



2020 International Mines Rescue Contest  
September 13<sup>th</sup>-15<sup>th</sup> 2022  
Underground Mine Simulation Final Score Sheet

*ma?*  
*EW*

TEAM NAME: Konkola Copper

TEAM NUMBER: 6

DATE OF COMPETITION: 9/13/22

APPARATUS TESTING & REPORTING TASK: 10 (12 points available)

MINIMUM PERSONAL PROTECTIVE EQUIPMENT: 3 (3 points available)

CHECKING OF COMMUNICATION TASK: 3 (3 points available)

GAS TESTING & REPORTING TASK: 72 (99 points available)

HAZARDS TASK: 12 (18 points available)

ROOF TESTING TASK: 4 (21 points available)

VENTILATION & AIRLOCKING TASK: 9 (27 points available)

EXPLORATION PROCEDURES: 31 (36 points available)

MINE MAP/PLANS: 8 (12 points available)

MINUS ANY DEMERITS: 0

TOTAL MINE RESCUE SCORE: 152 (231 total points available)

*149 R*  
*149 ok*



International Mines Rescue Competition  
Since 1999







# IMRC USA 2022

Beaver, WV  
September 9-16, 2022

Team Name: Konkola Copper

Team number: 6

Team clock (working time) at completion of problem: 75:00

Timekeeper's watch time at completion of problem: 75:00

Was there a team clock failure or problem?  : YES  : NO

If answer is "yes" remarks:

Initial apparatus test completion time: 3:00

1<sup>st</sup> 20-minute test completion time: 23:25

2<sup>nd</sup> 20-minute test completion time: 46:10

3<sup>rd</sup> 20-minute test completion time: 63:57

4<sup>th</sup> 20-minute test completion time:

5<sup>th</sup> 20-minute test completion time:

6<sup>th</sup> 20-minute test completion time:

### Apparatus checks

- **Rule 3**
  - Team completes all 20-minute apparatus checks as required.
  - 1-Team went over 20-minutes on several test
  - 1 Points earned

### Apparatus checks

- The team or groups conduct proper apparatus examinations.
- 3-Team met all requirements for the task
- 3 Points earned





Surface

- **Rule 1**
  - Team has on all required PPE.
- 3-Team met all requirements for the task
- 3 Points earned

Surface

- **Rule 5**
  - Team visually checks the communication/radios for safe operating condition & battery level before going underground.
- 3-Team met all requirements for the task
- 3 Points earned
- **Stretcher**
  - One of the groups takes the stretcher inby the Fresh Air Base and keeps it with them as the groups explore the mine.
- 3-Team met all requirements for the task
- 3 Points earned

Team stops and tasks

1. Mine opening-----(gas readings 0.0%Ch4, 500ppmCO, 20.0%O2, 0.00ppmNO2)
  - **Rule 7** Team checks gas concentrations at all openings to areas to be explored.
- 3-Team met all requirements for the task
- 3 Points earned
2. Spad#103----- (gas readings 0.0%Ch4, 500ppmCO, 20.0%O2, 0.00ppmNO2)
  - **Rule 8** Team checks gas concentration at all intersections encountered.
- 3-Team met all requirements for the task
- 3 Points earned
3. Spad#102----- (gas readings 0.0%Ch4, 500ppmCO, 16.5%O2, 0.00ppmNO2)
  - **Rule 8** Team checks gas concentration at all intersections encountered.
- 3-Team met all requirements for the task
- 3 Points earned





- **Rule 6** Team report IDLH atmosphere to the IC/BO or assistant 16.5%O2.
- 3-Team met all requirements for the task
- 3 Points earned
- **Rule 2** Team dons' apparatuses if not already, first encounter of an IDLH atmosphere 16.5%O2.
- 3-Team met all requirements for the task
- 3 Points earned
- **Rule 4** Team conducts an apparatus check, first encounter with a respiratory contamination (IDLH) 16.5%O2.
- 3-Team met all requirements for the task
- 3 Points earned
- 4. X-cut 101 to 102-----(gas readings 0.0%Ch4, 500ppmCO, 16.5%O2, 0.00ppmNO2)
  - **Rule 14** Team block/chock wheel of scoop prior to any team member passing scoop.
  - 3-Team met all requirements for the task
  - 3 Points earned
  - **Rule 9** Team checks gas concentration prior de-energizing scoop.
  - 1-Team de-energized the scoop before taking the required gas check,
  - 1 Points earned
  - **Rule 15** Team de-energize scoop prior to any team member passing scoop.
  - 3-Team met all requirements for the task
  - 3 Points earned
- 5. Spad#101------(gas readings 0.0%Ch4, 500ppmCO, 16.5%O2, 0.00ppmNO2)
  - **Rule 8** Team checks gas concentration at all intersections encountered.
  - 3-Team met all requirements for the task
  - 3 Points earned







- 6. Spad#100-----(gas readings 0.0%Ch4, 500ppmCO, 16.5%O2, 0.00ppmNO2)
  - **Rule 8** Team checks gas concentration at all intersections encountered.
  - 3-Team met all requirements for the task
  - 3 Points earned
  - **Rule 26** The team will now explore the areas of the lower-level smoke free in 2, 2, and 2 groups.
  - 3-Team met all requirements for the task
  - 3 Points earned
  - **Rule 28** each group will now report to IC/BO their intentions to stop or advance.
  - 3-The team met all requirements for the task
  - 3 Points earned
  - **Rule 28** groups must stay within one crosscut of an adjacent group when exploring.
  - 3-Team met all requirements for the task
  - 3 Points earned
- 7. Spad#104-----(gas readings 0.0%Ch4, 1250ppmCO, 16.5%O2, 0.00ppmNO2)
  - **Rule 8** Team checks gas concentration at all intersections encountered.
  - 3-Team met all requirements for the task
  - 3 Points earned
  - **Rule 14** Group block/chock wheel prior to any group member passing mini-trax.
  - 0-Team skipped the task,
  - 0 Points earned
- 8. Spad#105-----(gas readings 0.0%Ch4, 1250ppmCO, 16.5%O2, 0.00ppmNO2)
  - **Rule 8** Team checks gas concentration at all intersections encountered.
  - 3-Team met all requirements for the task
  - 3 Points earned





- **Rule 25** team must come together to fight the fire.
- 3-The team met all requirements for the task
- 3 Points earned
- **Rule 16** Team members cannot pass the location of the fire in entry encountered prior to extinguishing.
- 3-Team met all requirements for the task
- 3 Points earned
- **Rule 22** Team verbally indicates checking for loose roof/ground at the fire location prior to and after putting out, and each time returning through fire area.
- 1-team traveled back through area did not verbally indicate checking loose roof/ground
- 1 Points earned
- **Rule 10** check gas concentration at fire prior to extinguishing and after fire is put out.
- 3-Team met all requirements for the task
- 3 Points earned
- **Rule 27** after fire is extinguished the team must immediately return to groups of 2's for further explorations.
- 2-The entire team explored to the next intersection in #2 entry before splitting off.
- 2 Points earned
- 9. **Spad#106**-----(gas readings 0.0%Ch4, 1250ppmCO, 16.5%O2, 0.00ppmNO2)
  - **Rule 8** Team checks gas concentration at all intersections encountered.
  - 3-Team met all requirements for the task
  - 3 Points earned
  - **Rule 14** block/chock wheel prior to group passing mantrip.
  - 0-Team skipped the required task,
  - 0 Points earned





10. Spad#107-----(gas readings 0.0%Ch4, 1250ppmCO, 16.5%O2, 0.00ppmNO2)
- **Rule 8** Team checks gas concentration at all intersections encountered.
  - 3-Team met all requirements for the task
  - 3 Points earned
11. Spad#108-----(gas readings 0.0%Ch4, 1250ppmCO, 16.5%O2, 0.00ppmNO2)
- **Rule 8** Team checks gas concentration at all intersections encountered.
  - 3-Team met all requirements for the task
  - 3 Points earned
12. Spad#109-----(gas readings 0.0%Ch4, 1250ppmCO, 16.5%O2, 0.00ppmNO2)
- **Rule 8** Team checks gas concentration at all intersections encountered.
  - 3-Team met all requirements for the task
  - 3 Points earned
13. Spad#110-----(gas readings 0.0%Ch4, 1250ppmCO, 16.5%O2, 0.00ppmNO2)
- **Rule 8** Team checks gas concentration at all intersections encountered.
  - 0-Team skipped gas check in intersection,
  - 0 Points earned
  - **Rule 24** team member must verbally indicate checking loose roof/ground at the location of caved/rock fall.
  - 0-Team skipped the required task,
  - 0 Points earned
14. Spad#111-----(gas readings 0.0%Ch4, 1250ppmCO, 16.5%O2, 0.00ppmNO2)
- **Rule 8** Team checks gas concentration at all intersections encountered.
  - 3-Team met all requirements for the task
  - 3 Points earned





- **Rule 24** team member must verbally indicate checking loose roof/ground at the location of caved/rock fall.

0-Team skipped the required task,

0 Points earned

15. Spad#112-----(gas readings 0.0%Ch4, 1250ppmCO, 16.5%O2, 0.00ppmNO2)

- **Rule 8** Team checks gas concentration at all intersections encountered.

