

47th International Collegiate Mining Games Camborne 2025

Registration and Rules Package



Hosted by Camborne School of Mines
Cornwall, UK



The IMG Team of the Camborne School of Mines, Cornwall would like to invite you to participate in the 47th International Collegiate Mining Competition. The Competition will be hosted at King Edward Mine Museum, the historic home of CSM and will be held from the **19th-22nd March 2025**.

The Intercollegiate Mining Competition started in 1978 in honour and remembrance of the fallen miners from the Sunshine Mine Disaster of 1972. The competition ensures those miners will not be forgotten and the old school mining methods continue to be taught and carried out by mining students around the globe.

Today, the tradition continues as we plan to welcome hundreds of students from all over the world to the historic mining district of Cornwall - the home of the Cousin Jacks who emigrated around the world to share their knowledge and experience which shaped the early mining industry globally.

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About Camborne School of Mines Mining Games Teams

The Camborne School of Mines (CSM) International Mining Games Team is an entirely student led and organised society based out of the CSM campus in Falmouth, Cornwall. The CSM Mining Games Team has existed since 2006 and Camborne have been represented at every Intercollegiate Mining Games since. The team is open to all at CSM, and pride themselves on the inclusivity and unique opportunities they offer to students. In recent years, we have strived to enter both Men's and Women's teams and enjoy carrying out a 'mining games tour' which includes site visits, alumni networking events and overseas sponsors visits as a part of our journey to compete at the international venues.

CSM Mining Games Team identify and compete under the moniker of 'Team GB' as they are the only British team to ever compete in the competition. The team have previously hosted the games twice, in 2012 and 2018, and last won the Men's competition in Camborne in 2018.

King Edward Mine Museum

King Edward Mine is at the eastern part of the South Condurrow Mine. Originally worked under the name of Old Tye, South Condurrow was reopened in 1844 together with Great Condurrow about 300m to the north. It was renamed South Condurrow Mine in 1850 and worked for many years before producing any profitable tin in 1864.

The discovery of the Great Flat Lode in the 1870s was a huge boost to the area's mines and lead to South Condurrow paying a dividend for the first time in 1875. The mine continued to pay annual dividends until 1893 and finally closed in 1896.

In 1897, CSM took over, and subsequently developed, the abandoned eastern part of the South Condurrow Mine, renamed King Edward Mine in 1901. King Edward Mine was completely re-equipped, both on surface and underground by CSM, with modern machinery reflecting what was then considered the best Cornish practice. All of the buildings from that period have survived to this day.

For a small college like Camborne School of Mines to take on a mine on this scale was a massive undertaking and is probably unprecedented in mining education. The re-equipping started almost immediately in 1897, and the School purchased a Holman Bros compressor, capable of driving two rock-drills. A new Survey office was built, and a new head-frame erected above Engine Shaft. The set of Californian Stamps at King Edward Mine was made by Messrs Fraser and Chalmers of East Kent, under license and came from the Paris Exposition of 1900. The building that houses the stamps was specially constructed to house them and is now Grade II* listed. Californian Stamps are now very rare and ours are believed to be the only working set remaining in Europe.

The mine regularly produced tin up until World War 1 when operations were suspended, but by 1920 King Edward Mine was back in production. This was short-lived for in 1921 the adjacent deeper Grenville Mine stopped working. As the two mines were interconnected, the consequent flooding of Grenville also flooded the King Edward workings. Underground operations, on a much-reduced scale, were transferred to a dry shallow section of the Great Condurrow Mine to the north. However, the surface area of King Edward Mine was retained and used for teaching mining, ore dressing and surveying. The remainder of the lecturing continued to be carried out at the main campus in Camborne, and since 2004 in the current home of CSM at Penryn Campus.

If you would like to find out more about King Edward Mine Museum please go to <https://www.kingedwardmine.co.uk/>

Registration Information

Team registration will require the team registration form to be completed by each team captain, and each competitor to individually complete the participant agreement form. Please can the team captain culminate these documents and send them together in one submission.

The cost for entry will be £800 per team (six members) with an additional £200 for any additional members (photographer, team advisor, etc.)

Payment can be made via bank transfer to;

CSM Mining Games Team

Sort Code: 20-87-94

Account Number: 63035603

Accommodation will be included for all student teams at Clowance Estate, Praze-an-Beeble, Camborne, TR14 0PT. Alumni and Sponsor teams will be expected to source their own accommodation, however it would be heavily suggested to join the rest of the teams at Clowance Estate since all travel between evening events will be originating and terminating here. Transport to and from the KEMM competition ground for the duration of the games will not be provided. It is a 4 mile, 10-15 minute journey, so we recommend sourcing alternative transport for the three days.

Team registration will only be confirmed once the required documents have been sent via email to jjm235@exeter.ac.uk **AND** registration fees have been received.

