

# **PHRED TEAM 847 TEAM ORGANIZATION HANDBOOK**

**Version 2.0 – November 4, 2010**



Team 847  
Philomath High Robotics Engineering Division  
“Partnerships Under Construction”



## Table of Contents

Synopsis .....	1
Our Purpose .....	2
The Basic System.....	3
Organization Chart.....	4
Team Captain .....	4
Team Council.....	4
Safety .....	5
Finance.....	6
Marketing.....	7
Engineering Excellence & Inspiration .....	8
Chairman's.....	9
Build.....	10
Website .....	10
Animation .....	10
Documentation.....	10
Yearly Calendar .....	11
Implementation Process .....	12



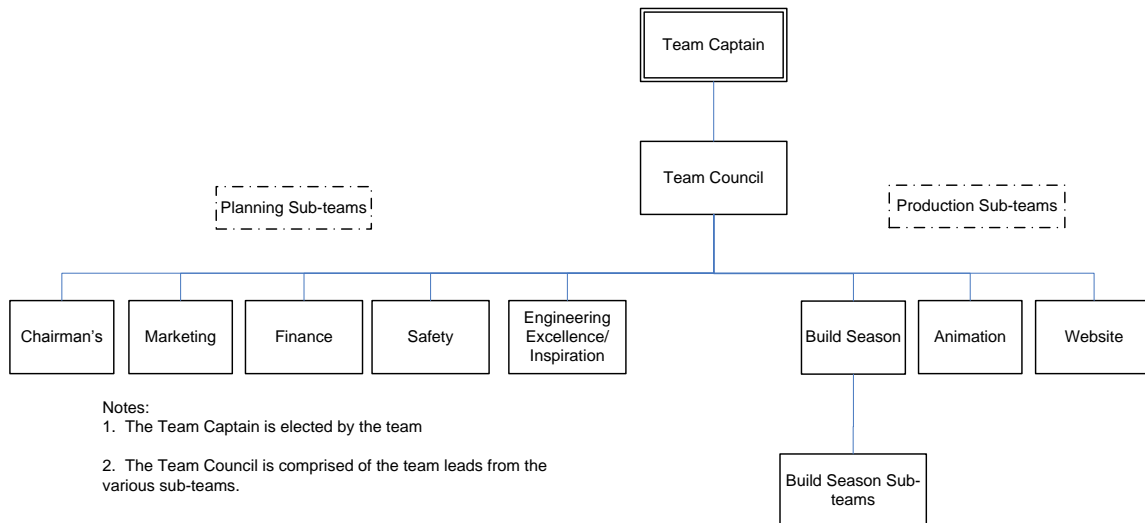
Team 847  
Philomath High Robotics Engineering Division  
"Partnerships Under Construction"



## Synopsis

Team 847 will be implementing an organizational structure composed of a number of planning teams. These teams will be responsible for planning and managing the activities within their area of focus. Every student on the team will be a member of one of the Planning Sub-teams. Students may also be a member of a Production Sub-team.

### Organization Chart



### Advantages of this structure

- Students become more involved in managing the team
- Students take on the responsibility for the day-to-day planning of team activities
- Students have the opportunity to learn leadership skills
- Team activities will be better planned
- Team planning will be less hectic and will consume less meeting time
- More time can be spent on training and projects
- More meetings will be about “doing engineering” and less about planning events

### Implementation

This structure will be implemented during November in order that the sub-teams can get set up and begin functioning before the build season arrives in January.



## Our Purpose

In an effort to increase the sustainability of PHRED and give the team members a realistic understanding of the business side of engineering, we are introducing a new team organizational system this year. We feel this system will not only fulfill the above goals, but also instill a sense of leadership and responsibility in PHRED team members.

FIRST, as an organization, has always encouraged the idea that FRC teams should be *as close to “real-world engineering” as a student can get*. In recent years, PHRED has allowed many of those “real-world” responsibilities to fall on our mentors’ shoulders. This overloads our mentors and deprives the students of important learning experiences. More importantly, this structure is not as stable as it could be; it does not facilitate the training of new administrative leadership as students or mentors leave the team.

The new team organization strives to correct these problems by requiring each PHRED team member to be part of a Planning sub-team that operates year round. This will be in addition to his or her Production sub-team duties. This requirement will move responsibilities for team administration from our mentors to the students, while providing a structure within which the students can learn and explore these activities.

This structure will also provide new leadership opportunities through the introduction of a Team Council made up of the Planning sub-team leaders. Under the leadership of the Team Captain these sub-team leaders will oversee the operation of the entire team. Each individual will be responsible for leading his or her sub-team meetings and calling full-team meetings when necessary. These students will gain valuable experience in meeting management and leadership while providing an encouraging example to their peers.