3-Team met all requirements for the task

3 Points earned

16. Rescue chamber--- (gas readings 0.0%Ch4, 1250ppmCO, 16.5%O2, 0.00ppmNO2)

- **Rule 30** team must enter RC when reaching 111 & 112 intersections.

3-Team met all requirements for the task

3 Points earned

- **Rule 25** team must come together when entering the RC.

3-Team met all requirements for the task

3 Points earned

- **Rule 11** team member entering RC must check gas concentration inside airlock.

3-Team met all requirements for the task

3 Points earned

- **Rule 29** member entering RC must purge to clear the IDLH.

3-Team met all requirements for the task

3 Points earned







Rescue chamber

- **Rule 12**  
 1<sup>st</sup> gas check in airlock, gas readings 0.0%Ch4, 1250ppmCO, 16.5%O2, 0.00ppmNO2,  
 2<sup>nd</sup> gas check in airlock after purging gas readings 0.0%Ch4, 0.0ppmCO, 20.9%O2,  
0.00ppmNO2,  
 3<sup>rd</sup> gas test inside inner door (gas readings 0.0%Ch4, 0.0ppmCO, 20.9%O2,  
0.00ppmNO2)

2-Team only done 2 of 3 gas checks inside the RC,

2 Points earned

- **Rule 31** the two persons found live in the RC must be properly protected from the IDLH atmosphere outside the RC. (Team must ventilate due to only having one CARE-vent).

0-Team skipped the required task,

0 Points earned

- **Rule 32** team must evacuate persons to the FAB that were found in the RC by utilizing shortest route to the surface through previous explored areas.

3-Team met all requirements for the task

3 Points earned

- **Rule 25** the entire team must remain together when removing any persons from the mine.

3-Team met all requirements for the task

3 Points earned

17. Ventilating to clear IDLH atmospheres the teams has encountered on the lower level to properly remove, and rescue persons found in RC.

- **Rule 33** The team must build a temporary stopping on one side of the caved area located between 110 & 111 due to the caved area is an inaccessible area.

0-Team skipped the required task,

0 Points earned





- **Rule 23** prior to erecting a team built stopping a team member must verbally indicate checking for loose roof/ground.

0-Team skipped the required task,

0 Points earned

- **Rule 36** to be consider airtight a temporary must have at least 8 of 9 clips across top clipped and 3 of 4 clips on each side clipped.

0-Team skipped the required task,

0 Points earned

- **Rule 33** The team must ensure the upper level is not affected by a ventilation change by closing the door located at the bottom of the ramp leading to the upper level due to the upper level is consider as an unexplored area.

0-Team skipped the required task,

0 Points earned

- **Rule 34** the stopping may be built, and the door may be closed by either a group of two or by the entire team but afterward prior to a vent change, the entire team must all be together prior to starting the fan.

0-Team skipped the required task,

0 Points earned

#### Ventilating to clear IDLH atmospheres

- **Rule 35** prior to starting the fan the team must receive permission from the control group through a request from the IC/BO.

3-Team met all requirements for the task

3 Points earned

- **Rule 13** team must recheck gas concentrations after the ventilation change at their location (if in mine) and at all intersections traveled through immediately after the change occurred.

1-Team (missed (>2) rechecks after vent change had occurred in intersections

0 Points earned





18. Advancing to upper level via ramp (gas readings bottom of ramp 0.0%Ch4, 1250ppmCO, 16.5%O2, 0.00ppmNO2) -- (gas readings top of ramp 0.0%Ch4, 1700ppmCO, 16.5%O2, 0.00ppmNO2 and smoke)

- **Rule 11** when entering the ramp check gas concentrations on ramp leading up to upper level.

• 3-Team met all requirements for the task

• 3 Points earned

- **Rule 11** check gas concentrations at first appearance of smoke at top of ramp.

• 3-Team met all requirements for the task

• 3 Points earned

- **Rule 38** team must attach their lifeline in clear air prior to advancing.

• 3-Team met all requirements for task

• 3 Points earned

19. spad# 200----- (gas readings 0.0%Ch4, 1700ppmCO, 16.5%O2, 0.00ppmNO2 and smoke)

- **Rule 8** Team checks gas concentration at all intersections encountered.

• 3-Team met all requirements for the task

• 3 Points earned

- **Rule 24** team member must verbally indicate checking loose roof/ground at the location of caved/rock fall and faces.

• 1-Team timed out before completing required task

• 1 Points earned

20. spad# 203--- (gas readings 0.0%Ch4, 1900ppmCO, 16.5%O2, 0.00ppmNO2 and smoke)

- **Rule 8** Team checks gas concentration at all intersections encountered.

• 1-Team timed out before completing required gas check in intersection

• 1 Points earned

- **Rule 24** team member must verbally indicate checking loose roof/ground at the location of caved/rock fall.

• 1-Team timed out before completing required task

• 1 Points earned





21. Spad#204--- (gas readings 0.0%Ch4, 1700ppmCO, 16.5%O2, 0.00ppmNO2 and smoke)

- **Rule 8** Team checks gas concentration at all intersections encountered.
- 1-Team timed out before completing required gas check in intersection
- 1 Points earned
- **Rule 11** check gas concentration at location of victim/casualties.
- 1-Team timed out before doing required gas check at victim/manikin
- 1 Points earned
- **Rule 11** check gas concentration at closed door/airtight structure.
- 1-Team timed out before doing required gas check at closed door
- 1 Points earned
- **Rule 32** team must evacuate person/manikin to the FAB that was found at this team stop by attempting to utilizing shortest route to the surface through previous explored areas but will find the route infeasible due to being blocked by a roof collapse.
- 1-Team timed out before completing required task
- 1 Points earned
- **Rule 25** the entire team must remain together when removing any persons from the mine.
- 1-Team timed out before completing the required task
- 1 Points earned

22. Air locking to breach closed door

- **Rule 37** before breaching an airtight separation/closed door an airlock is required.
- 1-Team timed out before completing required task
- 1 Points earned
- **Rule 23** prior to erecting a team built stopping a team member must verbally indicate checking for loose roof/ground.
- 1-Team timed out before completing required task
- 1 Points earned







- **Rule 36** to be consider airtight a temporary must have at least 8 of 9 clips across top clipped and 3 of 4 clips on each side clipped.
  - 1-Team timed out before completing required task
  - 1 Points earned
23. **Breaching door**---(gas readings 0.0%Ch4, 0.0ppmCO, 20.9%O2, 0.00ppmNO2)
- **Rule 11** check gas concentration on back of side of door after breaching.
  - 1-Team timed out before doing required gas check
  - 1 Points earned
24. **Find next door closed.**
- **Rule 37** before breaching an airtight separation/closed door an airlock is required. The team may close outby door they just breached or if the airlock is still in place just outby the door then no additional airlock is needed by the team to breach this door.
  - 1-Team timed out before completing required task
  - 1 Points earned
  - **Rule 11** check gas concentration at closed door/airtight structure.
  - 1-Team timed out before doing required gas check at closed door
  - 1 Points earned
25. **Breaching door**
- **Rule 11** check gas concentration on back of side of door after breaching.
  - 1-Team timed out before doing required gas check when breaching door
  - 1 Points earned
26. **Spad# 210**----- (gas readings 0.0%Ch4, 0.0ppmCO, 20.9%O2, 0.00ppmNO2)
- **Rule 8** Team checks gas concentration at all intersections encountered.
  - 1-Team timed out before completing required gas check in intersection
  - 1 Points earned
27. **Spad# 211**----- (gas readings 0.0%Ch4, 0.0ppmCO, 20.9%O2, 0.00ppmNO2)
- **Rule 8** Team checks gas concentration at all intersections encountered.
  - 1-Team timed out before completing required gas check in intersection
  - 1 Points earned





Mapping and note taking tasks.

Map rule 1:

The prepared map by the IC/BO must use proper map symbols that are shown in the 2020 IMRC rules.

- 1-team timed out before mapping all areas of the mine,
- 1 Points earned

Map rule 2:

The IC/BO prepared map must record accurately/verbatim all gas concentration readings and other information required to be reported by the team.

- 1-team timed out before mapping all areas of the mine,
- 1 Points earned

Map rule 3:

The IC/BO must record the time at the completion of each team apparatus test + the lowest gauge reading during each required apparatus test.

- 3-Team met all requirements for task
- 3 Points earned

Map rule 4:

There will be no visually comparing of maps during working of the problem by any team member located inside the designed command center/ FAB.