The registration deadline is **31st January 2025**.

NOTE: We understand that international bank transfers can have additional complications, if there are any issues we have an alternative payment method which we can use but please initially attempt bank transfer.

47th Intercollegiate Mining Games Team Registration Form

Team Name: _____

Team Division: _____

Team Captain

Name: _____

Email: _____

Team Member's Name:

Signature:

Shirt Size:

**Additional Team Member's
Name:**

Signature:

Shirt Size:

Team Members with Dietary Requirements:

Name

Dietary Requirement

Faculty acknowledgement & acceptance of hotel fees if damage occurs:

Name: _____ **Email:** _____

Signature:

Participant Agreement Form

The undersigned person (hereafter referred to as "Participant"), _____ (print name), wishes to participate in the 47th Intercollegiate Mining Games (hereafter referred to as "the Activity") arranged by CSM Mining Games Team and hosted at King Edward Mine Museum on 20th March to 22nd March 2025.

In consideration of CSM Mining Games Team making arrangements for and permitting and assisting Participant to take part in this Activity, the undersigned Participant and Parent or Guardian, if appropriate, agree to hold harmless, release, indemnify and forever discharge The CSM Mining Games Team its trustees, officers, employees, agents, and any persons acting on their behalf, as well as their heirs, executors and assigns from and against any and all liability, claims, demands, costs and expenses (including attorneys' fees) arising out of or in any way connected with any bodily injury or property damage in any way relating to or arising out of my participation in the Activity, even if the liability, claims, demands, costs and expenses may arise, in whole or in part, out of the negligence or carelessness of the persons or entities mentioned above.

The Participant and Parent or Guardian are aware that the Activity may include certain risks and dangers. The Participant and Parent or Guardian understand that specific risks vary depending on the level and nature of the Activity, and can range from minor personal injuries such as scratches, bruises, and sprains to major injuries such as eye injuries and back or joint injuries to catastrophic injuries resulting in paralysis or death. Risks of this Activity include, but are not limited to, the following:

- Travelling to and from the Activity
- Manual labour, including:
 - Hand Mucking - The event requires each team to run an empty ore car down the track and back to the start. Then the team must muck "ore" into the car, with only two team members mucking at any one time;
 - Hand Steel (Single Jack) Drilling - Each of 5 team members must drill for two minutes using either a 4 or a 3 lb hammer;
 - Swede Saw - Requires each team member to cut through a 6"x6" piece of lumber using a bow saw;
 - Gold Panning - Each team member uses traditional panning methods to retrieve pellets;
 - Track Stand - The teams competing in the old-fashioned version are required to build and tear down a 15' section of rail as quickly as possible. Four competitors from each team perform the work while one team member acts as crew boss and shouts instructions to ensure the rail is constructed correctly. After the rail is set up, the judges check it for mistakes. The rail must be to gauge, the spikes must be driven home and the fish plates must be bolted tightly to the standing rail. When the judges have checked the set up, the team tears down the rail as quickly as possible and the total time for set and tear down is recorded as the team score;
 - Jackleg Drilling - The jack legging event requires only two team members. Each one must drill holes into a block of concrete using an air powered jackleg drill. Each competitor gets 3 minutes to drill as deeply as possible, at which point the air is turned off;
 - Survey - Surveying is the least physical and most time consuming event in the competition. Again, only two team members are required to compete in this event. The team is given a start point with known coordinates and a backsight

azimuth. The team is required to survey, using a one minute engineer's transit and steel tape, the position of an end point about 300 feet away. The team must set at least one turning point during the survey. The total time allowed for the survey is 45 minutes and then the team has 15 minutes to complete their calculations and hand in their final coordinates.

- Inclement weather that can impact safety (rain, cold, wind, heat).
- Steep slopes, uneven terrain, loose rocks and gravel, slippery conditions.
- Working with or in near proximity to other event participants or volunteers from organisations outside of CSM Mining Games Team.

By signing this agreement as Parent or Guardian, I am consenting to Participant's participation in the Activity and acknowledge that I understand that any and all risk, whether known or unknown, is expressly assumed by me and all claims, whether known or unknown, are expressly waived in advance.

The Participant and Parent or Guardian understand and assume all the dangers and risks associated with this Activity and waive all claims or causes of action arising out of Participant's involvement in this Activity. To the best of their knowledge, Participant and Parent or Guardian are not aware of any mental or physical disability or health-related reasons or problems that would hinder or otherwise prevent participants from safely participating in the Activity. Participant and Parent or Guardian understand that they are solely responsible for any costs arising out of any bodily injury or property damage sustained through or arising from Participant's involvement in the Activity.

