 systems, although the most common systems used by rescuers are 1:1, 3:1, 5:1, and occasionally 9:1.

Tasks

- Mine Rescue Team Members are encouraged to carry out tasks as safely, efficiently, and quickly as they normally would during an actual mine emergency at their home jurisdiction. However, any unsafe tasks observed by any Judges or Safety Officers will result in a pause in the evolution until the action can be corrected. Note: during this time the time clock will continue to run without delay.
- Verbal communication of tasks between the Mine Rescue Teams and Judges will not be required or encouraged to remove any disadvantage to non-English speaking teams.
- The components of the rope rescue portion will be building a lowering system, hauling system, belay line (for safety), and patient packaging which will be carried out in a training tower at the previously state coordinates. Time will start when the location of the injured victim is communicated to the participating Mine Rescue Team and stopped when all victim(s) and rescuers are hauled to safety. Judges will be evaluating key aspects of the rope rescue skills.

DRAFT

Position Number

Team Number

WRITTEN EXAMINATION

A

Discounts

1. For each incorrect answer. . . . . 1 __

Total Discounts __ __ __ __

Judge

Judge

Scorecard Examiners

NOTES

Team Number

Field Number

SURFACE NATIONAL MINE RESCUE CONTEST

Judges Discount Card

B

Judge

Judge

Judge

Judge

Scorecard Examiners

Recorders

	Discounts
1. Any unsafe act that judge must stop scenario to correct. o At any time if any Judge or Safety Officer feels that a team member's safety may be compromised the action will be stopped	50 discounts
2. Failure to establish mitigation from falling. o Defining the safe area of edge	25 discounts
3. Failure to establish communication prior to raise/lower. o Communication may be with radios, Voice commands, or can be accomplished through sight. (lights) Commands must be explained to judge prior to entrance on field.	2 discounts
4. Unable to identify appropriate anchor and attachment. o The anchors will be utilized in a manner where the safety factor never falls below a safety factor of 10:1. o Any software attached to an anchor(s) must be done in a manner it can take a force of no less than 9000 POUNDS.	10 discounts
5. No use of edge protection or padding if warranted.	2 discounts
6. Improper use of mechanisms for load and action. o IE: Did not use prussik with belay, did not set up proper 3:1 rigging etc.	10 discounts
7. Incorrect use of knots for the use and/or did not dress knot appropriately. o For each infraction	5 discounts
8. If using a prussik; a minding pulley (or like) must be used to secure load. o For each infraction	5 discounts
9. Rope rigging system must be within safe working load. o Any software attached to an anchor(s) must be done in a manner it can take a force of no less than 9000 pounds o Webbing not set up correctly for anchor use	50 discounts
10. Improper Patient packaging used to ensure safe operations while suspended on rope rescue systems. o Patient must be secured in a fashion to not compromise rescue. o If vertical must use proper equipment designed to vertical lift and lower and patient must be properly secured inside equipment. o Patient should not sustain further harm inside equipment	5 discounts
11. At any time if more than one anchor is needed to attach any type of system to said anchor, than a load sharing self-equalizing knot must be applied.	
12. Safety checks not completed prior to move. o Checks all knots o Carabiners are checked o Capture device check ▪ Belay catch ▪ Mechanical advantage catch ▪ Triple wrap on prusik	10 discounts
13.Failure to maintain slack or take up as needed on belay. o Belay must have min slack to reduce shock load if main line fails.	20 discounts

	Discounts
▪	10 discounts
13. Failure to identify a proper braking mechanism. o In wet conditions 540 will fail as a safety device and another braking mechanism must be utilized.	10 discounts
14. Unable to complete the move in time allotted.	10 discounts
15. Failure to maintain a smooth load movement during raise and lower. o Raise and lower should have minimal movement and not jogging of patient or rescuer o Patient if lowered out of a window should not slide or slack back against building or object	10 discounts
16. Did not check for overhead hazards prior to move.	10 discounts
17. Team members not wearing proper PPE for rescue. o For each infraction	
18. System was shock loaded at 6 feet or greater.	1 discount
19. Tripod used, and belay was not set up independently. o Mainline will be utilized with tripod o Another anchor will be utilized with belay to reduce shock load to belay line	10 discounts
20. Equipment was not treated with care. (Each infraction) o Side loaded carabiner o Equipment tossed and hit ground o Ropes that are stepped on o Ropes that are not edge protected o Side loading double pulley, pulleys not rated for loading single sheave (must have two ropes loaded to use) o Did not secure with a safety on a break bar or rescue 8 o Did not place MPD in park and unmanned the device	10 discounts
21. Failure to maintain team edge management. o Teams are not protected from going over an edge o Teams are not tied off and going within 10 ft of edge Teams are not wearing harness in the area prior to looking at edge/decent	2 discounts
22. Patient cannot talk, direct, or assist unless stated in problem. o Reactionary or unintentional movement by the patient should not be discounted o Handling of a patient by a team or team member in such a manner that could compromise condition of the patient.(standing over patient to secure to patient packaging device.)	2 discounts