- 3-Team met all requirements for task
- 3 Points earned

Discounts for disturbing or destroying competition field components 0

- Total score from all tasks: 149

**Final Score 149**





2020 International Mines Rescue Contest  
September 13<sup>th</sup>-15<sup>th</sup> 2022  
Mine Rescue Teams Skills Final Score sheet

ma  
th  
Dr

2022 IMRC MINE RESCUE SKILLS  
SEPTEMBER 13<sup>TH</sup> THRU 15<sup>TH</sup> 2022  
TOTAL SCORESHEET

TEAM NAME: KONKOLA COPPER MINES-KCM NCHANGA COPPER MINE

DATE OF COMPETITION: 09/13/2022

ANEMOMETER SCORE: 21

SMOKE TUBE SCORE: 14

MAGNEHELIC SCORE: 7

GAS DETECTOR SCORE: 12

AIR LIFT BAG SCORE: 26

TEAM CHALLENGE TIME: 40 :44

MINUS ANY DEMERITS: 0

TOTAL MINE RESCUE SKILLS SCORE: 80

TOTAL WORKING TIME: 79 :26

JUDGE'S NAMES: Kevin Abel

Dean Blair



International Mines Rescue Competition  
Since 1999





**INTERNATIONAL  
MINES RESCUE COMPETITION  
2020**

September 13-15, 2022

**AIR LIFT BAG SKILL**

**TEAM NAME:** KONKOLA COPPER MINES-KCM NCHANGA COPPER MINE

**SCENARIO**

- Teams will be required to **SAFELY** lift an object using Compressed Air and Air Lift Bags:.

**Judges Instructions**

**Merit Point Scoring:**

- 0 = not done
- +1 = poor attempt
- +2 = needs improvement
- +3 = excellent meets all requirements

1. Every line must be scored.
2. A score of 0, 1 or 2 **must be explained** by the judges.
3. When a score of 3 is applied, comments are encouraged

**Rough Handling**

1. Rough handling demerits will be deducted from the total score
2. Judges can deduct 1 to 5 points per incident of rough handling of equipment
4. Rough handling demerits will have a maximum of 10 points
3. Rough handling deductions must be explained by the judges

**IMRC will provide:**

- “Mat-Jack” High Pressure Air Lift Bag
- Compressed Air Cylinder
- Regulator
- Hoses with Connections
- Flow Controller

**Team Safety:**

**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**





AIR BAG LIFT REQUIRMENTS

Teams will be separated into two person teams to complete this segment of the skills exercise.

1. Team will properly connect the regulator to the compressed gas cylinder.

3

**Judge's Remarks:**

2. Team will properly connect the air lift bag hose to the regulator.

2

**Judge's  
Remarks:**

Did not twist coupling away from pin



3. Team will properly connect the hose from the flow controller to the air lift bag.

3

**Judge's Remarks:**

4. Team will properly connect the hose from the flow controller to the air lift bag.

3

**Judge's Remarks:**

5. Team will properly connect the hose from the flow controller to the air lift bag.

3

**Judge's Remarks:**



6. Team will properly connect the hose from the flow controller to the air lift bag.

3

**Judge's Remarks:**

7. Team will properly place blocking under the object being lifted.

3

**Judge's Remarks:**

8. Team will properly deflate the bag.

3

**Judge's Remarks:**



9. Team will properly remove the bag from under the object being lifted.

3

**Judge's Remarks:**

**TOTAL AIR LIFT BAG MERITS** 26

**LESS DEMERITS** \_\_\_\_\_

**Judge's Remarks:**

Time 00:07:18

**TOTAL AIR LIFT BAG SCORE** 26





**INTERNATIONAL  
MINES RESCUE COMPETITION  
2020**

September 13-15, 2022

**AIR MEASUREMENTS – ANEMOMETER**

**Team name:** KONKOLA COPPER MINES-KCM NCHANGA COPPER MINE

**SCENARIO**

- Teams will be required to take a reading using an anemometer.
- Contest will provide the required anemometer
- Contest will provide the required tape measure
- Contest will provide required pen or pencil
- Contestant(s) will provide their own timing device

**Judges Instructions**

**Merit Point Scoring:**

- 0 = not done
- +1 = poor attempt
- +2 = needs improvement
- +3 = excellent meets all requirements

1. Every line must be scored.
2. A score of 0, 1 or 2 **must be explained** by the judges.
3. When a score of 3 is applied, comments are encouraged

**Rough Handling**

1. Rough handling demerits will be deducted from the total score
2. Judges can deduct 1 to 5 points per incident of rough handling of equipment
4. Rough handling demerits will have a maximum of 10 points
3. Rough handling deductions must be explained by the judges



**1. ANEMOMETER REQUIRMENTS**

Teams will be separated into two person teams to complete this segment of the skills exercise.

**2. Contestant will give a brief description of how an anemometer functions 3**

**Judge's Remarks:**

**3. Contestant(s) will take a measurement of the area to be tested. Both the width and the height of the area must be measured in order to determine the square footage of the area. 3**

**Judge's Remarks:**

**4. Correctly zero the anemometer. 3**

**Judge's Remarks**



5. Stand with contestant's back to one rib and hold the anemometer in a vertical position in front of contestant

3

Judge's Remarks:

6. Properly traverse the entry

3

Judge's Remarks:

7. Take a 1 minute (60 seconds) reading in the area:

3

Judge's Remarks:

8. At the end of one minute, turn off the anemometer

3

Judge's Remarks:



9. Contestant(s) will now calculate the air reading for the area (air reading must be calculated and submitted to the judge)

0

**Judge's Remarks:**

Calculation incorrect

ANEMOMETER TOTAL MERITS 21

LESS DEMERITS       

**Judge's Remarks:**

11:29

ANEMOMETER TOTAL SCORE: 21







S

Mine Rescue Skills Gas Detector Scoresheet  
2020 International Mines Rescue Contest  
National Mine Health & Safety Academy  
Beaver WV. U.S.A.

## INTERNATIONAL MINES RESCUE COMPETITION

2020

September 13-15, 2022

### Mine Rescue Skills Gas Detector

TEAM NAME: KONKOLA COPPER MINES-KCM NCHANGA COPPER MINE

#### SCENARIO

- Teams will be required to take a reading using an anemometer.
- Contest will provide the Industrial Scientific MX-6
- Contest will provide the required calibrating hood and hose
- Contest will provide required pen or pencil
- Contest will provide the required testing gas
- Contest will provide any required replacement sensors, etc

#### Judges Instructions

##### Merit Point Scoring:

- 0 = not done
- +1 = poor attempt
- +2 = needs improvement
- +3 = excellent meets all requirements

1. Every line must be scored.
2. A score of 0, 1 or 2 **must be explained** by the judges.
3. When a score of 3 is applied, comments are encouraged

##### **Rough Handling**

1. Rough handling demerits will be deducted from the total score
2. Judges can deduct 1 to 5 points per incident of rough handling of equipment
3. Rough handling demerits will have a maximum of 10 points
4. Rough handling deductions must be explained by the judges



International Mines Rescue Competition  
Since 1999







**1. GAS READINGS REQUIRMENTS**

Teams will be separated into two person teams to complete this segment of the skills exercise.

2. Contestant will give a brief description of how a MX-6 functions 3

**Judge's Remarks:**

3. Contestant(s) will take the gas test in the proper order 3

**Judge's Remarks:**

4. Contestant(s) will follow proper procedure when testing with gas detectors 3

**Judge's Remarks**

5. Contestants will determine gas concentration within the prescribed error rate of the detector. Correct readings will be within 20% (inclusive) of the gas concentration within the test cylinder and observed on the analytical instruments 3

**Judge's Remarks:**







S

GAS CONCENTRATIONS

METHANE

% CH 4 in cylinder	Min. Accepted	Max. Accepted	% by Examiner
2.5	2	3	2.39

CARBON MONOXIDE

ppm CO in cylinder	Min. Accepted	Max. Accepted	ppm by Examiner
100	80	100	100

OXYGEN DEFICIENCY

% O 2 in cylinder	Min. Accepted	Max. Accepted	% by Examiner
18	14.4	21.6	17.9

NITROGEN DIOXIDE

ppm NO2	Min. Accepted	Max. Accepted	ppm by Examiner
5	4	6	5.2

Judge's Remarks:

GAS DETECTOR TOTAL MERITS 12

LESS DEMERITS \_\_\_\_\_

GAS DETECTOR TOTAL SCORE: 12

WORKING TIME: 3:34

Judge's Name: Kevin Abel

Judge's Name: Dean Blair





**INTERNATIONAL  
MINES RESCUE COMPETITION  
2020**  
September 13-15, 2020  
**MAGNEHELIC**

**SCENARIO**

- Teams will be required demonstrate the proper use of a Magnehelic gauge.
- Contest will provide the Magnehelic gauge and hoses
- Contest will provide a device for zeroing the Magnehelic gauge

**Judges Instructions**

**Merit Point Scoring:**

- 0 = not done
- +1 = poor attempt
- +2 = needs improvement
- +3 = excellent meets all requirements

1. Every line must be scored.
2. A score of 0, 1 or 2 **must be explained** by the judges.
3. When a score of 3 is applied, comments are encouraged

**Rough Handling**

1. Rough handling demerits will be deducted from the total score
2. Judges can deduct 1 to 5 points per incident of rough handling of equipment
4. Rough handling demerits will have a maximum of 10 points
3. Rough handling deductions must be explained by the judges

1. **MAGNEHELIC GAUGE REQUIRMENTS**

Teams will be separated into two person teams to complete this segment of the skills exercise.





2. Contestant(s) failing to explain what a Magnehelic gauge measures 3

**Judge's Remarks:**

3. Contestant(s) will demonstrate how to zero the Magnehelic gauge. 0

**Judge's Remarks:**

Did not zero

4. Contestant(s) will connect the hoses to Magnehelic properly and simulate the reading. 3

**Judge's Remarks:**

5. Contestant will give and explain the proper reading of the Magnehelic to the judge (positive or negative pressure should be included in the explanation).

