

Waipahu High School



SAFETY MANUAL

FIRST STEAMWORKS (2017)

Team #2477: Marauder Rascals

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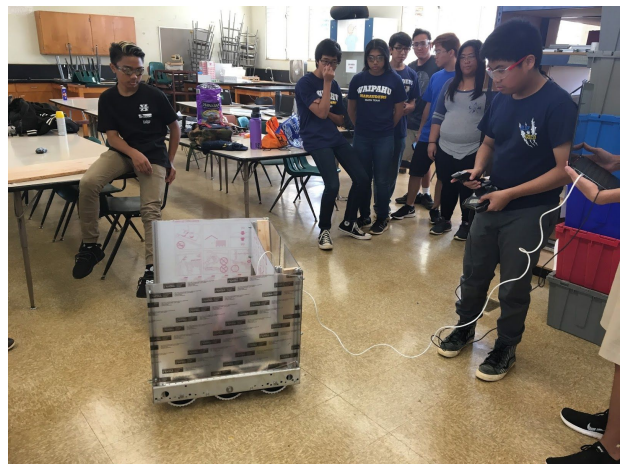
Safety Culture

Safety Meetings

We often hold meetings where we discuss how to be safe and what to do in case of an emergency. In the beginning of build season, we held a mandatory meeting where we quizzed our members individually on being safe. Members were asked questions in the categories of Personal Protective Equipment (PPE), Work Area Maintenance, General Shop Safety, Drill Press and Hand Drills, Miscellaneous Rotating Power Tools, Milling Machine, and FRC Game Safety. In order for each member to take part in working on the robot, they needed to get a perfect score on the safety quiz.

Workroom

Our workroom is not as big as the typical robotics room but we still try to use our space as efficient as we can. We have a small storage place where we keep our tools and machines. They are easily accessible and are stored where they won't be a danger to others. Our workrooms and storage area are kept organized and are cleaned regularly.



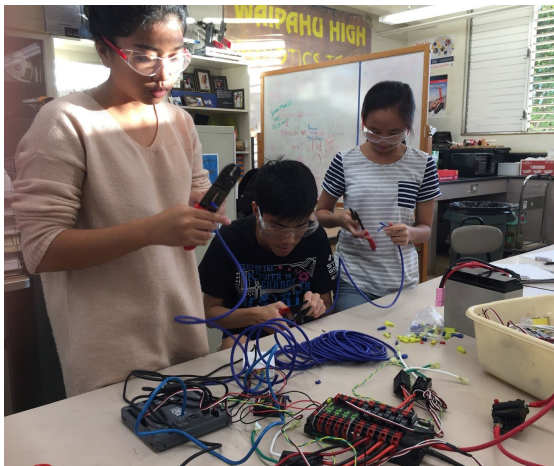
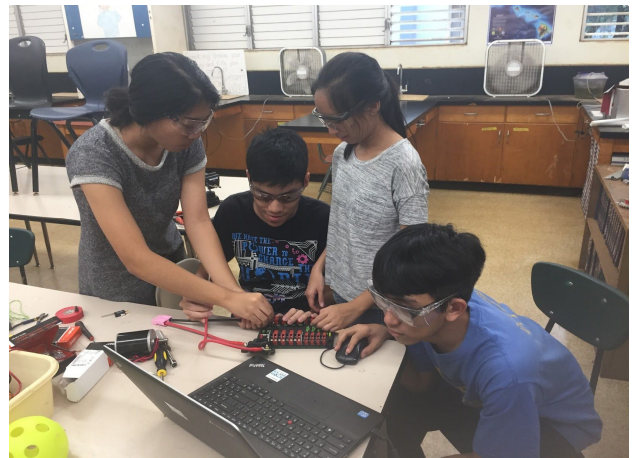
Power Tools and Machines

Members learn how to use the machines and power tools from FIRST veterans. The veterans teach and give demonstrations on how to use the tools. Before a member is allowed to use a machine they would have needed to get a perfect score on their safety quiz. Our tools and machines are regularly checked to see if they are working because we use them often.



First Aid Kit / Battery Spill Kit

Our team has two First Aid Kits which are easily accessible in our workroom. Because we have had an increase of females this year, we decided to add female hygiene items to our First Aid Kit. Due to financial restrictions we do not own certain things such as a Battery Spill Kit, but we are able to communicate and work with other teams to be able to use their things in time of an emergency.



Purpose

The purpose of this Safety Manual to ensure that everyone on the team knows how to be safe and is safe.

Scope

This manual applies to people involved in the *FIRST* Robotics Competition, including student members, mentors, and advisors.

Responsibilities

Anyone working and involved in the *FIRST* Robotics Competition, is responsible for safe behavior throughout the FRC Season.