Participant and Parent or Guardian expressly agree that this Liability Waiver Form is intended to be as broad and inclusive as permitted by the laws of the United Kingdom, and that if any portion herein is held to be invalid or unenforceable, the balance shall continue in full legal force and effect. Participant and Parent or Guardian have carefully read this Liability Waiver Form, understand the contents herein, and are executing it voluntarily of their own free will. Participant and Parent or Guardian have had sufficient time to review and seek explanation of the provisions above, have carefully read them, understand them fully and agree to be bound by them.

I hereby consent to any publicity, including the use of my name and likeness, in connection with my participation in this Activity.

Participant's Institution: _____

Participant's Name: _____

Participant's Emergency Contact Name: _____

Participant's Emergency Contact Phone: _____

Participant's Signature: _____ **Date:** _____

Competition Itinerary

Arrival Day 19/3

Day

Check-in from **16:00**

Evening

Buses leave Clowance Estate **18:00**

Registration & Welcome Event @ Camborne RFC **18:00 – late**

Buses leave Camborne Rugby Club **00:15**

Practice Day 20/3

Day

KEMM Competition Grounds Open **08:00**

Equipment Check-in **08:00 – 12:30**

Breakfast provided at KEMM (Croust Hut) **08:30 – 10:00**

Captains Meeting (Survey Office) **13:00**

Lunch at KEMM **13:00**

KEMM Competition Grounds Close **16:00**

Evening

Buses leave Clowance Estate **19:00**

Drinking Competition @ Camborne RFC **19:00 – late**

Buses leave Camborne Rugby Club **21:00 / 00:15**

Women's/Co-Ed/Alumni (TBC) Competition Day 21/3

Day

KEMM Competition Grounds Open **08:00**

Breakfast at KEMM (Croust Hut) **08:30 – 10:00**

Lunch at KEMM **13:00**

KEMM Competition Grounds Close **16:00**

Evening

Exeter Uni/Oxford Mining Club Social @ Camborne RFC **19:00 – late**

Men's Competition (TBC) Day 22/3

Day

KEMM Competition Grounds Open **08:00**

Breakfast at KEMM (Croust Hut) **08:30 – 10:00**

Lunch at KEMM **13:00**

KEMM Competition Grounds Close **16:00**

Captain's Meeting **16:00**

Evening

Buses leave Clowance Estate **18:30**

Awards Evening @ National Maritime Museum **19:00 – late**

Buses leave Falmouth **00:00 / 01:30 / 03:30**

Competition Description

The rules included in this document have been produced in accordance with the captain's meeting held after the conclusion of the 46th Intercollegiate Mining Games at Montana Tech.

The rules will be reviewed on practise day, and at the discretion of Team Captains and the Head Judge any changes will be made in the pre-competition captains meeting. Any changes as a result of this meeting will be communicated by the event judges to each team on competition days.

Team Competition

Each team shall consist of five (5) competitors; teams may choose to have a sixth (6th) alternate competitor. Teams may interchange competitors for each event at their discretion. Each competitor may only be part of one (1) team. The team competition consists of four (4) divisions.

- Men's
- Women's
- Co-Ed
- Alumni/Sponsors

Co-Ed teams must be composed of at least two (2) women. A minimum of two (2) women in the Co-Ed division must actively participate in each five (5) person event, and at least one (1) woman must participate in any two (2) person event. Additional restrictions on Co-Ed teams are outlined in the respective event rules.

Institutions will NOT be allowed to compete with more than one Co-Ed team unless they also have a Women's team competing.

A team competing in any division which do not compete in an event for any reason will be disqualified from that event, but still be able to place in the overall standings for that division.

Five (5) competitors are required for the following events;

- Hand Muck
- Track Stand
- Panning
- Hand Steel (Single Jack) Drilling
- Swede Saw

Two (2) competitors are required for the following events;

- Jackleg Drilling
- Survey

Individual Competition

The individual competition will be held at the discretion of the organisers due to scheduling constraints. If you are interested in competing in this category please contact jjm235@exeter.ac.uk to arrange.

Equipment

Teams may bring any equipment they wish to use for Panning, Hand Steel (Single Jack) Drilling, Hand Muck, Swede Saw and Track Stand events. Equipment cannot be brought for Jackleg Drilling or Survey; all necessary equipment will be provided.

Any equipment brought must be made available for use by all teams for the **ENTIRE COMPETITION**, and must be checked in by the designated official **NO LATER THAN 12:00**, on practice day – 20th March.

Only equipment checked in to the official prior to this time will be permitted for use during the competition. Prior to equipment being made available for use it will be inspected for compliance with the rules and safety standards. If a piece of equipment is deemed to be in violation of the rules or unsafe, the owner will be notified, and the equipment will not be permitted for use during the competition. Once equipment has been checked in for an event, it will not be permitted to leave KEMM or be used in other events.

At the end of each day, the officials will store all equipment properly and securely to prevent tampering or theft. Anyone caught tampering with or stealing equipment will be subject to immediate disqualification; legal implications shall be left to the discretion of the owner of the equipment.