1

**Judge's Remarks:**

No negative reading / No decimal / Wrong scale



MAGNEHELIC TOTAL MERTITS 7

LESS DEMERITS \_\_\_\_\_

**Judge's Remarks:**

time 00:03:29

TOTAL MAGNEHELIC SCORE 7



**INTERNATIONAL  
MINES RESCUE COMPETITION  
2020**

September 13-15, 2022

**SMOKE TUBE AIR READING**

**TEAM NAME:** KONKOLA COPPER MINES-KCM NCHANGA COPPER MINE

**SCENARIO**

- **Teams will be required to take an air reading using a smoke tube.**
- **Contest will provide the Smoke Tubes and Aspirating Bulb**
- **Contest will provide Tape Measure**
- **Contest will provide the pen or pencil**
- **Contestant(s) will provide a Timing Device that complies with the General Contest Rules**

**Judges Instructions**

**Merit Point Scoring:**

0 = not done  
+1 = poor attempt  
+2 = needs improvement  
+3 = excellent meets all requirements

1. Every line must be scored.
2. A score of 0, 1 or 2 **must be explained** by the judges.
3. When a score of 3 is applied, comments are encouraged

**Rough Handling**

1. Rough handling demerits will be deducted from the total score
2. Judges can deduct 1 to 5 points per incident of rough handling of equipment
4. Rough handling demerits will have a maximum of 10 points
3. Rough handling deductions must be explained by the judges



1. **SMOKE TUBE REQUIRMENTS**

Teams will be separated into two person teams to complete this segment of the skills exercise.

2. Contestant(s) will verbally explain how smoke will be released and timed through each of the four quadrants (The contestant(s) **will not** “break” the smoke tube).

3

**Judge's Remarks:**

3. Measure off a distance in a relatively straight and uniform airway. Ten (10) feet will be the distance for this measurement. Contestant(s) will determine the area to be tested in square feet.

3

**Judge's Remarks:**





4. Contestant(s) with the smoke tube will stand at the upwind point of the measured distance, and station one person with a stopwatch at the downwind point.

3

**Judge's Remarks:**

5. Contestant(s) with the smoke tube then simulates releasing a smoke cloud at each quadrant point within the airway.

2

**Judge's Remarks:**

Smoke tube not horizontal

6. The Contestant with the stopwatch then must time each cloud from the moment it is released until it reaches the downwind point. The measurements are taken separately for each of the quadrants until all 4 quadrants have been completed.

3

**Judge's Remarks:**



7. Contestant(s) will calculate smoke air reading for the area

0

**Judges Remarks:**

wrong calculation

SMOKE TUBE TOTAL MERITS 14

LESS DEMERITS \_\_\_\_\_

**Judges Remarks:**

time 00:12:52

SMOKE TUBE TOTAL SCORE 14





**INTERNATIONAL  
MINES RESCUE COMPETITION  
2020**

September 13-15, 2022

**MINE RESCUE TEAM CHALLENGE**

**Team Name:** KONKOLA COPPER MINES-KCM NCHANGA COPPER MINE

**SCENARIO**

- :
- Any necessary subject matter and reference manuals used for “Mine Rescue Skills” are posted on the Competition Page of IMRC2020.com. □ of MSHA’s IG 7(a) manual.

**Judges Instructions**

**Team Safety:**

**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**

**The Challenges will not be scored but will be timed. The cumulative time of the challenges will be added to the cumulative time for the other Mine Rescue Skills for a total time for the Mine Rescue Skills segment of the competition:**

Each member of the six (6) person team will compete in the following challenges

**Log Sawing Challenge**

**The Timing Device will be started when Team Member #1 begins the Log Sawing Challenge and will continue to run until the final Team member completes the Sledge Hammer Challenge**

1. Each Team member (1-6) will saw a log in half with a handsaw

**Carry Challenge**

2. Each Team member (1-6) will carry (2) forty one (41 lbs) pound items (Dragersorb Kegs) for a distance of fifty (50) feet and return to the starting point while carrying the items







**Fire Hose lay out Challenge**

3. Each Team Member (1-6) will Roll out two (2) sections of fire hose from the designated starting point, Connect the two sections of fire hose, Un-connect and reroll the fire hose and Return the fire hose to the starting point

**Sledge Hammer Challenge**

4. Each Team Member (1-6) will use a sixteen (16) pound sledge hammer to move an 8 inch wide by 8 inch thick by 4 foot long log a distance of 4 feet.

CUMULATIVE TIME 40:44

Judge's Name: Kevin Abel

Judge's Name: Dean Blair









FR

2022 IMRC FIRST AID  
SEPTEMBER 13<sup>TH</sup> THRU 15<sup>TH</sup> 2022  
TOTAL SCORESHEET

TEAM NAME: KONKOLA COPPER MINES-KCM NCHANGA COPPER MINE

DATE OF COMPETITION: 09/14/2022

CASUALTY ONE MERITS: 71

CASUALTY ONE DEMERITS: 5

CASUALTY TWO MERITS: 78

CASUALTY TWO DEMERITS: 3

CASUALTY THREE MERITS: 105

CASUALTY THREE DEMERITS: 0

CASUALTY FOUR MERITS: 15

CASUALTY FOUR DEMERITS: 0

WORKING TIME: 27:13

TOTAL FIRST AID MERITS: 269

TOTAL CPR AED SCORE: 102 *(Transfer total CPR AED score from scoresheet)*

MINUS FIRST AID DEMERITS: 8

TOTAL FIRST AID SCORE: 363



**INTERNATIONAL  
2020 MINES RESCUE COMPETITION  
SEPTEMBER 13<sup>TH</sup> – 15<sup>TH</sup> 2022**

**FIRST AID COMPETITION**

**SCENARIO**

When the mine rescue team is at the Firefighting site they are told the following;

- An accident has happened at a surface site.
- The site is located at the Blue Falcon Mining Maintenance Shop.
- Their help is needed immediately.
- Emergency services have been notified.
- Emergency services estimate their response time will be forty-five minutes.
- A fully equipped first aid kit, AED and rescue basket is located at the Blue Falcon Mining Maintenance Shop.
- The team will arrive at the Maintenance Shop.
- The team will determine which one of the three patients that will require immediate transport.

When the team arrives at the Blue Falcon Mining Maintenance Shop they will;

- Gather their first aid kit and rescue basket.
- They will see smoke as they walk to the Maintenance Shop.

At the site the mine rescue team finds three injured workers and one obviously dead worker. It appears an explosion has taken place at an air compressor located in the shop.  
In the confusion that follows:

- Worker #1 (Bob) he suffers a crushing injury to the LLE from a bulldozer blade.
- Worker #2 (Al) he has electrical burns to the R hand and L shoulder, develops V-fib from the shock, conscious for about three minutes then goes unconscious and requires CPR/AED.
- Worker #3 (Jane) Walking wounded. She has a nail in the eye/safety glasses, confused, trying to help the burn victim, wanting to pull the nail out to see better so she can help. she will also have a foreign body in their leg.
- Worker #4 (Tina) Obvious Deceased worker. Her head is amputated from her body with pool of bright red blood. It appears that a piece of metal became air born from the explosion of the air supply tank connected to the air compressor.

## Patients

1. Patient #1 (Bob) is lying on the ground with his left leg under a bulldozer blade. He is yelling in pain. Bright red blood is coming out from the leg.
2. Patient #2 (Al) was working at the breaker box when the air compressor exploded. The mine rescue team finds the patient lying beside the station box dazed, holding out his hands. He has electrical burns to the R hand and L shoulder, develops V-fib from the shock, conscious for about three minutes then goes unconscious and requires CPR/AED.
3. Patient #3 (Jane) (walking wounded) has a nail protruding from her safety glasses involving the eye. She also has a foreign body in their leg. She seems oblivious to either injury as she goes back and forth between the injured co-workers trying to aid. She has blood coming from both injuries.
4. Patient #4 (Tina) Obvious Deceased worker. Her head is amputated from her body with pool of bright red blood. It appears that pieces of metal became air borne from the explosion of the air supply tank connected to the air compressor

**INTERNATIONAL  
MINE RESCUE COMPETITION  
2020**

**FIRST AID COMPETITION**

**Judges Instructions**

**Merit Point Scoring:** 0 = not done  
+1 = poor attempt  
+2 = needs improvement  
+3 = excellent meets all requirements

1. Every line must be scored.
2. A score of 0, 1 or 2 **must be explained** by the judges.
3. When a score of 3 is applied, comments are encouraged
4. If a team runs out of time a score of 0 will apply to remaining actions

**Rough Handling**

1. Rough handling demerits will be deducted from the total score
2. Judges can deduct 1 to 5 points per incident of rough handling for each patient
4. Rough handling demerits will have a maximum of 10 points
3. Rough handling deductions must be explained by the judges

**Team Safety:**

**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**

**INTERNATIONAL  
MINE RESCUE COMPETITION  
2020**

**FIRST AID COMPETITION**

**TEAM:** KONKOLA COPPER MINES-KCM NCHANGA COPPER MINE

**Patient-#1** (Bob) is lying on the ground with his left leg under a bulldozer blade. He is yelling in pain. Bright red blood is coming out from the leg.

