

2018 Skills Ontario Robotics Question and Response Summary Document

Prepared by: Bob Tone

Date: March 16th, 2018

This document supports maintaining a common understanding / interpretation of the Skills Ontario Robotics Scope by all participants.

FIRST a Post Publication Document Edit related to Overall Marking made by the Technical Committee:

Tele-operated Pipeline Tournament Play 45 Marks

Highest Scoring Tele-operated Pipeline Tournament Team = 45 Marks

All Other Teams awarded Tele-operated Pipeline Tournament Marks based on the following formula:

- $(45) \times (\text{Individual Team Total Score} / \text{Highest Team Total Score})$
- The TOP 16 Teams based on Final Pipeline Tournament Play Results advance to the Tele-operated Pipeline Playoffs

Tele-operated Pipeline Playoff Play 25 marks

- 5 marks per Winner's Bracket Playoff Game Win
- 3 marks per Loser's Bracket Playoff Game Win

100% Autonomous Robot Pipeline Game 25 marks

- Highest Scoring 100% Autonomous Robot Pipeline Tournament Team = 25 marks
- All Other Teams awarded Autonomous Robot Pipeline Tournament marks based on the following formula:
- $(25) \times (\text{Individual Team Total Score} / \text{Highest Team Total Score})$
- There will be no playoffs in the Autonomous Competition. Final standing will be based on total points scored in ALL Task runs of a Team over the two competition days.

Competitor Resume and Human Resources Interviews 5 marks

Total 100 Marks

Question One:

From: Gabe Maskaluk

Sent: Thursday, September 14, 2017 11:22 AM

Subject: 2018 Robotics

Bob,

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I'm Gabe Maskaluk, a student at Eden High School, and I was wondering if I could get some clarification on page 5 of the scope. It states "teams are responsible to provide their Own components". Does this mean teams cannot use a VEX claw, drive system, ect. for the Tele-operations?

Gabe Maskaluk

Response One: YES you can use VEX or any other autonomous equipment at the Ontario competition **BUT NOT at the national competition.**

All teams at the national competition will be provided with and **MUST** use the Studica / Skills Canada Component Collection.

Questions Two and Three:

From: Boucher, Justin

Sent: Friday, September 15, 2017 8:54 AM

Subject: 2 questions

1 : Can you move the 3x 12 inch ABS pipe support or it's stationary on the court ?

2 : If a student is in 12B and finish school in January, can he participate at Skills Ontario ?

Justin Boucher, AEO

Enseignant École secondaire catholique Jean-Vanier

Welland, Ontario

Response Two and Three:

1. Robots CANNOT move the Autonomous Pipe Rack that is holding all of the pipes at the start of an Evaluated Task Run
2. Yes, they can, as long as they are under 22 years of age and have been earning high school credits at some time between September and June, this school year (2017 / 2018).

Question Four:

From: Boucher, Justin

Sent: Friday, September 15, 2017 9:21 AM

Subject: pipe

Do we have enough pipe to do the two pipelines or we have to built one/drop the ball and move the parts to finish the second pipeline/drop the ball ?

The ball need to travel a minimum of 69 inchs so it's 6 x 12 inch abs pipe. So we dont have enough for the two pipelines.

Justin Boucher, AEO

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Enseignant École secondaire catholique Jean-Vanier

Welland, Ontario

Response Four:

You are correct there is not enough pipe pieces to build two complete well to the refinery pipelines at the same time. Teams will need to complete one pipe line / release the bearings then build the second pipe line.

Question Five:

From: Boucher, Justin

Sent: Friday, September 15, 2017 10:31 AM

Subject: Gripper

Can a team buy an already made gripper and use it on the robot or the team need to built his own gripper with aluminium/wood/plastic ?

Justin Boucher, AEO

Enseignant École secondaire catholique Jean-Vanier

Welland, Ontario

Response Six:

YES you can buy a gripper.

Question Seven:

From: Boucher, Justin

Sent: Monday, September 18, 2017 10:48 AM

Subject: question scope

What happen if a ball is stuck in the pipeline ? 0 points ? can the robot move the pipeline to get the ball unstuck ?

Justin Boucher, AEO

Enseignant École secondaire catholique Jean-Vanier

Welland, Ontario

Response Seven:

Robots are free to do anything they want to the pipeline right up until the end of the game buzzer sounds.

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They can build the pipe line, take it apart put it back together shake a pipe to send a ball out of an individual pipe if a ball has stopped in a pipe.

ZERO Marks will be awarded for Bearings in a pipe at the end of a game.

Question Eight:

From: Boucher, Justin

Sent: Monday, September 18, 2017 12:23 PM

Subject: last question for the week!

What is the starting point of the robots in the remote robots ? in the scope it say i twill start at the designed place but we didnt find the disigned place on the court drawing.

Justin Boucher, AEO

Enseignant École secondaire catholique Jean-Vanier

Welland, Ontario

Response Eight:

The autonomous robot's starting point will be backed against the long wall at the mid-point of the wall.

It will be a competitor's choice whether or not their robot starts at the mid-point along either the right or left long wall.

Question Nine:

From: Gilles Loranger

Sent: Tuesday, September 19, 2017 3:13 PM

Subject: supplied components

Hi Bob,

Hope you had a great summer. We have our team in place for the 4 person robotics competition. We are getting familiar with this year's rules and we have a question. Are any of the components supplied by Skills Ontario for the course. In particular the 1" ball bearings or ABS plastic pipe. Thanks for your help .

Gilles Loranger

Enseignant en technologie

E.s.c.Champlain

Chelmsford Ontario

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Response Nine:

Hi Gilles

Happy to have you and your students participating again this year.

There are no provided by Skills Ontario components.

All pipes involved will be cut offs from 1.5 inch ABS pipes.

The bearings will be basic chrome plated steel bearings.

Bob

Question Ten:

From: Serpe, Carmen (Michael Power/St Joseph)

Sent: Wednesday, September 20, 2017 11:30 AM

Subject: Materials list

Hi Bob,

It's Carmen at Michael Power. I hope all is well.

Regarding the tele-operated court:

What material do you want around the outside of the court?

Thanks in advance,
Carmen

Response Ten:

Hi Carmen

The Teleoperation perimeter boards are 2 by 4's standing on edge.

Bob

Question Eleven:

From: Kaitlin Condie

Sent: Thursday, September 21, 2017 10:54 AM

Subject: Ontario skills competition questions

Dear Bob,

I am a student at Northern Secondary school and we had a question about the Robotics- team of 4 competition. Northern secondary school is entering the Robotics competition and we were wondering if

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we were allowed to have more than one driver if we had two robots. it is not specified in the rules but in the past, there has only been one driver allowed.

I hope to hear from you soon, Kaitlin Condie

Response Eleven:

Hello Kaitlin

Teams have two court side competitors and it is a team decision regarding how they will be utilized.

YES both can be drivers if your solution to the task involves two robots.

If you are planning a two robot solution then keep in mind that at the start of a game the pair of robots must be positioned in a manner that enables them together to comply with the 4 cubic feet (6,912 cubic inches).

Thank You

Bob

Questions Twelve to Seventeen:

From: Murtadha Nisyif

Sent: Thursday, September 21, 2017 11:15 AM

Subject: Skills robotics competition

Good morning,

I am Murtadha a student and a member of a robotics team from Eastwood Collegiate. Mr. Bob we have some questions and we are hoping that you answer them.

1. How much time do we get for autonomous + what is the maximum number of robots we could have?
2. Are we supposed to pull a trigger to unleash the bearing balls (oil)?
3. Are we allowed to carry the train cars on autonomous?
4. On what orientation will pipes be placed on the autonomous round?
5. From where can we get the ball bearings for our own practice and trials?

And thank you.

Murtadha

Responses Twelve to Sixteen:

Hello Murtadha

Here are the answers to your questions:

1A. Seven Minutes to complete an evaluated autonomous task run

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1B. There is no restriction on the number of robots a team may include in their autonomous solution entry. HOWEVER keep in mind that **a Team's Complete Entry whether it involves one or more robots MUST comply with the Maximum Robot Entry Size Limitation of 2744 cubic inches at the start of an evaluated task run**

2. In the teleoperation game YES your robot is required to pull the hanging block to release the bearings.

3. The train cars are fixed in position and teams are NOT allowed to move them.

4. Pipes will be standing on end in the rack at the start of an evaluated autonomous task run. By the way the pipes in the train cars will need to be laying down (horizontal) given trains do not travel with pipes standing up in the train cars.

5. The bearings are basic chrome plated 1 inch steel bearings and can be obtained from a variety of sources

Thank You

Bob

Question Eighteen:

From: Murtadha Nisyif

Sent: Friday, September 29, 2017 9:42 AM

Subject: Missing dimensions

Hello Bob,

Regarding the "Refinery/HMCA/ Pull Post" cad sheet, the eye bolt dimensions are somehow confusing to us. If possible we ask a clarification for the length of the bolt, the diameter of the bolt and the diameter of the eyebolt and thank you.

Murtadha

Response Eighteen:

Hi Murtadha

The bolts are 3/8 inch. The dia. Of the eyes is the default standard size for 3/8' in. bolts.