In the event of equipment failure, the owner of the equipment will be notified and given an opportunity to make repairs. Once repairs have been made, the equipment will be inspected again to ensure compliance with rules and safety standards. If a team breaks a piece of equipment belonging to another team, the two (2) teams are responsible to reconcile the cost.

All equipment will be made available for collection at the conclusion of the Men's Events on Saturday 22nd March. Due to the location of the competition grounds with relation to the accommodation and events, we **CANNOT GUARANTEE ACCESS** will be available to retrieve equipment on the Sunday 23rd March.

*NOTE: **ALL** equipment is brought to competition at your own risk and cost. The 47th Intercollegiate Mining Competition Committee, Judges, CSM IMG and Camborne School of Mines will not be held responsible for items damaged during the course of the competition or for any transport costs.*

Safety

All competitors are required to comply with the safety regulations throughout the duration of the competition. This includes all listed safety standards and any safety related directions given by a 47th Intercollegiate Mining Games Official. The officials are there to protect competitors and spectators at the games, and will be adhered to. Compliance with safety regulations is required for the duration of the entire games; this includes practice and competition days. Any competitor with repeated safety violations as observed by a competition official is subject to disqualification from an event and/or competition.

Competitors must provide their own Personal Protective Equipment (PPE). Ear plugs will be made available. If, during an event, a piece of PPE falls off a competitor, that competitor **MUST** stop immediately and put back on the PPE prior to resuming. If a competitor continues without stopping and putting the required PPE back on, the team will be disqualified from the event.

All events require the following PPE;

- Steel Toe Cap Boots
- Safety Glasses*
- Full Length Trousers
- Hard Hat
- Short/Long Sleeved Shirts

*Mesh/Bug Eye style glasses will NOT be considered acceptable

Certain events require additional PPE than that outlined above, however will be included in the respective event rules.

Emergency Personnel

Emergency personnel will be present on site for both practise and competition days in case of medical emergency or serious injury.

Head-to-Head

In the interest of scheduling constraints and in the spirit of competitive competition the following events will be held in a head-to-head manner;

- Swede Saw
- Hand Muck
- Hand Steel (Single Jack) Drilling
- Track Stand

The first choice of equipment for these events will be decided by a coin toss (or equivalent) which will be conducted by the judges.

Scoring

Team Events

Points are awarded to each team for each event. If a team is disqualified, they receive last place points for that event. Points are awarded based on how they perform within their division. The first place team will receive one (1) point, the second place team will receive two (2) points, and so forth.

If at the end of the competition day multiple teams in a division have the exact same time or measurement score a tie-breaker will be applied. The teams will compete in the event again for placement; e.g. if the teams tie for second place in an event they both compete in the event again and the team with the better score will take second and the other team third.

NOTE: In order to compete in an event tie-breaker, the team must be present at the final score tally (conducted at the conclusion of the day's events).

After all event tie breakers have been settled, points will be summed and the team with the lowest total score will be declared the overall winner for the respective division. Should multiple teams be level on points after the conclusion of all the events and any tie-breakers required, the Survey event will act as a head-to-head. The final standings of the teams level on points will be decided by the relative ranking in the survey competition.

ie. Team A and Team B are both scoring 10 points total, Team A came 4th in Survey and Team B came 2nd in Survey. Team B will outrank Team A in the overall standings.

An example of the scoring system is shown below;

	Jackleg Drilling	Hand Steel (Single Jack)	Panning	Track Stand	Survey	Hand Muck	Swede Saw	Total
Team A	1	2	2	2	2	1	2	12
Team B	2	1	3	3	1	2	3	15
Team C	3	3	1	1	3	3	1	15

Team A will place 1st (points), Team B will place 2nd (survey tie-breaker) and Team C will place 3rd.

Individual Events

The competition will be divided into a Men's and a Women's division. Once all competitors have competed in an event, points will be awarded to each person. If an individual is

disqualified, he or she will receive the maximum number of points for that event. Points will be awarded in terms of the individual's position within his or her division. The first place competitor for each event will receive only one (1) point, the second place competitor will receive two (2) points, and so forth. Should an event position be tied, a head-to-head event tie-breaker will be arranged. Points will be summed and the competitor with the lowest score will be declared the winner for that division.

Team Event Rules

Jackleg Drilling

In addition to the standard PPE requirements already outlined the following is required for this event;

- Hearing Protection
- No loose-fitting clothing (Judge's discretion)

Two (2) members from each team are required for this event; one driller and one off-sider, the two participants will each drill and off-side. Each individual will have three minutes to drill as far as possible into a 150mm (6") square, the team will be allocated at random both a high square [centre of which must be no greater than 1500mm (60") above the drilling level] and low square [centre of which must be greater than 750mm (30") from the drilling level]. The competing team will nominate a square to each driller, with only the nominated driller able to drill in the respective square. The teams will drill into the concrete blocks using a 4-feet (1200mm) steel with a 40mm (1.5") integrated drill steel. Start line will be at least 15 feet (4.5m) from the front of the concrete block. The clock will not stop for stuck steel.