**Merits Points**

**SCENE SURVEY**

1. **Assess Hazards**

Securing the environment. Assure the stability of the blade.

3

**Judge's Comments:**

2. **Use examination gloves**

Examination gloves must be used before contact with patient occurs

3

Gloves must be removed and disposed of properly

3

**Judge's Comments:**

**Page 1 Merits Sub Total** 9

**SCENARIO #1 CONTINUED**

3. The team members must identify themselves and ask the patient if they want help. 3

**Judge's Comments:**

**Assess Breathing**

1. The team must assess the airway. 3

To assess the airway the team should talk to the patient. The patient will be able to speak clearly indicating there is a good airway.

**Judge's Comments:**

**Assess Circulation**

1. The team must assess circulation

To assess circulation teams must check;

Pulse 0

Skin Condition 0

Skin (Cool, Clammy, Dry) 0

**Judge's Comments:**

Did not perform this task.

**Page 2 Merits Subtotal 6**

**SCENARIO #1 CONTINUED**

**Rapid Body Survey**

**Teams must check;**

**1. The head and neck**

**3**

**Judge's Comments:**

**2. The chest**

**3**

**Judge's Comments:**

**3. The abdomen**

**3**

**Judge's Comments:**

**4. The pelvis and buttocks**

**3**

**Judge's Comments:**

**5. The legs**

**3**

**Judge's Comments:**

**Page 3 Merits Subtotal 15**

**SCENARIO #1 CONTINUED**

**6. The shoulders and arms.**

**3**

**Judge's Comments:**

**Secondary Assessment**

**The team must obtain a complete history of the patient by using SAMPLE.**

**1. Signs and Symptoms**

What the patient can tell you. What the rescuer can see.

**3**

**Judge's Comments:**

**2. Allergies**

Is the patient allergic to any medications or anything else?

**3**

**Judge's Comments:**

**3. Medication**

Is the patient taking any medications?

**3**

**Judge's Comments:**

**4. Pertinent Medical History**

Does the patient have any medical history the teams should know about?

**3**

**Judge's Comments:**

**Page 4 Merits Subtotal** 15



**SCENARIO #1 CONTINUED**

**5. Last Oral Intake**

What and when did the patient last eat?

3

**Judge's Comments:**

**6. Events leading to the Injury/Illness**

What were the events that led to the incident?

3

**Judge's Comments:**

**7. To treat for shock teams must;**

Reassure patient

3

Keep patient warm

3

Keep patient at rest

3

**Judge's Comments:**

**Treatment of Injuries**

**1. Apply tourniquet to leg**

Teams must apply tourniquet appropriately and label.

1

**Judge's Comments:**

Wrong location; no tape on forehead; no pressure or elevation.

Page 5 Merits Subtotal 16

SCENARIO #1 CONTINUED

2. **Apply dressing to leg**  
Apply dressing to crushing injury of leg. 3

**Judge's Comments:**

3. **Appropriately package the patient for transport.**  
Load and secure the patient in the rescue basket. 1

**Judge's Comments:**

No log roll; no straps on head when lifted.

4. **Reassure until emergency services arrive** 3

**Judge's Comments:**

6. **Monitor until emergency services arrive** 3

**Judge's Comments:**

7. **Fill out casualty care report with the following information**

Date 0

Time 0

Team number (identity) 0

Location 0

Patient's Name 0

Vital Signs 0

**Page 6 Merits Subtotal** 10

**SCENARIO #1 CONTINUED**

Treatment

0

Injury Location on Body Outline

0

**Judge's Comments:**

Did not do,

**8. Rough Handling Deductions**

**Minus 5**

**Judge's Comments:**

Used a straddle lift/ log roll

Page 7 Scenario #1 Total Merits 71 less Total Demerits 5 Total Score 66

**Judge's Signature:** Kim Boyd and Harvey Farwell

**INTERNATIONAL  
MINE RESCUE COMPETITION  
2020**

**FIRST AID COMPETITION**

**TEAM:** KONKOLA COPPER MINES-KCM NCHANGA COPPER MINE

**Scenario - Patient #2 (A1)** This patient was working at the breaker box when the air compressor exploded. The mine rescue team finds the patient lying beside the breaker box dazed, holding out his hands. He has electrical burns to the R hand and L shoulder. After three minutes (or the team completes all treatment, they are going to perform) the patient becomes unconscious and unresponsive, CPR is required. Will be required to do two sets of CPR and utilize the AED.

**SCENE SURVEY**

**Merits Points**

**1. Assess Hazards**

If the team looks for live wires, debris around area they will have demonstrated assessing and correcting hazards

**3**

**Judge's Comments:**

**2. Use examination gloves**

Examination gloves must be used before contact with patient occurs

**3**

Gloves must be removed and disposed of properly

**3**

**Judge's Comments:**

**Page 1 Merits Subtotal** 9

**SCENARIO #2 CONTINUED**

0

**3. Rescue**

The victim will be lying on the ground moaning. The team will avoid wires until assurance they are not live. The patient will not speak will only moan for the first three minutes.

**Judge's Comments:**

Did not score

**4. Identify Themselves as Emergency Responders**

3

The team members should identify themselves and ask the patient if he wants help.

**Judge's Comments:**

**1. Assess Breathing**

**The Level of Consciousness of Patient #2 changes 3 minutes after the scenario begins (or the team completes their treatment). Patient's Level of Consciousness changes from non-responsive to unconscious**

**To reassess breathing teams must:**

Look for the rise and fall of the chest

3

Feel for air movement

3

Listen for air movement

3

**Judge's Comments:**

## SCENARIO #2 CONTINUED

### Assess Circulation

#### 2. The team must assess circulation

Pulse 3

Skin Condition 3

Skin (Cool, Clammy, Dry, Moist) 3

#### Judge's Comments:

3. When the patient becomes unconscious teams must place patient in the supine position. 3

#### Judge's Comments:

4. **Begin CPR** 2  
Teams must run two sets of CPR and utilize the use of an AED.

#### Judge's Comments:

Did not give breaths for the 1st 120 compressions.

Page 3 Merits Subtotal 14

**SCENARIO #2 CONTINUED**

**Triage**  
**Rapid Body Survey**

**Teams must check;**

1. The head and neck

3

**Judge's Comments:**

2. The chest

3

**Judge's Comments:**

---

3. The abdomen

3

**Judge's Comments:**

4. The pelvis and buttocks

2

**Judge's Comments:**

Did not check buttocks

5. The legs

2

**Judge's Comments:**

Did not check back of legs

6. The shoulders and arms

3

**Judge's Comments:**

**SCENARIO #2 CONTINUED**

**Secondary Assessment**

**The team must obtain a complete history of the patient by using SAMPLE.**

**1. Signs and Symptoms**

What the patient can tell you. What the rescuer can see.

3

**Judge's Comments:**

**2. Allergies**

Is the patient allergic to any medications or anything else?

3

**Judge's Comments:**

**3. Medication**

Is the patient taking any medications?

3

**Judge's Comments:**

**4. Pertinent Medical History**

Does the patient have any medical history the teams should know about?

3

**Judge's Comments:**

**5. Last Oral Intake**

What and when did the patient last eat?

3

**Judge's Comments:**



**SCENARIO #2 CONTINUED**

**6. Events leading to the Injury/Illness**  
What were the events that led to the incident?

3

**Judge's Comments:**

**7. To treat for shock teams must;**

Reassure patient

3

Keep patient warm

3

Keep patient at rest

3

**Judge's Comments:**

8. Teams must transport patient #2 to the evacuation area first

0

**Judge's Comments:**

Do not score

Page 6 Merits Subtotal 12

**SCENARIO #2 CONTINUED**

**Patient Care Report**

**1. Teams to fill out casualty care report with the following information**

Date	0
Time	0
Team number (identity)	0
Location	0
Patient's Name	0
Vital Signs	0
Treatment	0
Injury Location on Body Outline	0

**Judge's Comments:**

Did not complete

**2. Rough Handling Deductions**

**Minus 3**

**Judge's Comments:**

Lifted patient and placed on back board instead of rolling.

Page 7 Scenario #2 Total Merits 78 less Total Demerits 3 Total Score 75

**Judge's Signature:** \_\_\_\_\_

**INTERNATIONAL  
MINE RESCUE COMPETITION  
2020**

**FIRST AID COMPETITION**

**TEAM:** KONKOLA COPPER MINES-KCM NCHANGA COPPER MINE

**Scenario - #3** Patient #3 (Jane) This patient has a nail protruding from her safety glasses involving her eye. She also has a foreign body in her leg. She appears oblivious to either injury as she goes back and forth between injured co-workers trying to aid them. She has blood running from both injuries.

**SCENE SURVEY**

**1. Assess Hazards**

Asses for live wires, standing water, loose rubble.

3

**Judge's Comments:**

**2. Use examination gloves**

Examination gloves must be used before contact with patient occurs

3

Gloves must be removed and disposed properly

3

**Judge's Comments:**

Page 1 Merits Subtotal 9

**SCENARIO #3 CONTINUED**

**3. Identify Themselves as Emergency Responders**

3

The team members should identify themselves and ask the patient if he wants help.