The bolt at the top of the pull post is 5 in. long.

The last eye bolt before you reach the hinge is 4 in. long.

The middle eye is a 5.5 in. lag screw.

The eye bolt in the pull block is 4 in. long

Bob

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Question Nineteen:

From: Boucher, Justin

Sent: Wednesday, September 27, 2017 9:32 AM

Subject: RE: Question

Hi Bob

How many cradles can be used to support a single pipe?

Response Nineteen:

Hi Justin

There is NO restriction on how many cradles are used to support a single pipe line running from the well head to the refinery.

Bob

Question Twenty:

From: Nini Chen

Sent: Wednesday, October 4, 2017 9:44 PM

Subject: Robotics – Questions

Hi Mr. Tone,

This is Nini from MPSJ again, I just had a few clarifications to make for both the tele-operated and autonomous components.

For the tele-operated component, what type of tape is used on the ground? (The lines used as guidelines as to where to put the cradles) We were wondering whether it would be possible to push a cradle over the tape without lifting it.

For the autonomous component, does the orientation of the pipe matter as long as it's on the traincar?

Also, as we were setting up the autonomous court we realized that the black tape lines around the pipe rack are all not centered from the rack. The rack is centered; however the tape lines are not. We weren't sure whether this was intentional or not, and what their new placements would be if not.

Have a great day,
Nini

Response Twenty:

Hi Nini

Regarding your questions:

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- 1) I am intending to use Standard Grey Duck Tape (If it will stick to the Toronto Congress Center Floor) for the lines that define the pipeline path. If necessary I will use Gorilla Tape.
- 2) Train cars do not travel with pipes standing in a vertical position. To be awarded points the pipes must be horizontal in the train cars.
- 3) The autonomous starting pipe line rack tape lines are centered on the individual standing pipes. The mid-point of the 1 inch black tape is aligned with the center of the pipe.

Thank you

Bob

Question Twenty One:

From: Zeyad Ghulam

Sent: Wednesday, October 4, 2017 10:10 AM

Subject: Skills Competition

Hello there,

What material is the tape made out that is located at the edge of the pipeline pathways in the telop field?

What material is the tape that is used on the autonomous field?

Thanks,

Zeyad Ghulam

Response Twenty One:

Hi Zeyad

The tape defining the pipeline pathway will either be regular 2 inch duck tape or gorilla tape.

The tape lines in the autonomous field will be 1 inch gorilla tape.

Bob

Question Twenty Two:

From: Reive, Mat; Kruger, Marcel

Sent: Thursday, October 5, 2017 2:28 PM

Subject: Cost of Ball Bearings

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Hello Bob,

Do you have a supplier for the 1 inch Ball Bearings that are a reasonable cost?

I don't live in the GTA and we have found it very hard to source the 1 inch ball bearings.

We have found one supplier about an hour away from us but the cost is about \$5 per ball bearing.

We are wanting to buy some to practice with and we will need to buy 40 when we do our board level competition.

We are not wanting to spend about \$200 on ball bearings. Do you have a supplier for the 1 inch Ball Bearings that are a reasonable cost?

Thanks,

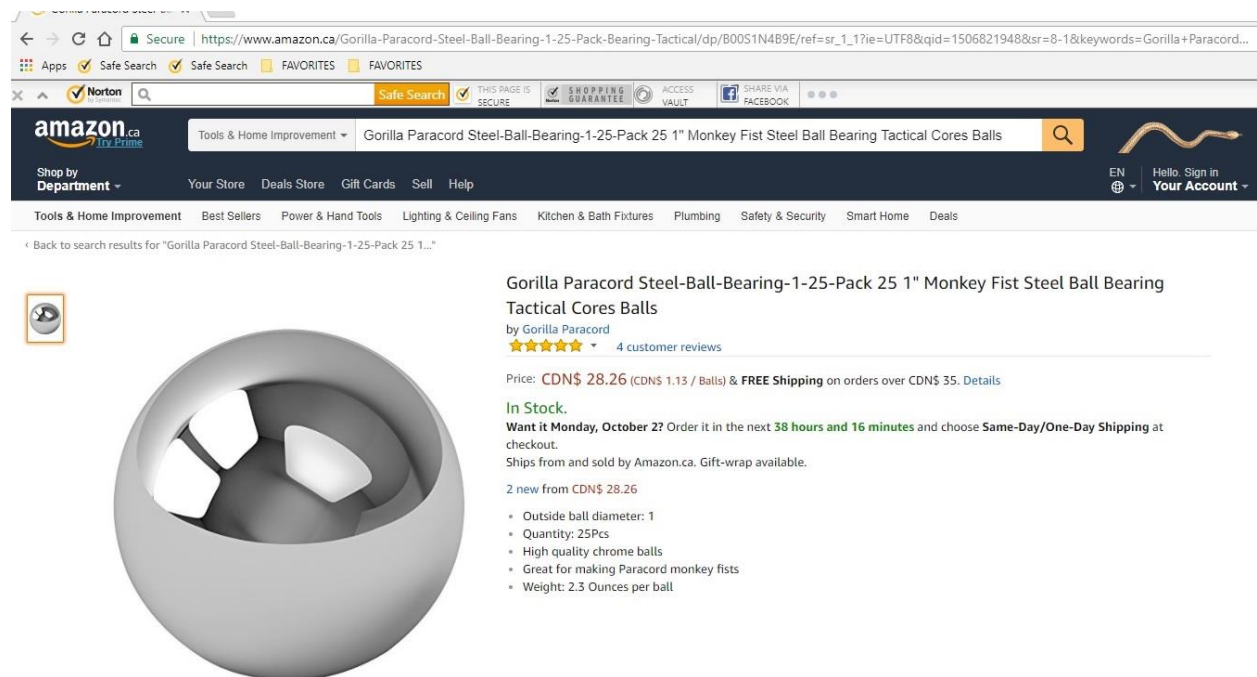
--Mat

Response Twenty Two:

Hi Mat and Marcel

I bought a set of 25 on Amazon.ca. Free 2 Day Delivery. Cost 31.93 including taxes.

Bob



Question Twenty Three:

From: Murtadha Nisyif

Sent: Thursday, October 5, 2017 10:30 AM

Subject: oil refinery dimensions

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Hello Mr. Bob,

I was wondering whether the width of the oil refinery is 20" or 30" and thank you

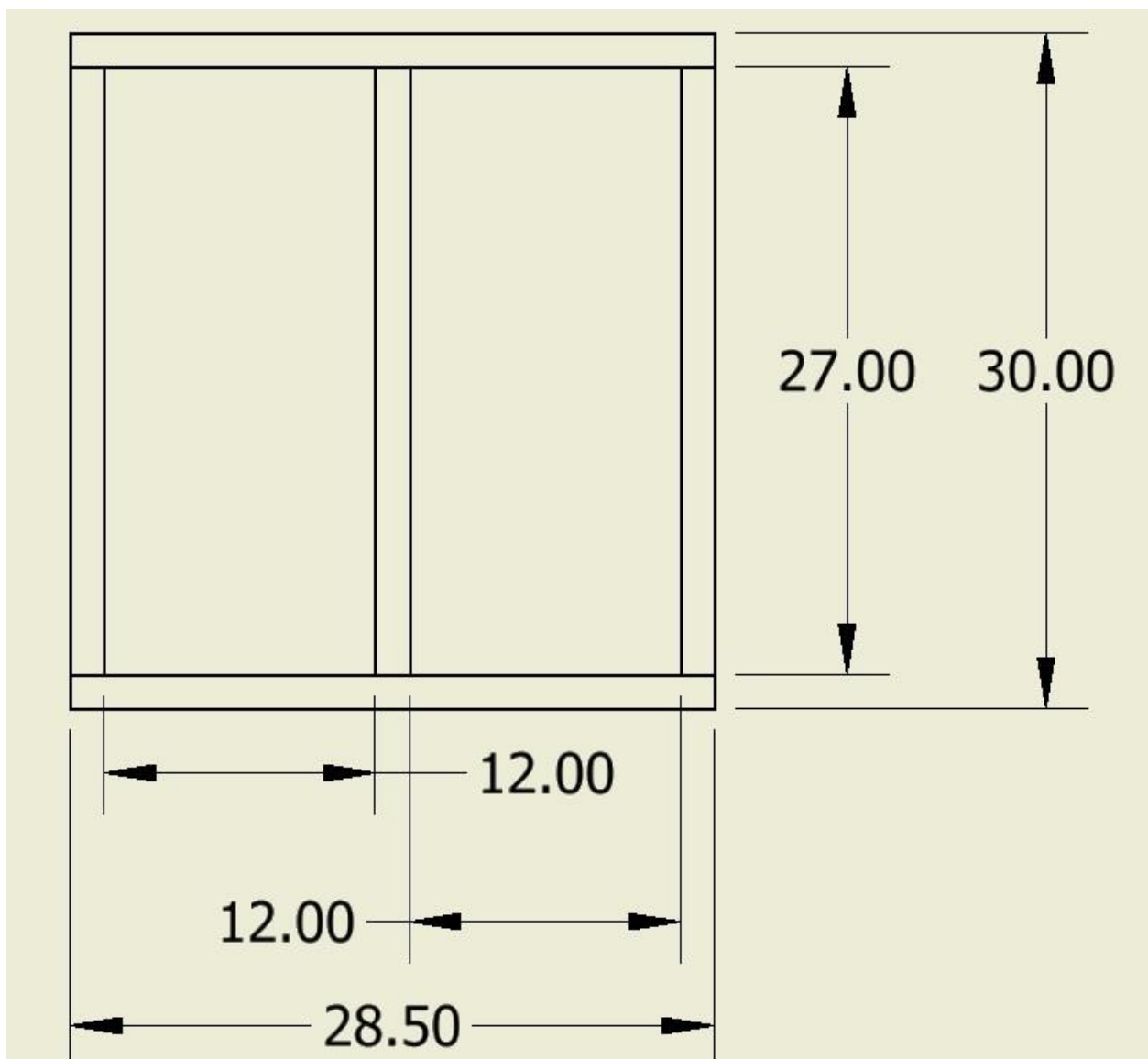
Murtadha, ECI student

Response Twenty Three:

Hi Murtadha

The outside dimensions of the Refinery and Recycle Area are 30 by 28.50 in.