Before time is started, the driller and off-sider are allotted 3 minutes each to set up the drill and determine the placement of the air leg. Before the 3 minutes is up the drill must be behind the designated line with the steel out of the chuck. The drill and any part of the drill steel must start behind the line.

If the driller is male, the off-sider may not touch the drill or the steel during the event; they may only help by moving hoses and guide rods. The off-sider is not allowed to help remove the steel by pulling on the hoses. If the driller is female, the assistant may help with collaring the hole and carrying the drill but must do so by only touching the drill steel. For female drillers, if the off-sider makes contact with anything besides the steel or hoses, the longest hole will be deducted from your total length. For the co-ed division, each team must have one male and one female driller.

The air can be turned off at **ANY** time, based on the judge's discretion with regards to unsafe operations. Hands in pinch points or guards will be considered unsafe operations. In the event of breaking out of any side of the block, drilling into another hole, or drilling outside of the designated square, teams will be penalized with the non-recognition of that hole whilst calculating total drilled length. The team that drills the deepest after penalties have been deducted will be the winner. Holes will be measured to the nearest 1mm.

The following penalties will be applied accordingly:

- | | |
|--|---|
| 1. Air turned off twice by judge | Disqualification. |
| 2. Straddling the air leg | Air Turned Off. |
| 3. Unsafe operation of the jackleg | Air Turned Off. |
| 4. Driller aided incorrectly by offsider | Longest Hole deducted/occurrence. |
| 5. Over half of the hole is collared outside of the square | Hole not counted towards total drilled length. |

Hand Steel (Single Jack) Drilling

In addition to the standard PPE requirements already outlined the following is required for this event;

- Glove (on hand which is holding the steel)

Five (5) members from each team are required to compete in this event. The team will be given ten minutes of drilling time and one minute of flushing to drill as far as possible into a 100mm (4") square, each member will have two (2) minutes to drill. Multiple holes may be drilled but must be collared within the 100mm square and not until the previous hole has been finished.

A set of three drill steels will be provided. The steels will be progressive in length and have a maximum length of twelve inches. Steels must have the appropriate chisel width to create a 22mm (7/8") diameter hole within 2mm ($\pm 1/16^{\text{th}}$) tolerance. Steels and hammers will be provided, but personal steels and hammers are also allowed, as long as they are made available to everyone and checked in by the deadline on practice day. The drilling medium will consist of concrete blocks constructed using aggregate no larger than ½-inch diameter. Water may be used to flush the holes while drilling.

Plugs may be used to prevent chips from entering completed holes. Male competitors will be required to use a 4-pound hammer while female competitors may use either a 3-pound or 4-pound hammer. Should a team drill into another hole, that hole's length will not be counted in total drilled length, and a new hole will be required to be started, but time will not be restarted.

All competitors will be required to hold the steel while it is being struck with the hammer, whether the steel is being held will be up to the discretion of the judge. The first occurrence will result in a verbal warning as the competitor is steeling, however on the second offense, the competitor will be disqualified and must forfeit the remainder of his/her time. Should a team member strike the side of the steel with a hammer, the competitor will be disqualified and must forfeit the remainder of his/her time.

During the one (1) minute flushing time, only steels used during drilling can be used alongside the water. No hammers are to be utilised in any way during this time.

All holes will be measured from the surface of the concrete block to the base of the hole to the nearest 1mm. The deepest total length wins.

The following penalties will be applied accordingly:

- | | |
|---|---|
| 1. Steel not held when struck (2 nd Offence) | Disqualification of Competitor. |
| 2. Striking the side of the steel with a hammer | Disqualification of Competitor. |
| 3. Steel stuck in hole (after flushing completed) | Hole not counted towards total drill length. |
| 4. Over half of the hole is collared outside of the square .. | Hole not counted towards total drilled length. |

Hand Muck

No additional PPE requirements to that already outlined is required for this event.

Five (5) members from each team will compete in this event; three (3) participants will be muckers/shovelers and two (2) will be screeders. Prior to starting the event, the team will be given a ten minute time period to prepare the muck pile (only the five competing members will be permitted to carry this out, not any additional team members who are not competing). After this time, any member of the team may not touch the muck pile until the time is started. This includes muckers situating themselves on the top of the muckpile. However, they may situate themselves on/in the muckpile during the ten minute preparation period.