**Judge's Comments:**

**1. The team must assess the mental status of the patient.**

Ask about the incident

3

Ask if patient aware of day, time

3

**Judge's Comments:**

**2. Stabilization of foreign bodies.**

Applies dressing that stabilizes both foreign bodies

3

Controls the bleeding.

5

**Judge's Comments:**

Page 2 merits subtotal 17

## SCENARIO #3 CONTINUED

### Assess Circulation

#### **1. The team must assess circulation**

To assess circulation teams must check;

Pulse

3

Skin Condition

3

Skin (Cool, Clammy, Dry)

3

**Judge's Comments:**

### Rapid Body Survey

**Teams must check;**

1. The head and neck

3

**Judge's Comments:**

2. The chest

3

**Judge's Comments:**

3. The abdomen

3

**Judge's Comments:**

**SCENARIO #3 CONTINUED**

**4. The pelvis and buttocks**  
**Judge's Comments:**

**3**

**5. The legs**

**Judge's Comments:**

**3**

**6. The shoulders and arms**

**Judge's Comments:**

**3**

**Secondary Assessment**

**The team must obtain a complete history of the patient by using SAMPLE.**

**1. Signs and Symptoms**

What the patient can tell you. What the rescuer can see.

**3**

**Judge's Comments:**

**2. Allergies**

Is the patient allergic to any medications or anything else?

**3**

**Judge's Comments:**

**SCENARIO #3 CONTINUED**

**3. Medication** 3  
Is the patient taking any medications?  
**Judge's Comments:**

---

**4. Pertinent Medical History** 3  
Does the patient have any medical history the teams should know about?  
**Judge's Comments:**

**5. Last Oral Intake** 3  
What and when did the patient last eat?  
**Judge's Comments:**

**6. Events leading to the Injury/Illness** 3  
What were the events that led to the incident?  
**Judge's Comments:**

**7. To treat for shock teams must;**

Reassure patient 3

Keep patient warm 3

Keep patient at rest 3

**Judge's Comments:**

## SCENARIO #3 CONTINUED

### Treatment of Injuries

#### 1. Treat both foreign body areas

If team tries to remove foreign body rough handling will apply  
Fully expose injury without removing the foreign body

	3
Maintain areas for position of comfort	3
Apply dressing(s)	0
Pad above and below wound	3
Apply a bandage	3
Apply bandage to support the foreign bodies	3
Cover both eyes	3

### Patient Care Report

1. Teams to fill out casualty care report with the following information

Date	2
Time	0
Team number (identity)	0
Location	0
Patient's Name	2
Vital Signs	0
Treatment	3
Injury Location on Body Outline	0

### Judge's Comments:

Did not use a cup to cover nail in eye.  
The official care report card was not complete but a card documenting patient care was completed.



**SCENARIO #3 CONTINUED**

**2. Rough Handling Deductions**

**Minus**

**Judge's Comments:**

Page 7 Scenario #3 Total Merits 105 less Total Demerits 0 Total Score 105

**Judge's Signature:** \_\_\_\_\_

**INTERNATIONAL  
MINE RESCUE COMPETITION  
2020**

**FIRST AID COMPETITION**

**TEAM:** KONKOLA COPPER MINES-KCM NCHANGA COPPER MINE

**Scenario - #4** Patient #4 (Tina) Obvious Deceased worker. Her head is amputated from her body with pool of bright red blood. It appears that pieces of metal became air borne from the explosion of the air supply tank connected to the air compressor.

**SCENE SURVEY**

**1. Assess Hazards**

Securing the environment. Assure the stability of the blade.

3

**Judge's Comments:**

**2. Use examination gloves**

Examination gloves must be used before contact with patient occurs

3

Gloves must be removed and disposed of properly

3

**Judge's Comments:**

**Page 1 Merits Sub Total** 9

## SCENARIO #4 CONTINUED

### Assess Breathing

1. The team must assess the airway.

3

To assess the airway the team should talk to the patient. Obviously deceased amputated head.

**Judge's Comments:**

### Assess Circulation

1. The team must assess circulation

To assess circulation teams must check;

Pulse

3

**Judge's Comments:**

### **Patient Care Report**

1. Teams to fill out casualty care report with the following information

Date

0

Time

0

Team number (identity)

0

Location

0

Patient's Name

0

Vital Signs

0

Treatment

0

Injury Location on Body Outline

0

**Judge's Comments:**

No card completed.

**Page 2 Merits**

Sub Total 6

**SCENARIO #4 CONTINUED**

**Judge's Signature:** \_\_\_\_\_

**Page 2 Scenario #4** Total Merits 15 less Total Demerits 0 Total Score 15



**INTERNATIONAL  
MINES RESCUE COMPETITION  
2020  
FIRST AID COMPETITION  
CPR AED**

**Judges Instructions**

TEAM:

Scoring:        0 = not done  
                    1 = poor attempt  
                    2 = needs improvement  
                    3 = excellent meets all requirements

KONKOLA COPPER MINES-KCM NCHANGA COPPER MINE

1. Every line must be scored.
2. A score of 0, 1 or 2 **must be explained** by the judges or the Chief Judge will remove the demerit.
3. When a score of 3 is applied, comments are encouraged
4. If a team runs out of time a score of 0 will apply to remaining actions

**Rough Handling**

1. Rough handling demerits will be deducted from the total score
2. Judges can deduct 1 to 5 points per each patient
4. Rough handling demerits will have a maximum of 10 points
3. Rough handling deductions must be explained by the judges

**Scenario**

The team will transport the patient with the highest priority from the accident scene to the receiving area (sea containers). Upon arrival at the receiving area the patient will be told the patient is vital signs absent.

The team will be required to begin CPR, provide ventilations with a pocket mask and use an AED. A CPR mannequin in a stretcher will be located in the receiving area. When five team members have completed CPR and ventilations the competition will be completed.

CPR/AED Total Merits 105 less Total Demerits 3 Total Score 102





**INTERNATIONAL  
 MINE RESCUE COMPETITION  
 2020  
 FIRST AID COMPETITION  
 CPR AED**

**TEAM:** KONKOLA COPPER MINES-KCM NCHANGA COPPER MINE

**Team Approach**

1. Captain calls in and provides an update

Team must update control centre

3

**Judge's Comments:**

**2. Initial Response**

**A team member**

Assesses patient

Prepares to start CPR

3

1

**A team member**

Sets up personal pocket mask

3

**A team member**

Gets the AED

Sets up the AED

3

2

**Judge's Comments** \_\_\_\_\_

Started CPR late by captain; Had trouble setting up.

Page 1 Merits Subtotal 15





**3. Use examination gloves**

Examination gloves must be used before contact with patient occurs	3
Airway check	3
Breathing check	3
Circulation check	3

**Judge's Comments:**

<b>4. Rescuer #1 to start CPR Immediately (without delay)</b>	0
Proper hand placement, place the heel of one hand on the idle of the person's chest.	1
Place the other hand on top.	1
Do 30 compressions. (Compression depth 5cm (2 inches)	1
Allow the chest to recoil after each compression.	1
Compression Rate 30 compressions in about 18 seconds at a rate of 100 - 120	1

**Judge's Comments:**

Captain was the first to do CPR.

**5. Rescue breather #1 with a Resuscitation Mask (pocket mask)**

Place the mask so that it covers the person's mouth and nose.	3
Position the lower rim of the mask between the person's lower lip and chin.	3
The opposite end of the mask should cover the nose	3

Page 2 Merits Subtotal 26





When giving rescue breaths, maintain a good seal by using both hands to hold the mask in place.	2
Maintain an open airway using head tilt chin lift.	0
Give two breaths	3
Watch to see if chest is rising and falling.	3
Repeat 2 breaths every thirty compressions	3

**Judge's Comments:**

Team member did not maintain a good seal; did not do head tilt/ chin lift.

**6. AED arrives**

Open and turn on the AED	2
Remove any clothing or objects (including Jewelry) from the person that may come in contact with the pads.	3
Remove any medical patches, including nitroglycerin, nicotine, or hormone.	3
Ensure that the chest is dry and free of hair so the pads can stick.	3
Properly place the AED Pads (follow the diagrams on the pads)	2
Pads must be at least 2.5cm (1") between pads when placed on the chest.	3
Follow the AED's automated prompts	3

Judge's Comments: \_\_\_\_\_

Trouble starting AED; turned on then off; Trouble placing pads on first attempt.

Page 3 Merits Subtotal 30







**When the AED prompts you to give a shock the team should:**

- Stand clear 3
- Say "I'm clear, you're clear, everybody's clear." 3
- Make sure that no one is touching the person in cardiac arrest during analyze and shock modes. 3

**Judges' Comments:**

**7. Two-Rescuer CPR**

Switch quickly with another rescuer every two minutes (between cycles) to maintain the quality of CPR. 3

Feel for carotid pulse 0

No signs of circulation continue CPR 0

**Judge's Comments:**

Did not check carotid pulse or circulation.