Bob



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Question Twenty Four:

From: Gilles Loranger; Daniel Trépanier
Sent: Thursday, October 12, 2017 3:51 PM
Subject: Robotics points

Hi Bob.

The team is working at understanding the challenge for the tele-operated portion of the competition. We are wondering how are the points calculated. Is it done at the end of the match once all robots are stopped or are the point tabulated as the robots are in play and as each element of the challenge is completed.

Gilles Loranger

Enseignant - Technologie
E.s.c. Champlain

Response Twenty Four:

Hi Gilles and Daniel

Marks are calculated at the end of the time block.

Bob

Question Twenty Four:

From: Matteo Tullo
Sent: Tuesday, October 10, 2017 2:52 PM
Subject: Hinge Finger

Hi,

Could you please provide additional information concerning the "hinge finger" found on page 29 in the well diagram.

Thank you,

Matteo

Response Twenty Four:

Each Finger is one half of a basic 4 inch hinge.

Bob

Question Twenty Five:

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From: Gilles Loranger; Daniel Trépanier
Sent: Tuesday, October 17, 2017 3:18 PM
Subject: Robotics

Hi Bob.

A quick question about the pipeline challenge; does the pipeline have to be complete before the balls are dropped or can they be released at any time.

Gilles Loranger

Enseignant en technologie

E.s.c.Champlain

Chelmsford Ontario

Response Twenty Five:

Hi Gilles and Daniel

The answer to your question is YES a team can release the balls at any time including before the pipeline is completed.

Bob

Questions Twenty Six and Twenty Seven:

From: Nicholas Seniow
Sent: Saturday, October 14, 2017 12:34 PM
Subject: Skills Ontario Robotics Scope Questions

Bob,

I have 2 questions about the Scope for the 2018 robotics competition:

1. On page 12 of the scope, the 5th picture (bottom left) says that only 1 point will be awarded for 1 pipe supported by 2 cradles. Why is this not 4 points? (1 point for each cradle, and 2 points for the pipe)
2. If we decide to use kits such as Vex to build our robots, do we still need to have fuses or circuit breakers? last year we were told by the people doing our inspection that it is not necessary for our vex robot to include them.

Thanks,

Nicholas

Questions Twenty Six and Twenty Seven:

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Hi Nicholas

Sorry for the slow reply.

I am at Worldskills in Abu Dhabi and have limited email access.

The answer to your first question is:

- Pipe Points are awarded based on the pipe being positioned between the Tape Lines and held in a manner that results in no floor contact by the pipe.
- Cradle Points are awarded on a per cradle positioned between the Tape Lines basis
- The text you are referencing should state that 3 points will be awarded for a single pipe supported by 2 cradles. One Point per cradle and One point for the single pipe.

The answer to your second question is:

Response: Professionally built, low amperage and unmodified kits are exempt for the fusing rule examples being Lego EV3 and Vex. Dewalt drill/driver/batteries are examples of professionally made assemblies that would still need to be fused to make sure that the power rule is not exceeded."

Bob

Question Twenty Eight, Twenty Nine and Thirty:

From: Peter Kuvshinov

Sent: Sunday, October 22, 2017 2:35 PM

Subject: Questions regarding the Skills Ontario Pipeline competition

Hello,

I have a variety of questions regarding the Skills Ontario Pipeline competition that need to be addressed.

Firstly, does each competing team have to bring a tele-operated robot as well as another fully autonomous robot?

Secondly, If one cradle is supporting 1 pipe are 2 points awarded, but if 2 cradles are supporting 1 pipe 1 point is awarded?

Thirdly, the rules mention how robots have to be designed to allow for 1/2 inch tolerances. Does this mean that the positions of various objects may be 1/2 inch from what is supposed to be the court layout. Or the dimensions of the various objects: pipes, cradles may vary by a 1/2 inch.

Lastly, are camera systems and other types of sensors such as proximity sensors allowed on autonomous robots.

Thank you,
Peter K

Responses Twenty Eight, Twenty Nine and Thirty:

Hello Peter

Sorry for the delayed response. I have been away from home.

Here are the responses to your questions.

1. YES. All teams are expected to compete if both the tele-operated and autonomous robot formats and it is possible that on occasion they will be called to both courts at the same time.
2. Points are awarded to each cradle and pipe element individually. If a single pipe is being supported by two cradles then the score is: 3 Points in total.
3. The court features are built by different schools and the + or – 0.5 inches relates to the requirement that teams cannot expect a perfectly built court.
4. There are no restrictions on the equipment a team integrates into their autonomous robot solution. This means YES a team may use camera systems and other types of proximity sensors on their autonomous robots.

Bob

Question Thirty One:

From: Peter Kuvshinov

Sent: Monday, October 23, 2017 4:32 PM

Subject: Question

What is the outside diameter of the pipes used during the tele-operated robot tournament?

Response Thirty One:

Hi Peter

I expect your best option is to take direct measurements from an actual piece of 1.5 Inch ABS Pipe.

The chart below lists expected pipe dimensions.

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Nominal Pipe Size (in)	Outside Diameter (in) (mm)	Wall Thickness (in) (mm)	Inside Diameter (in) (mm)	Weight (lb/ft) (kg/m)
1 1/4	1.665	0.140	1.385	0.32
1 1/2	1.905	0.145	1.615	0.38
2	2.380	0.154	2.072	0.51
3	3.507	0.216	3.075	1.04
4	4.507	0.237	4.033	1.51
6	6.630	0.280	6.070	2.64

Question Thirty Two:

From: Adriano, Nathaniel John

Sent: Tuesday, October 24, 2017 5:02 PM

Subject: Skills Ontario - Secondary (Robotics) Question

Dear Mr. Tone,

Our robotics team would like to know what colour the tape is for the Tele-Operated Component of the tournament.

Sincerely,

Nathaniel Adriano

Francis Libermann Robotics Team

Response Thirty Two:

The tape in the Tele-Operated Component of the tournament will be Grey Duck Tape (If it will stick to the facility floor or Black Gorilla if the Duck Tape fails).

Question Thirty Three:

From: Nicholas Seniow

Sent: Saturday, October 14, 2017 12:34 PM

Subject: Skills Ontario Robotics Scope Questions

Bob,

2018 Skills Ontario Robotics Question and Response Summary Document

If we decide to use kits such as Vex to build our robots, do we still need to have fuses or circuit breakers? last year we were told by the people doing our inspection that it is not necessary for our vex robot to include them.

Thanks,

Nicholas

Response Thirty Three:

Professionally built, low amperage and unmodified kits are exempt for the fusing rule examples being Lego EV3 and Vex. Dewalt drill/driver/batteries are examples of professionally made assemblies that would still need to be fused to make sure that the power rule is not exceeded."

Question Thirty Four:

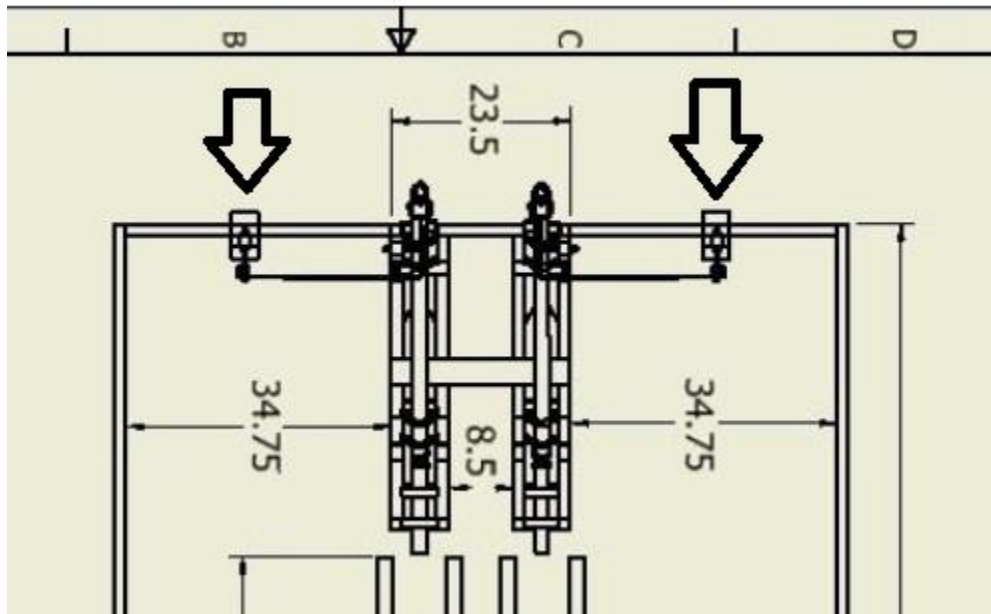
From: Ivan Conrad

Sent: Wednesday, Nov 1, 2017 4:28 PM

Subject: Position of Towers on prints

Hello Bob,

Could you tell us what the measurements are for the placement of these towers please? Thanks