The event begins by tramping the empty ore cart down the track and back to the muck pile. Muckers may start filling the tub once it has returned to the start position **AND** touched the bumper. Only two muckers are allowed to shovel material at any one time, and the teams may alternate shovelers at their discretion. The two screeders can only touch muck that is within the plane of the ore cart. The judge will give an indication that the tub has been filled and levelled. The full cart is then trammed down the length of the track and back again. Time will stop when the full cart touches the bumper at the start of the track (by the muck pile). The fastest overall time wins.

All tramping must start with the cart touching the backstops at the muck pile end. Once at the far end of the track, it must touch the other backstop before returning and touching the original backstop. The muck cart must be in the upright position with **BOTH** side locks engaged while tramping empty and full. Competitors must be behind the plane of the front of the cart **AT ALL TIMES** whilst the cart is in and about to be in motion. Carts must always be pushed and never pulled, and teams must make an effort to slow the cart before changing directions or stopping.

The alternate mucker will be allowed to clear the track whilst the cart is nearing full capacity. The alternate mucker must be clear of the track before the cart begins to move, as any person on the tracks in front of a moving cart will result in disqualification.

The women's teams will fill the tub to a designated line roughly two-thirds of the volume of a full tub. Men's, Co-Ed and all alumni teams will fill the cart to the brim. In the Co-Ed division, at least one woman will be required to be designated a mucker and must be active in the shovelling routine while another woman must muck or screed.

The following penalties will be applied accordingly:

- | | |
|--|--------------------------|
| 1. Person on tracks in front of a moving cart | Disqualification. |
| 2. More than two (2) members shovelling simultaneously | Disqualification. |
| 3. Derailing of the cart | Disqualification. |
| 4. Hitting backstop too hard..... | 20 seconds. |
| 5. Screeders hand-shovelling muck into cart (2 nd offence)..... | 20 seconds. |

Track Stand

No additional PPE requirements to that already outlined is required for this event.

Five (5) members from each team will compete in the track stand event but the fifth member will act as a foreman for the team. The designated foreman can only give instructions, point out problems, and help keep the team running smoothly. The foreman is **NOT** allowed to touch any tools or materials. The foreman does not have to remain the same for both construction and disassembly but has to remain one of the five members participating in this event.

Teams will be timed for both the construction and tear down of the track. Prior to starting the construction, teams will be given ten minutes to level and prepare the ground where the track will be assembled. The foreman still cannot touch any materials/tools during this part of the event. The teams will then stand behind a designated line with all of their materials and equipment. A judge will indicate the time of starting and the team will then be able to bring all material and tools past the line and construct the rail. The teams must install two 15 foot lengths of 40 pound per yard rail on five (5) ties. Once the track has been constructed, all members (including foreman) and tools are to be moved behind the line again, and the foreman will be required to call 'time' before the judge stops the clock. The team's track will then be inspected for quality and any penalties will be recorded. If any team member travels under or over a piece of elevated rail during the event, they will be disqualified.

The rails must be connected to an existing piece of rail by means of four fish plates and eight bolts. Bolts must be tightened to a minimum of 35 foot-pounds (checked with a torque wrench). All necessary equipment will be provided, although personal equipment can also be used if made available to everyone and checked in by the deadline on practice day.

Twenty-one spikes will be given to each team; one spike will be spare in case of breakage or loss, and each spike must be attempted to be established in the tie (at the discretion of the judge). A spike may not have greater than a popsicle stick clearance between the spike head and rail at any point to avoid penalty. The rail must be held in place on the ties by four (4) spikes per tie (1 on each side of each rail), with the ties evenly spaced across the length of the rail. No team member may work on the same tie as someone driving spikes with a double jack; the first instance will result in a warning and the second will result in disqualification. In the Co-Ed division, at least two (2) women are required to participate in the construction and tear down with at least one (1) of those women participating in driving spikes. The ties must be in contact with the rail and a tie will be considered hanging if two (2) popsicle sticks can pass completely between the tie and the rail.

The track must be kept to a gauge along its length with a provided track gauge, which will be made available to the teams for use during the event. During the preparation period, a region on the rail after the fourth tie (away from the fishplates) will be nominated by the foreman for gauge inspections. Only in this specified region will gauge checks be carried out by the judge due to accepted variations in the rail.

Teams will then be timed in the same way on the dismantlement of the rail section. Teams will not be allowed to elevate the section of rail in order to hit the ties loose; doing so will result in disqualification and possible payments for damages to rails. All materials including tools should be removed behind the line prior to the foreman calling 'time' for tear down, the same as during set-up.

Throwing tools or equipment will result in **IMMEDIATE DISQUALIFICATION**, throwing is defined as dropping beyond the straight arm reach of the individual. Any items left on the field will incur time penalties, including pieces of broken ties that are larger than a spike. Time for

construction and tear down of the rail will be added, along with any penalties incurred. The team with the fastest total time wins.