Strong leadership examples and previous experience with the duties of a sub-team, will allow new student leadership to emerge. This will provide a greatly increased level of stability for the team. With more of the administrative tasks resting on the students’ shoulders, the mentors will be able to move more towards facilitating PHRED, rather than leading it. It will also be clearer to students where responsibility lies and as accountability increases, so will efficiency. More meetings will be about “doing engineering” and less about planning events.

This structured student leadership model and more focused team participation in administrative responsibilities necessary for the continuation of PHRED, will allow our team to achieve a new level of sustainability, while moving closer to the goals and spirit of FIRST.



## The Basic System

In the new organization, there will be three main types of student-led teams:

1. Team Council

Lead by the Team Captain. This council is responsible for many of the leadership duties of the team, including communication and morale-building activities. Each Planning sub-team leader will join this council, along with representatives from Website and Animation.

2. Planning sub-teams

Engineering Excellence & Inspiration, Safety, Finance, Marketing, and Chairman's. Each of these teams is an oversight group. They are responsible for planning activities related to their specialization and leading the rest of the team in carrying them out.

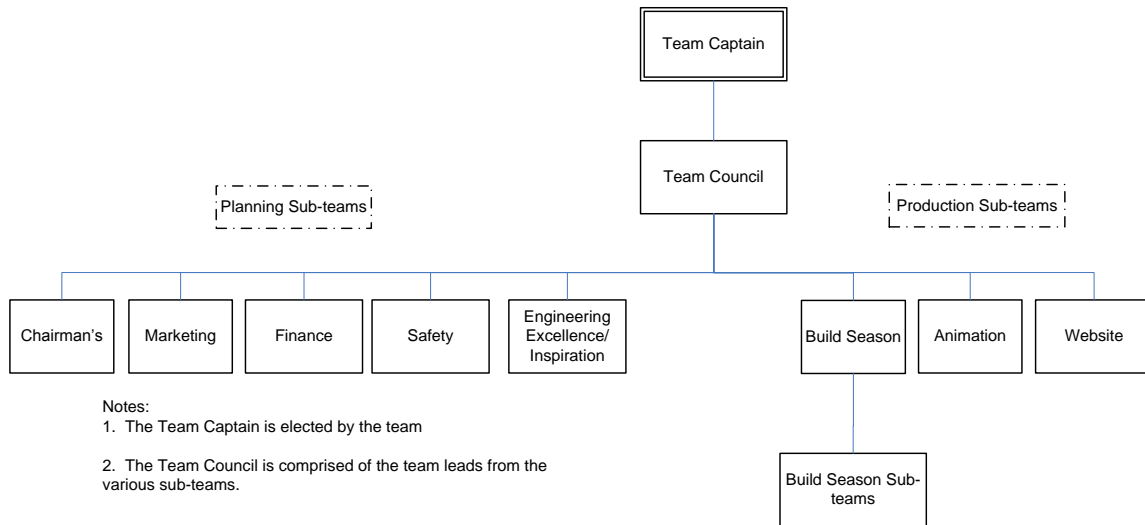
3. Production sub-teams

These teams are actively involved in creating one of the three products of PHRED: The robot during build season, Animation, and Website. Any member of the team can participate on any number of these teams provided they are also part of a Planning sub-team.

Mentors will serve as facilitators for all of the sub-teams, with a primary mentor assigned to each. At times, the mentor might need to help teach leadership and organizational skills drawing on his or her own wealth of experience. He or she will serve as a resource for the sub-team and support the team leader.



## Organization Chart



## Position Descriptions

### Team Captain

The Team Captain's role is to oversee the team, make sure that team is going where it wants to go, and serve as a liaison for the team to communicate with the mentors and administrators. In practice, this means helping with most, if not all, of the events the team participates in, or plans. This also means working closely with the team, and getting opinions from them often. By working with the team, the captain can also get an idea of what works, and what doesn't. The captain can then relay that information to the mentors, or the Team Council, so that the problem can be corrected. He or She also helps plan team bonding and team building activities.

### Team Council

The Team Council is made up of the student team leaders from each Planning sub-team, representatives from the Animation and Website teams, and the Team Captain. This council is primarily about communication, keeping all the sub-teams in touch with each other, the mentors, and the rest of the team. They schedule meetings and events, creating a comprehensive calendar for each month. The council is also positioned to defuse conflict, monitor morale, and build team spirit. Three times per year the council will perform a comprehensive evaluation of PHRED's current standing. They are active throughout the year.