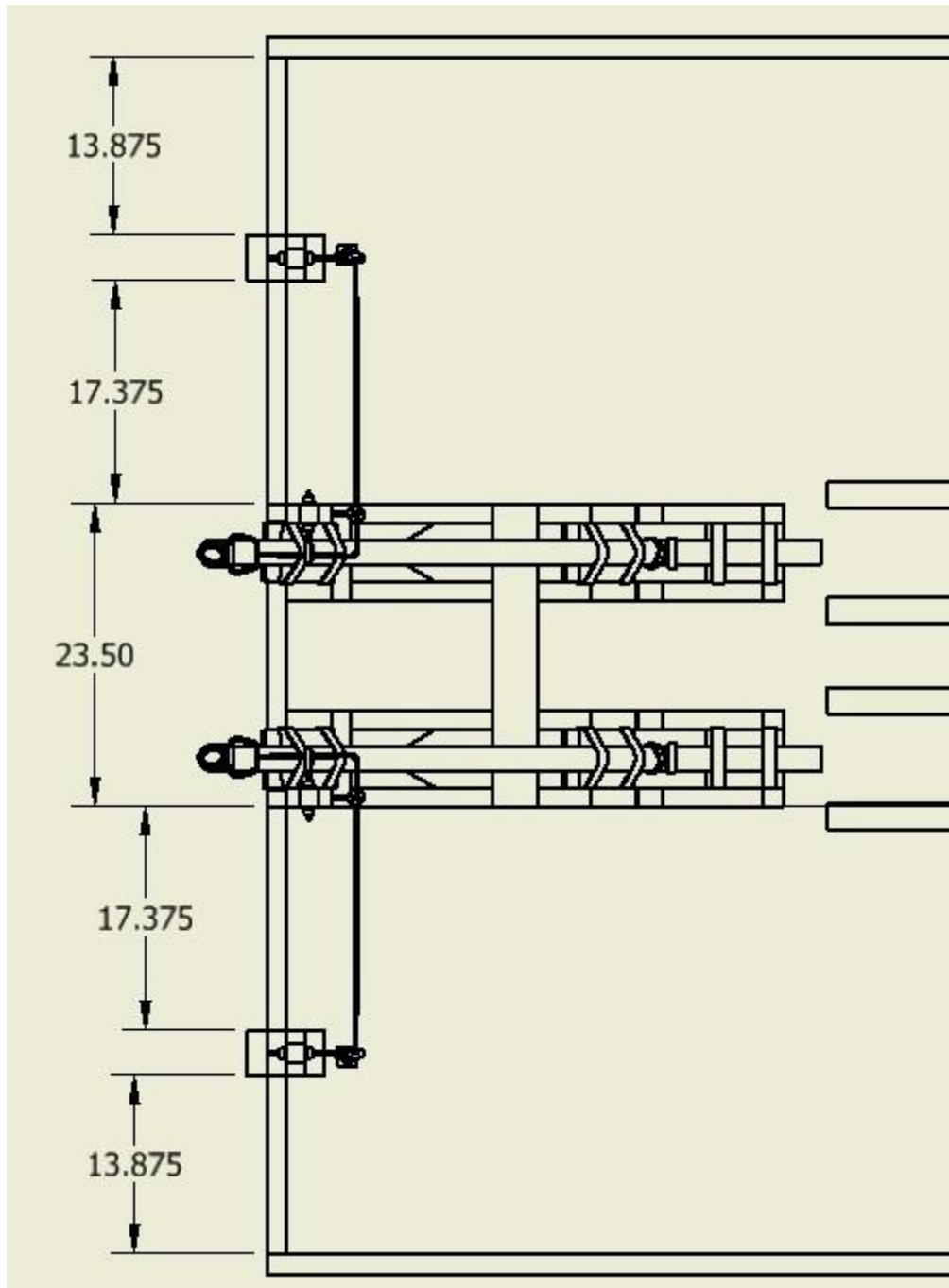
Ivan Conrad
Teacher
Lasalle Secondary School

Response Thirty Four:

Hi Ivan

I hope the image below provides the info you are seeking.

Bob



Question Thirty Five:

From: Giuliano Montanari

Sent: Wednesday, November 1, 2017 11:31 PM

Subject: Skills Ontario Robotics

2018 Skills Ontario Robotics Question and Response Summary Document

Hi Bob,

My name is Giuliano Montanari and I am a teacher at Fenelon Falls Secondary School. Our school has started a robotics club this year and I am one of the mentors on the team. One of our goals is to compete at May 2018 Skills Ontario Robotics. Regarding the Teleoperation Pipeline Game, I have a question.

I saw your drawing of the play field. I saw there are two shoots. 1/ Are both teams on the field at the same time, each assigned to a specific shoot or 2/ Are teams on the field separately, one at a time, competing against the 4 minute time limit?

Thanks,

Giuliano Montanari

Response Thirty Five:

Hi Giuliano

Two teams play at the same time but they are each in their own exclusive use side by side court space for both the Pipeline (teleoperation game) and for the Train yard (Autonomous game).

Teams need to be prepared to be called to both courts at the same time on occasion.

Bob

Question Thirty Six:

From: Piechota, Anthony [mailto:anthony.piechota@yrdsb.ca]

Sent: Friday, November 3, 2017 1:28 PM

To: bobtone@rogers.com

Subject: Rules Clarification-Robotics team of 4

Hi Bob, A couple of questions regarding the pipeline challenge:

1. Where is the start location for the tele operated challenge? (I assume if 2 robots are being used they must start together within the allotted volume requirements)
2. I am building a course for my students and need more details on the hinge used for the ball bearing release mechanism. Do you have a part number or detailed specs on the hinge you will be using?
3. The rules state "When Teams release the Oil (Bearings) from a Well they must ensure that ALL Elements of their Robots are well away from the Pipeline to ensure that no element of their robot's (Frames / Wheels / Object Management Systems) are in a position to prevent / hold the Pipeline from breaking apart."

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If the pipeline is incomplete or not built at all can the robot be placed in the pipeline pathway area to stop or slow the ball bearings when they are released? If not can you give a precise measurement for how far "well clear" is?

4. Are pipe/cradle points only scored at the end of the 4 minutes regardless of how they were used during the delivery of the balls?

Thanks in advance,

Tony Piechota

Computer Engineering Instructor

Stouffville District Secondary School

Response Thirty Six:

Hi Tony

Welcome to Skills Ontario Robotics and here's the answers to your questions.

1. The autonomous robot's starting point will be backed against the long wall at the mid-point of the wall.
It will be a competitor's choice whether or not their robot starts at the mid-point along either the right or left long wall.
2. An Everbuilt 4 inch hinge Home Depot product Number: 622412340408 when separated (grind off one of the hinge pin end caps) provides what you need for the two fingers needed in one oil well set.
3. Robots CANNOT be positioned to 'Catch the oil (Bearings) as they exit the well's end pipe. Teams need to consider the outside edge of the tape lines that define the pipeline pathway as representing a Vertical Plane and NO Part of a robot can be breaking this plane at the time the Oil (Bearings) are released.
4. All scoring / marking is done after the end of a game buzzer has sounded. Cradle and Pipe marks will be assigned based on their after the buzzer positions. Teams must understand that it is possible they will have pipes and or cradles correctly positioned before the Oil was released that may have been moved into incorrect positions based on the action of the Oil (Bearings).

Bob

Question Thirty Seven:

From: Justin Snippe

Sent: Monday, November 6, 2017 3:59 PM

Subject: Robotics For Ontario Skills

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Hello Bob,

I teach at Heritage Christian School in the high school and I am interested in joining the Robotics portion of the competition. Just a couple of questions:

1. Can only the four students who will be attending work on/build the Robot- or can I have a team build it and 4 represent us at the competition.
2. Are we entirely free to use whatever materials we like to build it- We have been a part of another Robotics competition for the past 2 years can we use that system (roboRIO)?
3. Will students have from the date of the registration to build it, or have some teams started already?
4. If I understand this correctly, students will actually build two Robots, one for Tele-op and one for Autonomous? But still be represented by only the four students?

Thank-you

Justin L. Snippe, OCT

Heritage Christian School

Secondary Teacher

Response Thirty Seven:

Hi Justin

Great to have you and your students involved in Skills Ontario Robotics.

Here are the answers to your questions.