The following penalties will be applied accordingly:

- | | |
|---|---------------------------------|
| 1. Travelling over or under an elevated rail | Disqualification. |
| 2. Throwing tools or equipment | Disqualification. |
| 3. Elevating constructed track (Jacking the rails) | Disqualification. |
| 4. Foreman handles equipment/tools | Disqualification. |
| 5. Working on same tie as a double jack (2 nd Offence) | Disqualification. |
| 6. Any item left in front of the line | 10 seconds / item. |
| 7. Spike not driven into tie | 10 seconds / spike. |
| 8. Spike not used/not attempted..... | 30 seconds / spike. |
| 9. Bolts not tightened to 35 ft-lbs | 15 seconds / bolt. |
| 10. Not using spike or fish plates in the correct manner | 30 seconds / occurrence. |
| 11. Hanging ties | 20 seconds / tie / rail. |
| 12. Gauge not properly aligned | 20 seconds. |
| 13. Spike left in tie after disassembly | 20 seconds / spike. |

Swede Saw

No additional PPE requirements to that already outlined is required for this event.

Five (5) members from each team will participate in this event. Using two (2) 36-inch bow saws, competitors will alternate cutting through a 150mm x 150mm (6" x 6") timber. The cumulative time will be used for scoring. The time will start once the first competitor's blade comes in contact with the timber. When one competitor finishes sawing the timber, the next competitor may begin sawing. There may only be one (1) saw in contact with the block of timber at a time. The time will end when the fifth competitor completely saws through the timber. The team with the fastest time wins.

Each team will be given a timber divided into seven (7), 75mm (3") sections. Two (2) sections may be discarded at the team's discretion. Sections may be discarded due to poor quality, knots, or any other reason the team decides on. The discarded sections will be denoted by an 'X' through that section. One extra bow saw will be available to replace a saw should one of the other two break. Teams will have the option to replace one blade before time starts. Should a blade break during the competition, the clock will continue to run while the saws are swapped. Once the saw is swapped by dropping onto the floor or passing to a fellow team member, the competitor may continue with the same cut. Prior to a team's attempt, if a blade is broken it will be replaced by the judge.

If a competitor breaks out of their designated 75mm section, they will be told by the judge to restart. A breakout is if the cut crosses completely through the marked line, if the cut is on the line this is not a breakout. If the two discarded blocks, marked with an 'X', have not yet been cut away, a competitor will be allowed to start a **NEW** cut in a section marked with an 'X'. Should this happen a second time (within a team), the team will be disqualified. If the piece being cut breaks away from the main timber, the competitor must continue to saw off what is remaining before the next person can begin. Penalties will also be given for competitors using a saw to hit a piece of wood off the section.

A team member is permitted to sit upon the saw horse to provide stability, this should not be one of the five (5) team members competing in the event. If an additional team member is not available, any person who is not competing in the event may do so provided they are wearing the required PPE.

The following penalties will be applied accordingly:

- | | |
|--|--------------------------|
| 1. Two (2) breakouts | Disqualification. |
| 2. Two (2) saws in contact with the wood at a time | Disqualification. |
| 3. Hitting or chopping at a piece of wood | 1 minute. |

Panning

No additional PPE requirements to that already outlined is required for this event.

Five (5) members of each team are required for this event. Competitors may choose to use any type of available pan. Each pan will be filled with one (1) can full of material. The judge will then count and place five (5) flattened pellets into the pan in front of the competitor. When a competitor has found all five pellets and placed them into the judges' hand, the competitor will call "time". The maximum time to pan is five (5) minutes. The cumulative time for all five competitors will be added together, and the team with the lowest time being declared winner. Teams may choose to pan in groups of two (2) or three (3) at a time, with the others acting as spotters.

All competitors will start with the bottom of their pan on the lip of the gold pan trough, with their hands clear of the pan. Once the judge signals, timing will start and the competitor will be allowed to pan to retrieve the pellets. The competitor is responsible for placing each pellet in the judge's hand. Each pellet that is lost in the panning process or in the process of getting the pellet from the pan into the judge's hand will result in a five-minute penalty. Once a competitor has completed their pan, they may help one another spot pellets. No one may touch another competitor's pan or material or cross the plane of pan whilst gesturing to the competitor. The sixth team member is not allowed to act as a spotter.

This event is intended to be 'wet' panning, therefore the use of 'dry' panning techniques will result in a penalty per occurrence; competitors must submerge their pan before touching or removing any material. Any occurrence of dry panning techniques will be at the discretion of the judge. A ten (10) second time period, after the last pellet is placed in the judges hand and the competitor calls time will be used to determine if all pellets are legitimate and not a rock. If it is determined to be a rock and not a pellet the competitors time will continue from the stopped time.