## Safety

Planning Sub-Team  
2 Members

The safety team is responsible for creating and implementing the safety program for the team. Examples of this include maintaining training standards and records, upkeep of the first aid kit, having emergency plans, and helping the team receive first aid training.

### Yearly Responsibilities

- **Build Season**
  - During the build season, Safety keeps an eye on the team, ensuring we follow our safety training and not letting safety slide in the interest of expediency.
- **Competition**
  - When competition comes around, this team's build season duties continue with the added responsibility of familiarizing the team members to the competition space (e.g. finding fire exits and first aid resources at the regional). They will also be in charge of handing out safety tokens to other teams and talking with safety judges.
- **Off-Season**
  - Team Education is this team's main off-season goal. It is expected that they will host a safety-training workshop for the whole team, including new members. For example, this would be a great time to find CPR or First-Aid classes and encourage team members to attend them.
  - Most summer events will require this team takes the same precautions used at the regional.
- **Pre-Season**
  - Right before build, the safety team should provide another safety training session and make sure we have the necessary resources like a current first aid kit, first aid trained team members, and plans for emergency situations.

Busy Times: January & February for Build Season, March for Competition, June & December for Training, November for Pre-Season.



## **Finance**

Planning Sub-Team  
5 Members

The Finance sub-team ensures we have the money necessary to operate and that it is being managed well. Budgeting, purchasing, and fund-raising make up this team's main duties. Interacting with our sponsors and sustaining a positive relationship with them also falls under this team's umbrella.

### Yearly Responsibilities

- **Build Season**
  - Keeping the robot on budget, making parts purchases, and keeping track of our spending is important at this time.
- **Competition**
  - Submitting the bill of materials to the judges is vital for this sub-team.
  - This team is also responsible for making the travel arrangements and determining funding for them.
- **Off-Season**
  - When it comes to our sponsors, the finance sub-team steps forward to keep them involved and happy. This team might accomplish this by sending out thank-you's and hosting presentations to inform sponsors of the team's success.
  - With current sponsors taken care of, this team then moves on to fundraising, fundraising, fundraising, i.e. searching out new sponsors and planning fundraising events for the team.
- **Pre-Season**
  - This is the time for Budgeting. With input from the other sub-teams, our mentors, and knowledge of the current finances, this team puts together a budget for the upcoming year and gets it approved.

Busy Times: January & February for Build Season, March for Competition, April for Appreciation, May & August for Fundraising, June & October for Budgeting, November for Pre-Season.



## Marketing

Planning Sub-Team  
5 Members

The Marketing sub-team is responsible for promoting PHRED and FIRST to the community, other teams, and regional judges. They also prepare most of the presentations, publications, and other handouts for the team. An interesting aspect of this is creating a consistent team image including not only the way the team looks, but also the way we interact in public.

### Yearly Responsibilities

- **Build Season**
  - During build season, this team oversees the creation of robot-specific materials to promote the team at the regional, including award submissions, and scouting flyers.
  - They also have input into the design of the robot and pit to keep them consistent with PHRED's image.
- **Competition**
  - During the competition this team is kept busy in the pit talking to other teams and judges about how very AWESOME the team is and helping our team members to do the same.
  - The Marketing team also monitors PHRED's behavior and appearance to make sure we are putting on a professional front, while still cheering loudly and supporting the robot.
- **Off-Season**
  - Promoting FIRST and PHRED to the community takes up a lot of the Marketing sub-team's summer. They organize events like the Philomath Frolic Parade and Da vinci days, where we are trying to educate people about FIRST and build enthusiasm for science and technology.
  - The Marketing team is also responsible for helping to prepare presentations for the other sub-teams who are recruiting sponsors, mentors, and new team members.
- **Pre-Season**
  - At this time, the Marketing team evaluates the current team image and builds a new campaign for the coming year.
  - There is also a lot of design work and publications that the Marketing team can complete in preparation for the regional.

Busy Times: January & February for Build Season, March for Competition, May, June, & July for Events, October for Image Campaign, November for Pre-Season.



## **Engineering Excellence and Inspiration**

Planning Sub-Team  
4 Members

The Excellence and Inspiration team is dedicated to advancing respect and appreciation for Engineering within both the team and community. Their key purpose is to plan educational activities to inspire interest in engineering and a drive for engineering excellence. Activities common to this team would be hosting educational events, inventory upkeep, and organizing build-related meetings. The robot is one of the vehicles they will use for this work and they are responsible for integrating the actions of the Build team in its design and maintenance of the robot.