1. There is no restriction on the number of students who work on the robot at the school. However, **ONLY** four students can be identified / registered as competitors and only these four students are allowed in the competition space.
2. There is no restriction on the materials teams use to build their robot.
3. The scope was published the first week of school in September and teams can start whenever they want. Many have started while others wait to make it a second semester activity. This is entirely a school based decision.
4. YES teams will build two separate robots. One for the autonomous task (Train Yard) and one for the teleoperation task (Pipeline) and YES the limit is four student competitors in total.

Bob

Question Thirty Eight:

From: Katelynn Buchanan

Sent: Monday, November 6, 2017 6:03 PM

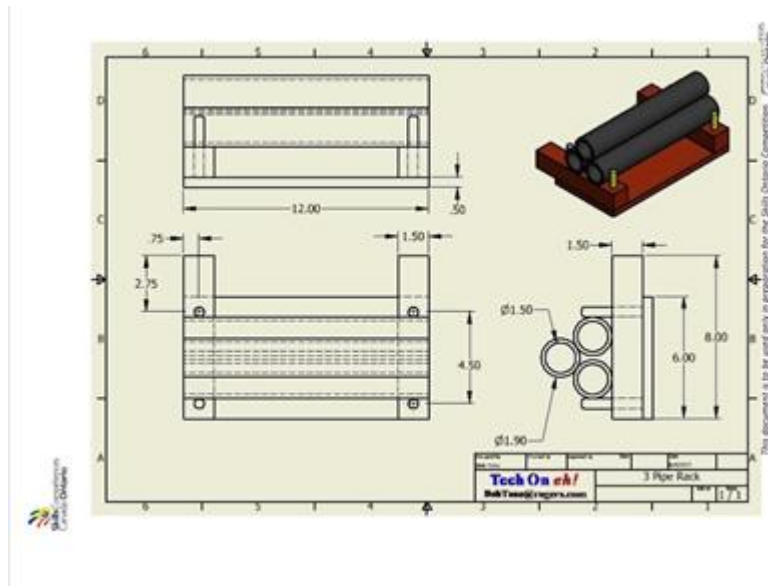
Subject: Robotics questions

Hi Bob,

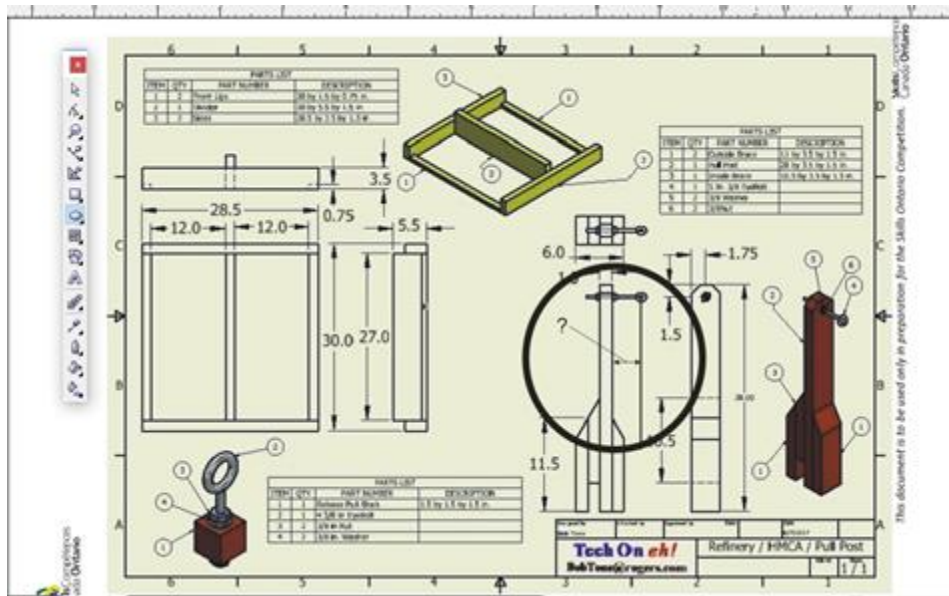
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I have a few questions regarding the remote competition (and they're included this time).

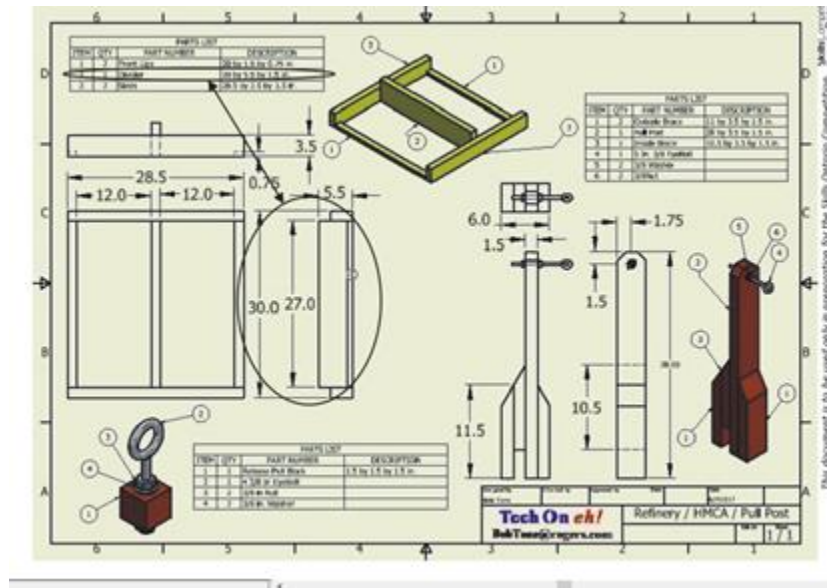
1. How tall are the pegs?
2. Are the stands fastened to the wall/ground? If not, are we allowed to move them?



3. What is the distance from the dangling string to the support board?



4. There is a discrepancy between the two circled dimensions - which is correct?



Thanks in advance,

Katelynn Buchanan

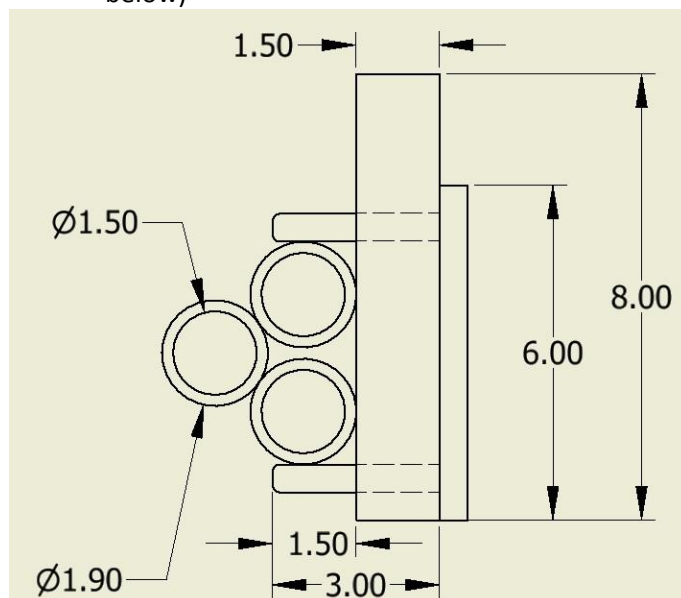
John Diefenbaker Senior School

Response Thirty Eight:

Hi Katelynn

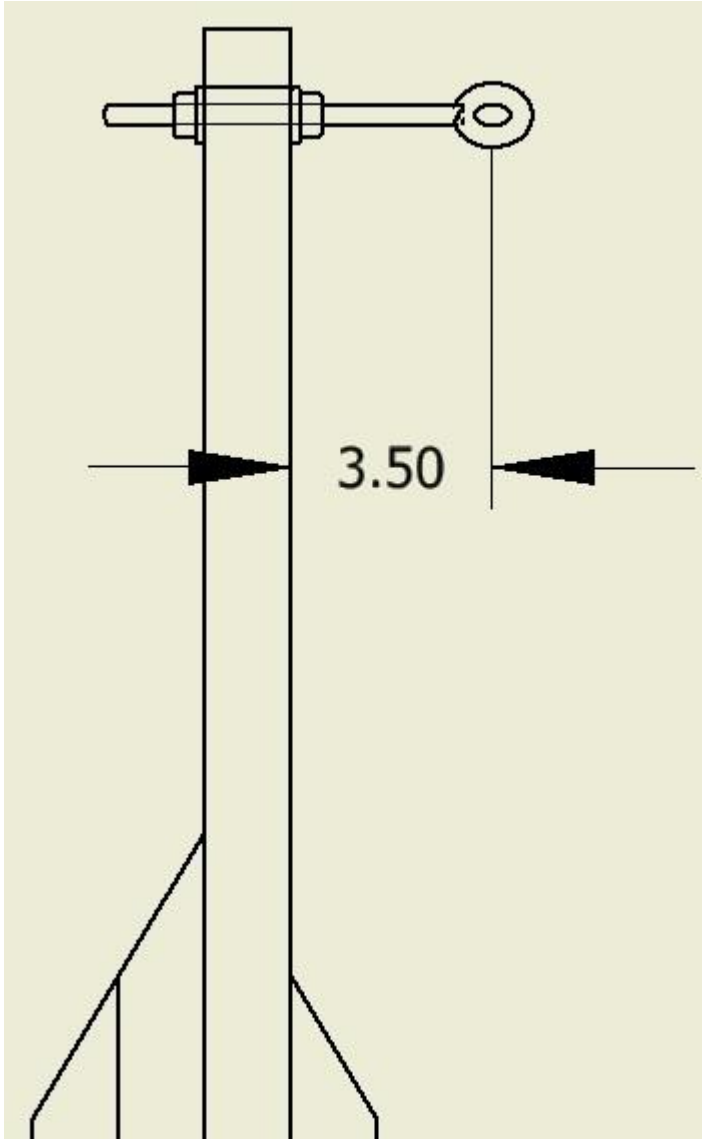
Here are the answers to your questions.