**CPR Rescuer #2**

Proper hand placement, place the heel of one hand on the middle of the person's chest. 3

Place the other hand on top. 3

Do 30 compressions. (Compression depth 5cm (2 inches)) 2

Page 4 Merits Subtotal 20





Allow the chest to recoil after each compression.	3
Compression Rate 30 compressions in about 18 seconds at a rate of 100 - 120	2

**Judge's Comments:**

57% correct compression rate; 67% on depth.

**Rescue Breather #2:**

Set up personal pocket mask	1
Place the mask so that it covers the person's mouth and nose.	1
Position the lower rim of the mask between the person's lower lip and chin.	1
The opposite end of the mask should cover the nose	1
When giving rescue breaths, maintain a good seal by using both hands to hold the mask in place.	1
Maintain an open airway using head tilt chin lift.	1
Give two breaths	1
Watch to see if chest is rising and falling.	1
Repeat 2 breaths every thirty compressions	1

**Judge's Comments:**

Done by captain

Page 5 Merits Subtotal 14





Follow the AED's automated prompts

0

**When the AED prompts you to give a shock the team should:**

Stand clear

0

Say "I'm clear, you're clear, everybody's clear."

0

Make sure that no one is touching the person in cardiac arrest during analyze and shock modes.

0

Judge's Comments:

**8. Two-Rescuer CPR**

Switch quickly with another rescuer every two minutes (between cycles) to maintain the quality of CPR.

0

Feel for carotid pulse

0

No signs of circulation continue CPR

0

Judge's Comments:

**CPR Rescuer #3**

Proper hand placement, place the heel of one hand on the middle of the person's chest.

0

Place the other hand on top.

0

Do 30 compressions. (Compression depth 5cm (2 inches))

0

Page 6 Merits Subtotal 0





Allow the chest to recoil after each compression. 0

Compression Rate 30 compressions in about 18 seconds at a rate of 100 - 120 0

**Judge's Comments:**

**Rescue Breather #3**

Set up personal pocket mask 0

Place the mask so that it covers the person's mouth and nose. 0

Position the lower rim of the mask between the person's lower lip and chin.  
 The opposite end of the mask should cover the nose 0

When giving rescue breaths, maintain a good seal by using both hands to hold  
 the mask in place. 0

Maintain an open airway using head tilt chin lift. 0

Give two breaths 0

Watch to see if chest is rising and falling. 0

Repeat 2 breaths every thirty compressions 0

**Judge's Comments:**

Page 7 Merits Subtotal 0





Follow the AED's automated prompts 0

**When the AED prompts you to give a shock the team should:**

Stand clear 0

Say "I'm clear, you're clear, everybody's clear." 0

Make sure that no one is touching the person in cardiac arrest during analyze and shock modes. 0

Judge's Comments:

**9. Two-Rescuer CPR**

Switch quickly with another rescuer every two minutes (between cycles) to maintain the quality of CPR. 0

Feel for carotid pulse 0

No signs of circulation continue CPR 0

Judge's Comments:

**CPR Rescuer #4**

Proper hand placement, place the heel of one hand on the middle of the person's chest. 0

Place the other hand on top. 0

Do 30 compressions. (Compression depth 5cm (2 inches) 0

Page 8 Merits Subtotal 0





Allow the chest to recoil after each compression. 0

Compression Rate 30 compressions in about 18 seconds at a rate of 100 - 120 0

**Judge's Comments:**

**Rescue Breather #4**

Set up personal pocket mask 0

Place the mask so that it covers the person's mouth and nose. 0

Position the lower rim of the mask between the person's lower lip and chin.  
 The opposite end of the mask should cover the nose 0

When giving rescue breaths, maintain a good seal by using both hands to hold  
 the mask in place. 0

Maintain an open airway using head tilt chin lift. 0

Give two breaths 0

Watch to see if chest is rising and falling. 0

Repeat 2 breaths every thirty compressions 0

**Judge's Comments:**

Page 9 Merits Subtotal 0





Follow the AED's automated prompts 0

**When the AED prompts you to give a shock the team should:**

Stand clear 0

Say "I'm clear, you're clear, everybody's clear." 0

Make sure that no one is touching the person in cardiac arrest during analyze and shock modes. 0

Judge's Comments:

**10. Two-Rescuer CPR**

Switch quickly with another rescuer every two minutes (between cycles) to maintain the quality of CPR. 0

Feel for carotid pulse 0

No signs of circulation continue CPR 0

Judge's Comments:

**CPR Rescuer #5**

Proper hand placement, place the heel of one hand on the middle of the person's chest. 0

Place the other hand on top. 0

Do 30 compressions. (Compression depth 5cm (2 inches) 0

Page 10 Merits Subtotal 0





Allow the chest to recoil after each compression.	0
Compression Rate 30 compressions in about 18 seconds at a rate of 100 - 120	0

**Judge's Comments:**

**Rescue Breather #5**

Set up personal pocket mask	0
Place the mask so that it covers the person's mouth and nose.	0
Position the lower rim of the mask between the person's lower lip and chin. The opposite end of the mask should cover the nose	0 0
When giving rescue breaths, maintain a good seal by using both hands to hold the mask in place.	0
Maintain an open airway using head tilt chin lift.	0
Give two breaths	0
Watch to see if chest is rising and falling.	0
Repeat 2 breaths every thirty compressions	0

**Judge's Comments:**

Page 11 Merits Subtotal 0







Follow the AED's automated prompts 0

**When the AED prompts you to give a shock the team should:**

Stand clear 0

Say "I'm clear, you're clear, everybody's clear." 0

Make sure that no one is touching the person in cardiac arrest during analyze and shock modes. 0

Judge's Comments:

Rough Handling Deductions 3

Judge's Comments:

Continued doing CPR while the patient was breathing.

Page 12 Merits Subtotal 0

CPR/AED Total Merits 105 less Total Demerits 3 Total Score 102

Judge's Name: \_\_\_\_\_

Judge's Name: \_\_\_\_\_







2020 International Mines Rescue Contest  
 September 13<sup>th</sup>-15<sup>th</sup> 2022  
 Fire Fighting Final Score sheet

*Handwritten initials in red and blue ink.*

2022 IMRC FIRE FIGHTING  
 SEPTEMBER 13<sup>TH</sup> THRU 15<sup>TH</sup> 2022  
 TOTAL SCORESHEET

TEAM NAME: KONKOLA COPPER MINES-KCM NCHANGA COPPER MINE

DATE OF COMPETITION: 09/14/2022

FIRE HOSE HOOK UP SCORE: 15

FIRE HOSE and NOZZLE MANAGEMENT SCORE: 12

LIVE FIRE/REMOTE MONITOR SET UP SCORE: ~~17~~ 20 AJ

MINUS ANY DEMERITS: 3

TOTAL FIRE FIGHTING SCORE: ~~41~~ 44 AJ



International Mines Rescue Competition  
 Since 1999





## 2020 International Mines Rescue Competition

### Fire Fighting Scenario Scoresheets

September 13<sup>th</sup> – 15<sup>th</sup> 2022

TEAM NAME: KONKOLA COPPER MINES-KCM NCHANGA COPPER MINE

COMPETITION DATE: 09/14/2022

#### Judges Instructions

##### Merit Point Scoring:

- 0 = not done
- +1 = poor attempt
- +2 = needs improvement
- +3 = excellent meets all requirements

1. Every line must be scored.
2. A score of 0, 1 or 2 **must be explained** by the judges.
3. When a score of 3 is applied, comments are encouraged

##### **Rough Handling**

1. Rough handling demerits will be deducted from the total score
2. Judges can deduct 1 to 5 points per incident of rough handling of equipment
4. Rough handling demerits will have a maximum of 10 points
3. Rough handling deductions must be explained by the judges

##### **Team Safety:**

**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**



## Fire Hose Hook Up

1. Did the team flush the fire hydrant?

3

**Judge's Remarks:**

2. Did a team member remain at the fire hydrant until all hoses were established? 3

**Judge's Remarks:**

### Fire Hose Lays

1. Was fire hose lay properly flushed?

3

**Judge's Remarks:**

2. Was open end of fire hose secured during flushing process?

3

**Judge's Remarks:**

3. Were connections properly hand tightened?

3

**Judge's Remarks:**





## Fire Hose and Nozzle Management

1. Were teams split up equally on each hose lay?

3

**Judge's Remarks:**

2. Did team flush the fire nozzle?

2

**Judge's Remarks:**

Right hand nozzle was not in proper during flush and was not fully flushed.

3. Did fire hose team maintain an arm's length spacing at all times and keep the hose level and straight?

1

**Judge's Remarks:**

Team members did not maintain arm's length spacing during dynamic. Hose was not level and straight during advancement.

4. Did the nozzle man open the flow to the nozzle slowly, and deliberately?

3

**Judge's Remarks:**



5. Did the nozzle man dictate terms of advancement and maintain control of stream? 2

**Judge's Remarks:**

Great communication from team captain, but the nozzle man failed to communicate and direct the team.

6. Did the team complete the pattern in the time allotted? 1

**Judge's Remarks:**

Team broke the sequence in which the pattern was to be completed. The right side performed tasks that should have been completed by the left side and vice versa.