### Yearly Responsibilities

- **Build Season**
  - During build season, this team oversees the “Integration” function, working with the various build sub-teams to meld their projects together. They help keep the team on schedule and watch over our parts inventory.
- **Competition**
  - During competition this team is responsible for the continued function of the robot. When things break down, they find the sub-team necessary to repair them. If tools or spare parts are needed, they provide them.
  - Design awards fall under this team’s umbrella as well, informing the marketing team of where we are excelling and providing the necessary technical details.
- **Off-Season**
  - During the off-season this team hosts workshops for the team and figures out where our robotics knowledge needs improvement.
  - This sub-team also promotes Science and Technology educational events or projects for the community. This involves projects to promote engineering, science, & technology at established events such as setting up a hands-on learning booth at Da vinci days. This team may also create our own events such as a science fair or a robotics expo.
  - Robot maintenance is an important summer responsibility, keeping the robot running for events like the frolic parade. They might host a full-team meeting to make the necessary repairs and provide the appropriate tool and part inventory.
- **Pre-Season**
  - An important responsibility at this time is the performance of a complete supply inventory and making sure any gaps are filled.
  - This is also the time for determining design goals and creating a preliminary build season schedule.

Busy Times: January & February for Build Season, March for Competition, June & September for Education, November for Pre-Season, December for Inventory



## **Chairman's**

Planning Sub-Team  
3 Members

The Chairman's sub-team keeps the team aligned with the spirit of FIRST. They document the team's activities and prepare the Chairman's award submission. They also plan community and in-school service events that show our appreciation for the opportunity FIRST presents. The Chairman's team is also responsible for recruiting new members to the team.

### Yearly Responsibilities

- **Build Season**
  - At this point the Chairman's team is documenting the build process and completing the team yearbook.
  - The completed Chairman's Award submission and Woody Flowers essay are also due around this time.
- **Competition**
  - When competition comes around, the Chairman's team works closely with the Marketing team to promote the team, especially where interacting with other teams is concerned. They give awards to teams that are doing well, help teams that are struggling, and show the regional volunteers that PHRED appreciates their efforts.
  - This is also when the Chairman's Award presentation occurs.
- **Off-Season**
  - Mentor Appreciation, Senior Appreciation, Teacher Appreciation, and School Appreciation efforts are all coordinated and supported by the Chairman's team. They also organize community service projects.
  - Recruitment of new members falls under this team's purview as well.
  - This team continues documentation of the team's activities, taking photographs, collecting reports, and archiving them.
  - With the start of the new FIRST year, the Chairman's team takes time to do research and prepare themselves for the submission, looking at other teams and past winners, so they can develop suggestions for improvement.
- **Pre-Season**
  - As much as possible, this is when the Chairman's Submission can be prepared, compiling information from all the reports and documentation that have been collected over the year.

Busy Times: January & February for Build Season, March for Competition, April & June for Appreciation, May & September for Recruitment, July & October for Community Service, November for Pre-Season, December for Lego-League. (Year-Round)



### **Build-** Production Sub-Team

The Build team operates under the oversight of the Engineering Excellence & Inspiration Planning sub-team. This team will be further sub-divided into groups like Drive train, Object Manipulation, Electrical, and Software as necessary. Members of the Build team will still be expected to participate on their Planning sub-teams during Build Season as well as their work building the robot. They should also be attending any educational events put on by either the Safety or Engineering Excellence & Inspiration sub-teams. All members of this team are required to join one of the Planning sub-teams as well.

### **Website-** Production Sub-Team

The Website sub-team plans, designs, implements, and maintains the team website. In order to fulfill their communication duties, they send a representative to each Team Council meeting and are available to update the team schedule when necessary. All members of this team are required to join one of the Planning sub-teams as well.

### **Animation-** Production Sub-Team

The Animation team designs and creates the various 3-D animations used by the team, either as award submissions or as training and marketing tools. This team also sends a representative to Team Council meetings in order to communicate their goals, needs, and progress. All members of this team are required to join one of the Planning sub-teams as well.

### **Documentation**

Each sub-team is expected to maintain a sub-team notebook in which all documentation for the sub-team is kept. This should include meeting minutes, event planning documentation, project documentation, and other documents the team generates as a part of doing business.

Three times per year each sub-team will submit a report to the team council describing their activities and accomplishments during the previous four months. This report should also include projections for the upcoming four months (plans, expected projects, potential improvements, etc.). From these sub-team reports the Team Council and Chairman's Team will then create an official team report. A template for the reports will be created to simplify this requirement.

Having a documentation system like this in place will greatly assist the Chairman's Team in preparing their submission. This documentation can also be used as the basis for a team newsletter.