1. The pegs are 3 inches long and they extend 1.5 inches out of the stand railings (see image below)



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2. The Pipe stands and the train cars will be fixed in place and competitors are NOT allowed to move them.
3. The exact distance from the dangling string to the post cannot be identified but I expect it will be approximately 3.5 inches (see image below).



4. There is no discrepancy in the measurements as they are displayed. The 27 inch measurement references the inside refinery dimension while the 30 inch measurement references the outside refinery dimension

Bob

Question Thirty Nine:

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From: Eric Godden
Sent: Tuesday, November 7, 2017 2:30 PM
Subject: Robotics Competition Question

Dear Mr. Tone,
I am a student at Northern Secondary School in grade 11 planning on competing in May's robotics competition. I was curious to know if there could be two drivers at once during a competition match.
Thanks you for your time,
Eric Godden

Response Thirty Nine:

Hi Eric

Yes there can be two drivers at the same time during a game.

Bob

Question Forty:

From: Sheldon van Barneveld
Sent: Thursday, November 9, 2017 11:08 PM
Subject: 2018 Robotics Contest: Pipeline

Good evening.

I am seeking a clarification on one of the components of the tele-op gamemode. Are the ball bearing which are to represent oil magnetic at all? Would it be possible to use an electro-magnet to pick bearings off of the ground?

Thanks

Sheldon

Response Forty:

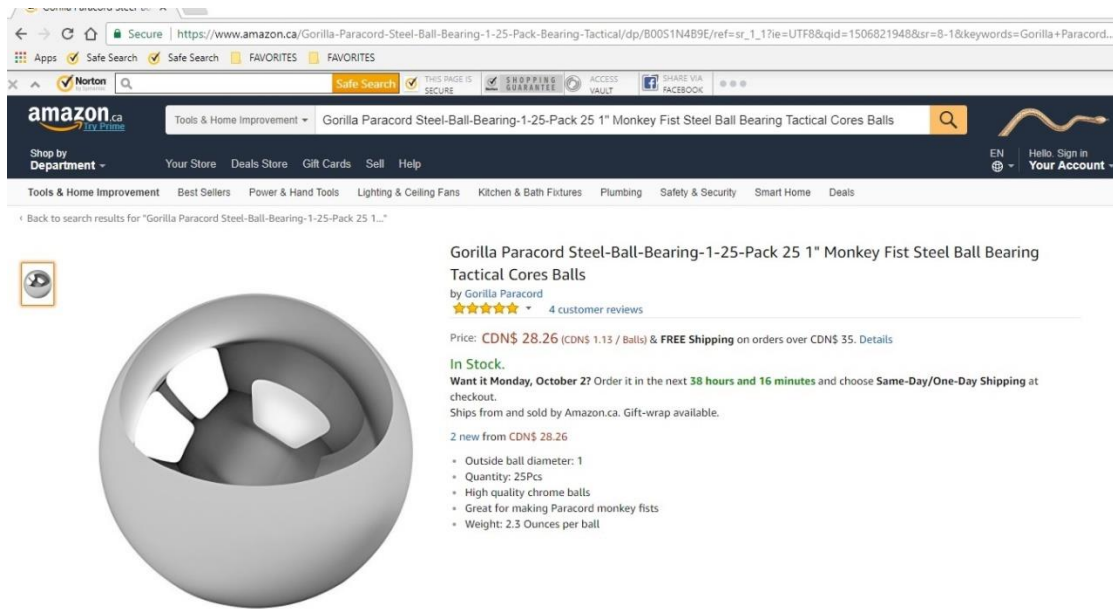
Hi Sheldon

The low cost bearings shown below are likely going to be the competition bearings although I cannot be certain these will be used given Skills Ontario will determine the final bearing selection when they need to buy obtain the 150 bearings the competition will require.

I have been told by the Manitoba Robotics Tech Chair that the bearings shown below do respond to a magnet.

Bob

2018 Skills Ontario Robotics Question and Response Summary Document



Question Forty One:

From: Emer, David (Mary Ward)

Sent: Monday, November 13, 2017 6:14 AM

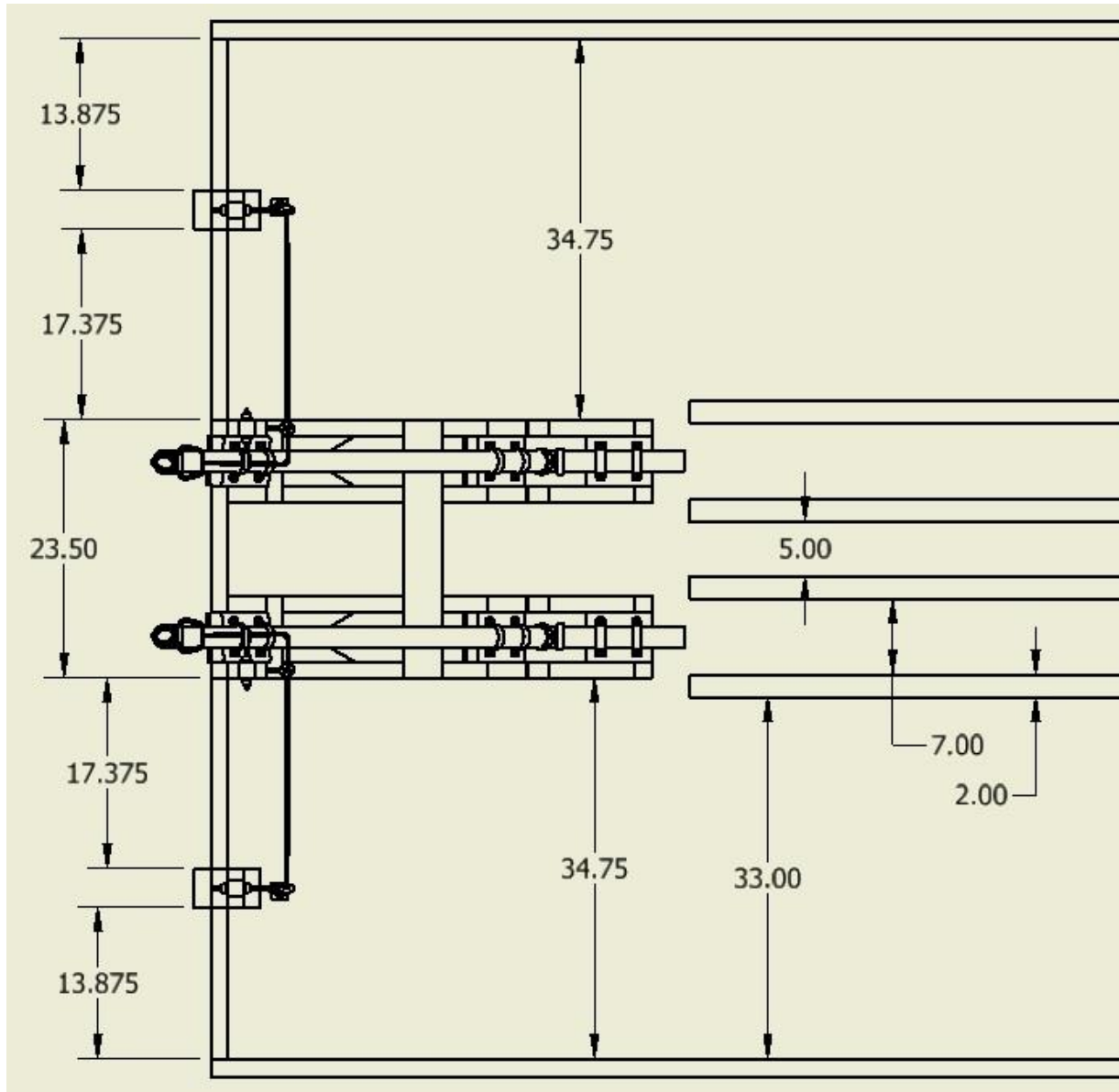
Subject: Re: 2018 Skills Ontario Robot Court Elements Needed

Bob,

What is the distance from the tower to the release mechanism? It doesn't have that measurement on the drawing.

Dave

Response Forty One:



Question Forty Two:

Response Forty Two:

2018 Skills Ontario Robotics Question and Response Summary Document

Question Forty Three:

From: Katelynn Buchanan

Sent: Monday, November 13, 2017 4:32 PM

Subject: Hinge Finger

Hi Bob,

Which type of hinge is used for the hinge finger? (see below)



What is the hinge finger used for?