The following penalties will be applied accordingly:

- | | |
|---|--------------------------------|
| 1. Lost pellet | 5 minutes / pellet. |
| 2. Illegal spotting (plane/material/pan)..... | Disqualification. |
| 3. Dry panning | 5 minutes / occurrence. |

Survey

No additional PPE requirements to that already outlined is required for this event. Due to the location of the eyepiece on the theodolite and the event in relation to others on site, hard hats and safety glasses will **NOT** be required for this event.

Two (2) members of each team will compete in the surveying event. An antique transit will be used. The hosting committee will provide all required equipment, with the exception of calculators and booking sheets. Teams must bring their own calculators and materials (i.e. clipboards, pens, etc). Calculation sheets and non-programmable calculators only may be used. Mobile/cell phones are not permitted and must be surrendered to the judge.

Each team will be provided with the following items for this event:

1. One (1) Optical Transit
2. One (1) Tripod
3. One (1) 100' Steel Measuring Tape
4. One (1) Plumb Bob
5. One (1) Survey Nail
6. One (1) Magnifying Glass

Judges will inspect survey equipment prior to each use and again at the end. Competitors are responsible for damage to the equipment while in their possession. While walking to different stations, the transit **MUST** be secured back in the box to ensure minimal damage. Each team will be given their equipment, coordinates of an initial "A" station (Northing, Easting, Elevation), and a back azimuth. The competitors will then have to transfer the coordinates through an intermediate "B" station to a final "C" station. Each team will be given 45 minutes to take measurements and 15 minutes to complete calculations. Equipment will be boxed up and secured at the beginning of the event. Judges will record a starting time at which the team will begin. Time will be stopped when the crew has completed its survey, and all equipment is boxed properly and returned to the judge.

At this point, the judge will check the equipment. If not properly stowed, the judge will indicate a problem and time will resume until the problems are corrected. The judge will not specifically identify the problem; it will be the team's responsibility to find and correct the issue. Note that the 45-minute measurement time will be stopped when the equipment is properly secured, and the 15-minute calculation time will not start until the team is at the calculation station and ready to begin their calculations.

Teams will be ranked by their error according to the total error of closure between their calculated coordinates for their "C" station and the actual "C" station coordinates as determined by the judges. The judge will have the right to disqualify any team who is reckless with equipment or causing damage to the equipment. Any team intentionally interfering with equipment or survey stations will also be disqualified. Should two teams obtain the same error, the time to complete the measurements and calculations will be taken into consideration to determine the rankings.

The following penalties will be applied accordingly:

- | | |
|--------------------------------------|----------------------------|
| 1. Recklessness with equipment | Disqualification. |
| 2. Overtime for measurements | Disqualification. |
| 3. Overtime for calculations | +1m error / minute. |

Individual Event Rules

All of the safety rules from the team events where applicable still apply in addition to the following;

Jackleg Drilling

The driller may pick an off-sider of his or her choice to help with hoses, a women's off-sider will also be allowed to assist by touching the steel. The driller will have 3 minutes to drill as far as they can into one 6" square. Multiple holes may be drilled if the driller should finish drilling the length of the steel before time is finished.

Hand Steel (Single Jack) Drilling

The individual will have five (5) minutes to drill as deep as possible using a hammer and steels. The driller may choose a watering assistant of his or her choice. Competitors may use their own sets of steels and will not be required to make them open for public use. A set of steels will be provided by the competition staff.

Hand Muck

Competitors will be required to fill a two-ton, side-dump ore cart to a designated line in as little time as possible. The competitor may choose to start the ore cart tipped or upright. Screeders will be responsible for tipping the cart up and levelling the muck. Time will be recorded by the judges. Individuals will not be required to tram the cart neither empty nor full. The individual may pick two screeders of his or her choice.

Spike Driving

Individuals will begin behind a designated line, and once time starts the individual will set and drive 2 spikes, one spike on each side of a section of rail. Time will stop when the competitor is back across the line. The judge will inspect the spikes to ensure they are installed correctly. Penalties for incomplete setup will be 15 seconds per infraction. Improper use or installation will be decided by the judges and will result in disqualification. The competitor with the fastest time and least penalties wins.

Swede Saw

Individuals will begin from behind a designated line. Once time starts, the individual competitor will run up to the timber with their saw, cut their section, and return behind the line. Once the individual passes behind the line time will stop.

Panning

Individuals will be given a gold pan with one can of dirt, and judges will place 5 pellets in the dirt in front of the competitor. Starting with the pan on the ledge of the gold pan trough, competitors will pan for and find the five pellets in as little time as possible. Competitors are responsible for picking up and placing the pellets in the judge's hand. Loss of a pellet from the pan to the judge's hand will be counted as a penalty on the competitor. Penalty for a lost pellet is 5 minutes per pellet. Competitors may not search the trough for lost pellets. Competitors will be responsible for calling time once they have completed their search.