Another element of the documentation system will be requiring each sub-team leader to keep an accurate agenda and notes for each meeting, which he or she will then communicate in a verbal report at the next Team Council meeting. These notes will later assist both in compiling his or her sub-team’s next written report and for planning similar events in the future.

It will also be encouraged that each team member prepare a robotics notebook in which he or she records a summary of any meeting or event he or she attends as well as any task he or she is assigned.

**Yearly Calendar:**

Creating and Updating the Team Calendar will be an important responsibility for the Team Council. The Council will create an official team calendar to be posted on the website. A proposed yearly schedule will be created at the start of the new PHRED season and then updated at each team council meeting as planning meetings, production team meetings, full-team meetings, and various events are scheduled.

Each sub-team will have particular times during the year when they are more active as they perform their assigned tasks. An overview of a typical PHRED year is shown below with times of sub-team focus placed on the calendar.

Month	EEI	Safety	Finance	Marketing	Chairman’s
<b>January</b>	Build Season	Build Season	Build Season	Build Season	Build Season
<b>February</b>	Build Season	Build Season	Build Season	Build Season	Build Season
<b>March</b>	Competition	Competition	Competition	Competition	Competition
<b>April</b>			Appreciation		Appreciation
<i>Reports</i>					
<b>May</b>			1 Fundraiser	1 Event	Recruitment
<b>June</b>	Education	Training	<u>Budget</u>	1 Event	Appreciation
<b>July</b>				3 Events	Community Service
<b>August</b>			Fundraising		Community Education
<i>Reports</i>					
<b>September</b>	Education				Recruitment
<b>October</b>			<u>Budget</u>	Image Campaign	Community Service
<b>November</b>	Pre-Season	Pre-Season	Pre-Season	Pre-Season	Pre-Season
<b>December</b>	Inventory	Training			Lego-League
<i>Reports</i>					



**Monthly Calendar**

The following is an example of what a Monthly Calendar might look like. For further examples see App. II.

JULY 2010						
M	T	W	TH	F	S	S
	Sub-team planning meeting		1 Team Council Meeting	2	3	4 Holiday
			Team Captain			
5	6 Team Meeting, Activity	7	8	9	10 Frolic	11 Team Bonding Activity?
Frolic- Marketing Team						
12	13 Team Meeting, Activity	14	15	16	17 DaVinci Days	18
DaVinci Days- EEI						
19	20 Team Meeting, Activity	21	22	23	24	25
Community Service- Chairman's						
26	27 All sub-teams Meeting	28 BC Fair?	29 BC Fair?	30 BC Fair?	31 BC Fair?	
BC Fair- Marketing						



## Tuesday Team Meetings

Regular Tuesday meetings will likely begin with a brief report from any active sub-team, informing the team of upcoming activities or requesting volunteers. The mentors might also need to speak to the full team. After that period (perhaps 5-20 minutes), the team would all participate in whatever activity was scheduled. This might be a learning activity planned by the mentors and sub-teams or a preparation session for an upcoming activity requiring the full-team. One Tuesday meeting a month will be reserved for *sub-team meetings only* to make sure each sub-team has at least one dedicated meeting time.



## Implementation Process

- Planning Committee made up of mentor and student volunteers creates a proposed organizational structure.
- Planning Committee presents this structure to the PHRED Board and revises it with their input. Mentors volunteer to lead the various Planning sub-teams.
- Planning Committee presents the revised organizational structure to the team and team members are assigned to their Planning sub-teams.
- Throughout the next PHRED season, the planning committee and mentors work with the Planning sub-teams, teaching the students about their new duties and guiding them through the various planning processes. If necessary, revisions to the structure may occur.
- When the Team Council, mentors, and students agree that the new Organizational System is capable of sustaining itself, the Planning Committee is disbanded.

Assigning members to Planning Sub-Teams will be conducted much like sub-team assignments are made during the build season. Student's will indicate their 1<sup>st</sup>, 2<sup>nd</sup>, and 3<sup>rd</sup> choices for assignment and the mentors will compile the data and make the assignments, accommodating the choices as best as possible. Just as during build season, the mentors may balance the assignments taking into account the best fit for skills and personalities. Throughout the year, if students or sub-teams are unhappy with their current membership, mentors will provide as much support and flexibility as necessary.

Assignments will continue for one year. At the start of the next year, those members wishing to change sub-teams may submit their names into the assignment process with the new member pool. If for some reason, not enough slots are open for teams to be balanced, mentors might ask more students to change sub-teams. Students joining at the end of the school year will have the opportunity to intern with various sub-teams over the summer and go through the process at the beginning of the next school year. Students wishing to join mid-year will work individually with the mentors to find where they fit best into the team.