Thanks,

Katelynn

Response Forty Three:



Cut or grind the Hinge Pin End Cap off one end and a single hinge gives you the two fingers you need. The Hinge Fingers keep the bearings in the well until the finger is pulled.

Question Forty Four:

2018 Skills Ontario Robotics Question and Response Summary Document

From: Kownacki, Patryk

Sent: Monday, November 13, 2017 8:26 PM

Subject: Robotics Competition

What should I study in order to be successful in the robotics competition? I am a computer engineer student at St Ignatius of Loyola.

Patryk Kownacki

Response Forty Four:

Hi Patryk

The Skills Ontario Robotics Competition enables teams the freedom to use any control platform of their choosing.

Once your team has selected the control platform they will use then you need to acquaint yourself with this platform's capabilities, how it relates to the hardware your team has selected to use and the performance strategy they are trying to implement.

Bob

Question Forty Five:

From: Murtadha Nisyif [<mailto:nisym9166@wrdsb.ca>]

Sent: Wednesday, November 15, 2017 10:38 AM

To: Bob Tone

Subject: Ontario Skills Competition

Hello Mr. Bob, I have some questions I hope if you can answer them. First, are we allowed to touch any objects of the game that are meant stationary, in both fields. Second, if the ball bearings managed to touch the robot before the ground and then land on the ground (not inside the robot, yet!), is it permitted?

:)

Thank you

Response Forty Five:

Hello Murtadha

- 1) YES your robot can touch the stationary objects but your robot cannot move these objects in both fields.
- 2) When the Bearings are released from the oil well your robot must be completely outside the tape lines that define the area where your robot will build a pipe line. It is not a problem if a bearing rolls outside the area defined by the tape lines and touches your robot and comes to rest on the open court floor. Your robot will be eligible to pick up a bearing in this situation and deliver it to the Haz Mat Area.

2018 Skills Ontario Robotics Question and Response Summary Document

Bob

Question Forty Six:

From: Murtadha Nisyif

Sent: Thursday, November 16, 2017 10:02 AM

Subject: Ontario skills

Hello Mr. Bob

We have couple more questions, First, forbidden to cross the tape lines during the whole game? Second, where in the game rules package does it state that it's not permitted to be on the tape lines of the tele-op. Third, what happens to the balls that are trapped within the tape lines in the tele-op?

We are sort of confused from reading the package and it sometimes contradicts with your answers, and thank you.

Murtadha

Response Forty Six:

Hi Murtadha

1. The restriction related to your robot must be outside the tape lines only applies at the time your robot is releasing the bearings. At all other times your robot is free to travel over the tape lines.
2. On page 15 of the Skills Ontario scope it states:
When Teams release the Oil (Bearings) from a Well they must ensure that ALL Elements of their Robots are well away from the Pipeline to ensure that no element of their robot's (Frames / Wheels / Object Management Systems) are in a position to prevent / hold the Pipeline from breaking apart.
The referee's need to reference the tape lines when monitoring robot's positions to ensure they are in compliance with the rule stated above.
3. Once the ball release process has ended then the robot is free to enter the space between the tape lines to recover spilled bearings or to manipulate pipe pieces to make bearings the stopped inside a pipe roll out of the pipe.

Bob

Question Forty Seven:

From: Moksha Srinivasan

Sent: Thursday, November 23, 2017 3:59 PM

Subject: Robotics Scope Inquiry - Turner Fenton

Hello Bob,

2018 Skills Ontario Robotics Question and Response Summary Document

My name is Moksha, I'm part of the robotics team at Turner Fenton Secondary School and we are participating in the skills robotics competition.

We were wondering if it's allowed for the pipes to touch the ground before they reach the cradle. For example, push the pipes off the pipe racks and pick them up off the floor.

Thank you for your help!

Moksha

Response Forty Seven:

Hi Moksha

The scope does not place any restrictions on how a team manages the pipes in the pipe line game so YES you could push them out of the pipe rack and roll them along the floor.

Bob

Question Forty Eight:

From: Michael Jiang

Sent: Thursday, November 30, 2017 4:35 PM

Subject: SKILLS Robotics Question

Hi Bob,

We are part of Unionville High School.

We have a question regarding the SKILLS Robotics Team of 4 competition. For the tele-operated session, we are wondering if there are any penalties if any external object (anything not a ball bearing) is left in the dump zones of the ball bearings? And would the penalty apply even if the object is removed from the zone after (all within the play time).

Sincerely,

Micheal Jiang

URobotics

Response Forty Eight:

Hi Michael

Sorry for the delayed response time. I was away and your question generated considerable discussion within the Skills Canada National Robotics Technical Committee.

The NTC's response is:

2018 Skills Ontario Robotics Question and Response Summary Document

- 1) Bins / Boxes / Bags or other objects attached to or under the control of the robot at any time during a game are considered to be part of the robot.
- 2) At the end of a game Bearings in or controlled by any of these external objects are considered to be 'controlled by / in the possession of the robot whether the robot has disconnected from these external objects or not and as a result the bearings being controlled by these external devices would have ZERO point value.
- 3) Regarding can a robot leave behind external devices in the Hazmat Area at the end of the game?
NO.

Rationale: Allowing this would be the equivalent of allowing the pollution of the Hazmat Area.

Bob

Question Forty Nine:

From: Zeyad Ghulam

Sent: Monday, December 4, 2017 10:33 AM

Subject: Ontario Skills Competition

Hello Mr. Tone,

I have a couple of questions,

First, Is the refinery bolted to the ground (stationary) or is it just placed on the field ?

Second, if the refinery is not stationary and the ball bearing that come through the pipeline have enough force to move the refinery from its initial position, is this considered to be illegal ?

Thank you,

Zeyad Ghulam

Response Forty Nine:

Hi Zeyad

Sorry for the late response.

The Refinery / Haz Mat Area will be fixed securely in place and not moved by bearings hitting it. Robots attempting to push it out of place will be directed to stop.

Bob

Questions Fifty to Fifty Three:

2018 Skills Ontario Robotics Question and Response Summary Document

From: Mario Blouin

To: Bob Tone

Subject: Scope clarifications

Hi Bob,

Wondering about this.

I know we are using previous scopes or the nationals to write this one. But we need to make some adjustments, otherwise it creates confusion.

On page 10, the starting position of the tele-operated robots are not identified. Not answered correctly in question 8, Justin was asking for tele-operated (remote) robot, not autonomous.

On page 14, the scoring sheet should be individual. Teams are not playing against anyone until the playoffs. All 7 courts or so will run at the same time. I guess you can use the same sheet, but you will need a scorer for each court.

On page 15, • Games will involve Two Teams at a time. Unless the courts are stacked one against the other, you will not be playing against anyone. Each round should have as many teams as we have courts.

On page 16, first line shouldn't be there because standings are based on a team's total points, There is no room for 2 teams, 4 robots on that court and not enough pipes for each team.

• If Time Permits, teams will participate in an equal number of games against each opponent Team.

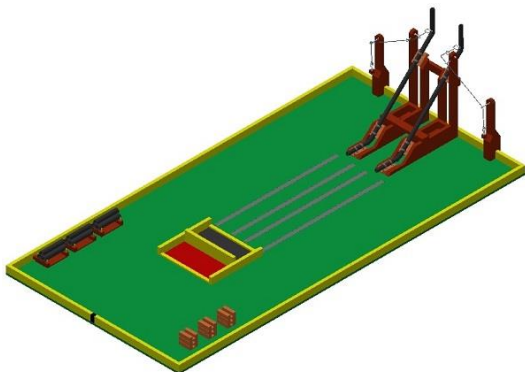
Mario

Responses Fifty to Fifty Three:

Hi Mario

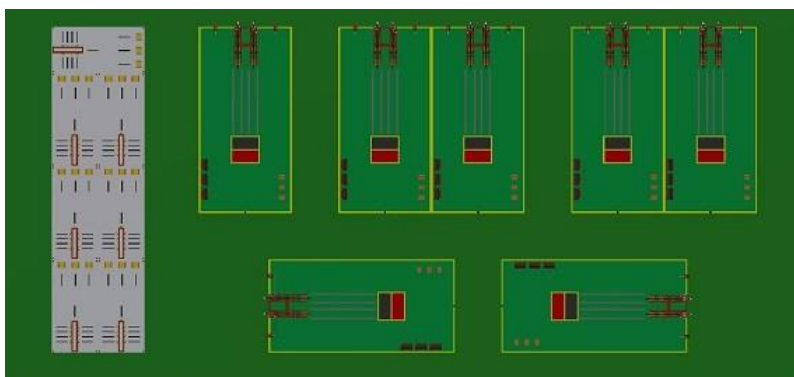
You are correct all of these areas of the Ontario scope require clarification.

- The teleoperation robot starting location is at the Mid-point of the end wall directly opposite the Haz Mat / Refinery shown in the image below.



2018 Skills Ontario Robotics Question and Response Summary Document

- 42 School Boards have requested Robot Team Spaces. You are correct teams are not playing directly against one another in the sense of 'Winning or Losing' an individual game given Total Points Scored in all games a team plays will determine Tournament Standing.
- In each Round Seven Tele-operated and Seven Autonomous Robots will be active at the same time.