**Live Fire/Remote Monitor Set Up**

1. Did team members correctly don their apparatus? 2

**Judge's Remarks:**

Team members didn't test LDV after donning, blew out air.

2. Did fire team advance with full fog pattern to designated point? 2

**Judge's Remarks:**

One team advanced with full fog pattern while the other advanced in flush position.

3. Were team members positioned along the inside of the hose lays? 3

**Judge's Remarks:**



4. Did trailing persons retrieving equipment maintain contact with the hose line? 3 /

**Judge's Remarks:**

5. Was monitor properly set up? 0

**Judge's Remarks:**

Monitor was not properly set up. Team did not gate down before cutting off water. Team cut off water completely in front of active fire.

6. Did the team utilize proper techniques in transitioning from the nozzle to the monitor?

~~0~~ 3 AJ

**Judge's Remarks:**

~~Monitor was not properly set up. Team did not gate down before cutting off water. Team cut off water completely in front of active fire.~~ AJ

7. Did the team flush the monitor after it was established? 0

**Judge's Remarks:**

Team did not flush the monitor.

8. Did the team adjust the monitor to a fire fighting pattern? 1 /

**Judge's Remarks:**

Team required judge assistance to adjust to a fire fighting pattern.



9. Did team members all maintain hand contact with hose on retreat to fresh air base?

3 ✓

**Judge's Remarks:**

10. Did team bring out nozzle and hose clamp?

3 ✓

**Judge's Remarks:**

Burn Pad Time 17:01

Burn Tunnel Time 22:02

Total Time 39:03

Total Merits: ~~44~~ 47 <sup>AJ</sup>

Minus Demerits: 3

**Judge's Remarks:**

Gloves should have been donned sooner. Captain had to advise team members to put on gloves. Team members exceeded the end goal line two times. -2  
Poor hose management. Hose was not in proper position during dynamic. -1

Total Score ~~41~~ 44 <sup>AJ</sup>







*MAW  
AW*

**INTERNATIONAL  
MINES RESCUE COMPETITION  
2020**

September 13-15, 2022

**BG 4 TECHNICIAN**  
**TOTAL SCORE and WORKING TIME**

TEAM NAME: KONKOLA COPPER MINES-KCM NCHANGA COPPER MINE

TECHNICIAN NAME: Newton Chisala

DATE: 09/15/2022

TOTAL MERITS: ~~45~~ 45 *MAW*

TOTAL DEMERITS: 1

TOTAL POINTS: ~~45~~ 44 *MAW*

WORKING TIME (IN Minutes and Seconds) 25:59

**Merit Point Scoring:**

- 0 = not done
- +1 = poor attempt
- +2 = needs improvement
- +3 = excellent meets all requirements

1. Every line must be scored.
2. A score of 0, 1 or 2 **must be explained** by the judges.
3. When a score of 3 is applied, comments are encouraged
4. If the Technician runs out of time a score of 0 will apply to remaining actions

**Rough Handling or abuse of Equipment:**

1. Rough handling demerits will be deducted from the total score
2. Judges can deduct 1 to 5 points per incident of rough handling of equipment
4. Rough handling demerits will have a maximum of 10 points
3. Rough handling deductions must be explained by the judges





## SCENARIO

When the Technician arrives, they will find;

- A fully assembled BG 4 Breathing Apparatus.
- A kit of tools
- An isolation test kit
- An RZ 7000
- Liquid for Detection of Leaks
- All spare parts that are necessary to carry out the task

### Merits Points

#### Visual Inspection

1. TECHNICIAN MUST VISUALLY CHECK THE FOLLOWING:  
FACEPIECE, HOSES AND REFILLABLE CANISTER.

3

Judge's Comments:

#### 2. Insert O2 Cylinder

Cylinder Pressure Must be greater than 2,600 psi  
Check the Hydrostat check date

3

Judge's Comments:





**3. Low Pressure Warning**

Zero Adjust (Automatic)  
Connect Hose Coupler  
Set to Positive Pressure Pumping (Low Pressure Warning should  
Activate at less than 1.4 mbar

3

**Judge's Comments:**

**4. Inhalation Valve**

Set to Positive Pressure Pumping (Tightly pinch exhalation hose  
And pump slowly until 10 mbar is indicated

3

**Judge's Comments:**

**5. Exhalation Valve**

Set to Negative Pressure Pumping (Tightly pinch inhalation hose  
And pump slowly until -10 mbar is indicated

3

**Judge's Comments:**





**6. Drain Valve:**

Set to Positive Pressure Pumping

Fit sealing cap over relief valve & pump until the Drain Valve Opens

The Drain Valve Should Open between 10 mbar and 18 mbar

3

**Judge's Comments:**

**7. Leak Test w/Positive Pressure**

**Set to Leak Test**

Press Button to Reduce Pressure to 7.5 mbar

Press OK Button to Activate Timer

Pressure Should **NOT** change by more than 1 mbar in 1 minute

**Vent Tester**

Remove Sealing Cap

0

**Judge's Comments:**

Test failed. Contestant never located or corrected the hole in the relief valve.

**8. Relief Valve**

**Set to Positive Pressure Pumping**

Pump until Relief Valve Opens. It should be between 2 & 5 mbar

3

**Judge's Comments:**





**9. High Pressure Leak Test**

**Set to Leak Test**

Open cylinder valve. (Cylinder pressure must be greater than 2,600 psi)  
Sentinel Displays the **CLOSE CYLINDER ICON**: Close Cylinder Valve  
Sentinel Displays the **OPEN CYLINDER ICON**: Open Cylinder Valve

**Vent Tester**

Breathing Bag will deflate

3

**Judge's Comments:**

**10. Constant Metering Valve**

**Set to Positive Pressure Pumping**

Fit Sealing Cap over Relief Valve & Pump until Breathing Bag is Inflated

**Dosage L/min**

Constant Dosage should lie between 1.5 and 1.9 L/min

3

**Judge's Comments:**

**11. Minimum Valve**

**Set to Negative Pressure Pumping**

Gently Pump & Remove Sealing Cap from Relief Valve

Pump slowly until hissing sound is heard

Minimum Valve should Open Between 0.1 % 2.5 mbar

3

**Judge's Comments:**





**12. Bypass Valve**

**Set to Leak Test**

Press red bypass button, oxygen must be heard flowing into the circuit  
Breathing Bag Inflates

3

**Judge's Comments:**

**13. Residual Pressure Warning**

**Set to Leak Test**

Close Cylinder Valve. Watch Sentinel Display Unit  
Warning should be generated at approximately 700 psi  
Unplug coupling from RZ 7000 & Replace Sealing Cap on Plug In  
Coupling when Pressure reaches 0 psi

3

**Judge's Comments:**

**14. Battery Test**

On Activation & Deactivation the Sentinel automatically checks &  
Displays Battery Capacity  
Battery Warning 1: When Benching REPLACE BATTERY  
Battery Warning 2: REPLACE BATTERY BEFORE ANY NEW OPERATION  
Turn off Unit by simultaneously pressing right & left buttons

3

Judge's Comments: \_\_\_\_\_





**15. BG 4 Fully Assembled and Ready for Use:**

Facepiece Defogged	
Facepiece Connected	0

Judge's Comments: \_\_\_\_\_

Unit not ready for service. Unit did not pass positive pressure test. Contestant stated, "Ready for use" when unit was not.

**16. BG 4 Problems:**

Wrong Nosecup	0
Damaged Drain Valve	3
Damaged Drain Valve Disk	3
Damaged Relief Valve	0
Readout Cover Missing	0

Judge's Comments:

Unit not ready for service. Unit did not pass positive pressure test. Contestant stated, "Ready for use" when unit was not.

Rough Handling Judge's Comments:

Contestant failed to locate or correct the relief valve housing, inner mask and external lens.

Total Merits	<u>45</u>
less Total Demerits	<u>1</u> <i>EW</i>
Total Score	<del>45</del> <u>44</u> <i>EW</i>

Working Time: 25:59

Judge's Name: John Helmick

Judge's Name: Marcus Benedict









*MA*  
*DL*

### THEORY ASSESSMENT TOTAL SCORESHEET

TEAM NAME: Zambia Team 1 Konkola Copper

DATE OF COMPETITION: 09/15/2022

TOTAL SCORE: 68

TIME: 22.23

QUESTION NUMBER	NUMBER OF ATTEMPTS	SCORE
1.	1	3
2.	1	3
3.	1	3
4.	1	3
5.	3	1
6.	1	3
7.	1	3
8.	1	3





Theory Assessment Total Scoresheet  
IMRC 2020  
National Mine Health & Safety Academy  
Beaver, WV, U.S.A.

QUESTION NUMBER	NUMBER OF ATTEMPTS	SCORE
9.	1	3
10.	1	3
11.	1	3
12.	1	3
13.	1	3
14.	1	3
15.	1	3
16.	1	3
17.	1	3
18.	1	3
19.	1	3



International Mines Rescue Competition  
Since 1999





Theory Assessment Total Scoresheet  
IMRC 2020  
National Mine Health & Safety Academy  
Beaver, WV, U.S.A.

QUESTION NUMBER	NUMBER OF ATTEMPTS	SCORE
20.	2	2
21.	2	2
22.	1	3
23.	1	3
24.	1	3