All participants

- Read and understand FIRST Robotics Competition Team Safety Manual
- Identify and report any hazardous conditions.
- Wear the appropriate attire: personal protective equipment (PPE), long pants, etc.
- Report unsafe actions acted by another team.
- Maintain a safe and organized workplace.
- Become familiar with the work environment. Know where the nearest exit and fire extinguisher is.

Mentors

- Remind everyone of their responsibilities.
- Mentor the Safety Captain to ensure that they understand the responsibilities.
- Provide guidance to the members and encourage safe behavior

Safety Captain

- Encourages safety in the team
- Inspects work area and pit
- Organizes and cleans work area and pit
- Educate other members on safety information
- Have an easy access to the First Aid Kit

Appendix A: General Safety Assessment

Name _____

Date _____

General Safety Assessment

Directions: Read each question carefully, then circle the letter that best answers the question. You must answer **all** of these questions correct to use any power tool during this VEX or FRC season.

Personal Protective Equipment (PPE)

1. What should you be wearing at all times while working with **any** power tool?
 - a. Shatterproof Eye Protection
 - b. Firm-grip Working Gloves
 - c. Covered-toe Shoes/Boots`
 - d. All of the Above
 - e. A and C ONLY
2. Should you be using loose clothing while using a power tool? Why or why not?
 - a. Yes, as long as you don't get caught.
 - b. Yes, as long as you let an Officer or Advisor know.
 - c. No, it's not acceptable in the shop.
3. Should gloves be worn while working with rotating power tools? Why or why not?
 - a. Yes, they reduce the risk of burns and cuts on your hand.
 - b. Yes, they offer better grip on handheld tools.
 - c. No, they may get caught in rotating parts.
 - d. No, gloves shouldn't be worn at any time.

Working Area Maintenance

4. Izaiah accidentally causes a hazardous spill. What should he do?
 - a. Let an Advisor know, then wait for further instructions.
 - b. Let an Officer know, then wait for further instructions.
 - c. Clean it up.
5. After using a power tool, what should you do to your working area?
 - a. Leave it alone, keep it ready for the next person.

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- b. Leave it alone, save cleaning up for clean up day.
 - c. Clean it up.
6. After using a Power Saw, John has leftover scrap metal. Where should he put it?
- a. Leave it on the table; someone may need it later.
 - b. Throw away in appropriately designated or labelled bins.
 - c. It doesn't matter: it's scrap metal.

General Shop Safety

7. To remove dangerous burrs from a cut piece of metal, always use a _____.
- a. File or Belt Sander
 - b. Wait, this is a trick question. Burrs aren't dangerous.
 - c. Good teammate to do the work for you.
8. What should you do if you find a power tool's power cord is damaged?
- a. Nothing, it's still okay to use.
 - b. Nothing, just hide it from your instructor and teammates and use it anyway.
 - c. Report it to the teacher immediately.
 - d. Throw it away yourself.
9. Daniel accidentally cuts himself with a power tool. What should he do?
- a. Scream. Report the incident to the teacher immediately.
 - b. Stay calm. Report the incident to an Advisor immediately.
 - c. Stay calm. Report the incident to an Officer immediately.
 - d. Stay calm. Keep cutting and let the wound heal itself.
 - e. Blood party! Woo!
10. Gwen is not wearing goggles and is stripping wire for the elec. board. Is this okay?
- a. No, because it's not safe.
 - b. No, because she's wearing loose clothing.
 - c. Yes, because stripping wire doesn't require safety equipment.

Misc. Rotating Power Tools

11. How do you hold down your piece when using a machine?
- a. With your hands.
 - b. With a clamp, or clamps.

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- c. Machines are safe enough so no need.
12. All protective guards must be set on the Angle Grinder before using it.
- True
 - False
13. Tools must be turned on when you are changing their bit.
- True
 - False
 - Doesn't matter
14. Always cut _____ you
- Towards
 - Near
 - Away from
15. Why **don't** you need to lubricate your drill bit when drilling holes into metal?
- Because it's gonna make a crooked hole.
 - Because it's gonna damage the bit.
 - You need to lubricate because it prevents overheating.
 - You need to lubricate because bits can't work dry.

FRC Knowledge

16. How many members max on the drive team (drivers, coaches, human players, pilots)?
- 1
 - 2
 - 3
 - 5
17. True or False. A Coach isn't allowed to touch the Robot and Controller.
- True
 - False

18. What should ALL members of the Drive Team be wearing?
- a. Safety Goggles/Eye Protection
 - b. Safety Gloves
 - c. Working Jacket/Overalls
 - d. All of the Above
19. Which one is worth more match points during the tele-op period?
- a. One rotor turning.
 - b. Ten balls in the high boiler.
20. What do you need to do in order to take off?
- a. Fill the boiler to the max.
 - b. Make sure all rotors are turning.
 - c. All of the above.

Appendix B: General Safety Assessment Scores**

*** Scores are hidden for confidentiality reasons.*

Names

Score