- Teams will always have exclusive use of their assigned court space
- You are correct reference to playing against each opponent an equal number of times does not apply at the Ontario level

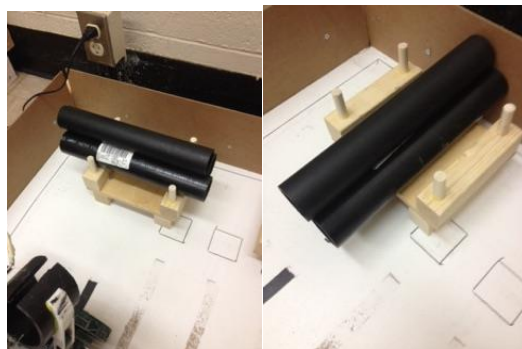
Question Fifty Four:

From: Ivan Conrad

Sent: Monday, December 11, 2017 3:14 PM

To: bobtone@rogers.com

Several questions have been asked about the orientation of the pipes in the train cars in the autonomous game. I've attached two pics. Are both horizontal orientations acceptable for scoring points? Thanks



Response Fifty Four:

YES the pipes in both images would score full points.

2018 Skills Ontario Robotics Question and Response Summary Document

Question Fifty Five:

From: Gabe Maskaluk [mailto:30gaber@gmail.com]

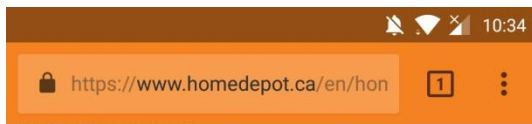
Sent: Wednesday, December 13, 2017 10:41 AM

To: Bob Tone

Subject: Robotics

Hey Bob,

We are finding that using duct tape to hold the ABS pipe in place on the oil well isn't sufficient. I think we should be using steel strapping instead so the pipes are secure. Just like to know your input on this. I attached a photo of the strapping I recommend using.



Dahl

All Round Strapping, Steel,
22Ga 1/2-inch x 10 Feet

★★★★★ (0) ▼

Write a Review ✎

Questions & Answers (0)



\$4.98 / each

Gabe Maskaluk

Eden High School Student

Response Fifty Five:

Thank you for this suggestion it is a good idea that will improve the consistency of the Oil Well Structures.

2018 Skills Ontario Robotics Question and Response Summary Document

Question Fifty Six:

From: Emer, David (Mary Ward)

Sent: Sunday, January 14, 2018 7:29 AM

To: Bob Tone

Hi Bob,

Happy new year! Is there an email list of questions like you've done in years past? Would you have the distance of the tower (with pulling rope)

Thanks,
Dave

Response Fifty Six:

The Questions and Responses are posted to the Scopes section of www.skillsontario.com

The image below references the height of the Oil Well Pull Block.

If this height moves outside the range shown below based on the center of the block during game play it will be adjusted and brought back into this range.

Question Fifty Seven:

In the Pipeline game can a Team select their own Robot Starting Position given the scope does not define an exact Robot Starting Position?

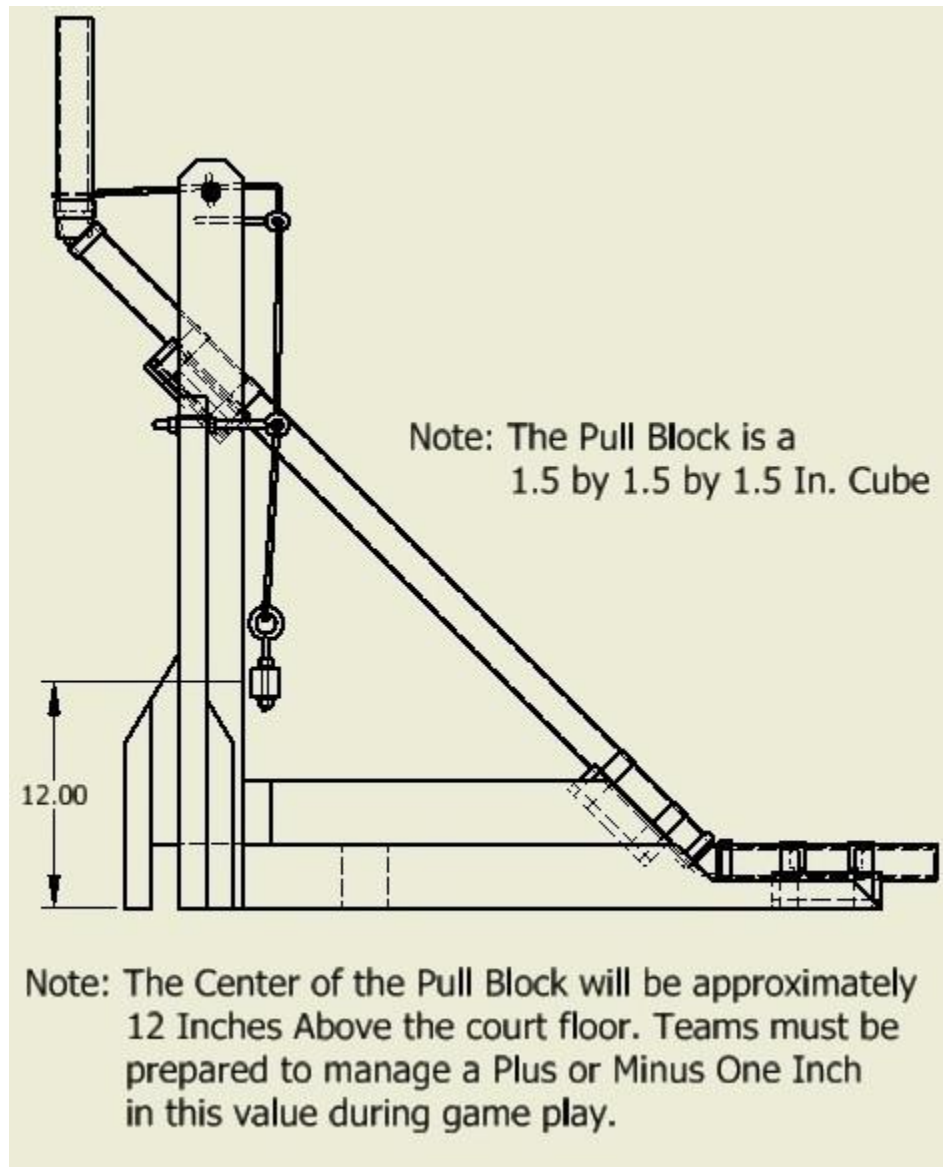
Response Fifty Seven:

This question was asked earlier in Ontario (Question 8 and Question 53) and I provided the answer at the mid-point of the end wall opposite the Haz Mat Area. This was based on my understanding that this was the intended Starting Point discussed during the game design process.

However, when this question came to the National Technical Committee from a Team outside Ontario the NTC decided on a different response.

The NTC response is that given there are no text or images in the scope defining a required PIPELINE Robot Starting Position then by default it will be Team Decision where they place their robot at the start of a Pipeline Game as long as they are in compliance with the Maximum Overall Size Restriction.

Bob



Lessons Learned:

We learned some lessons during the Toronto Catholic School Board Level Competition Experience.

Lesson One:

We applied the National Decision of 'Free Bee's Count Rule' meaning Teams were awarded 2 points per Bearing when Bearings travelled across the open court floor and into the refinery.

There was no impact on Tournament Standing based on Free Bee's.

2018 Skills Ontario Robotics Question and Response Summary Document

However, in Playoff Play where it is a win or loose situation a Free Bee did change the outcome of a game that otherwise would have been a Tie Game.

Lesson One Learned:

Based on this experience we will not be assigning any points based on Free Bee Bearings during the Skills Ontario Competition.

It was extremely easy to see when Free Bees entered the Refinery.

Given:

- We do not want a person entering the court to remove 'Free Bee's' from the refinery.
- We will assign an out of the game status to the 'In the Refinery Free Bees' and
- We will provide the referee with some spare bearings and they will simply drop onto the court floor at the mid-point of the long side court wall the one, two or three Bearings needed to replace the 'Free Bees'.

Lesson Two:

An unexpected issue that occurred a few times was teams released the bearings with no pipes in front of the Well but one or two bearings remained in the Well.

Lesson Two Learned:

- We made it a Team Responsibility to bring this situation to the attention of the Referee.
- We created a wire device that was used by a Competition Assistant to push these reluctant bearings out of the well with out interrupting the game clock.
- If Bearings remained in the Well at the end of a game they were assigned a value of ZERO Points.

Lesson Three:

We applied the National Decision to let Teams position their robot anywhere they wanted to as long as it was in compliance with the Overall Robot Size Limitation.

The result was some Teams positioned their Robot where it was almost in control of the Well Release Pull without moving at all.

By observation this was perceived as being an unearned advantage.

Lesson Three Learned:

- We will apply the decision made in the fall in response to question 8.

2018 Skills Ontario Robotics Question and Response Summary Document

- All Robots will use a common Starting Point which will be at the mid-point of the end wall opposite the Haz Mat Area. This is based on it was the intended Starting Point discussed during the game design process though not clearly stated in the scope text.