

The RINOS Team Development Manual for Rookies

FIRST RINOS Program

2006



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Introduction

What is RINOS?

In 2003 FIRST teams in the NJ Regional area began FIRST RINOS. **R**ookies **I**n **N**eed **O**f **S**upport is designed to recruit and develop new FIRST FRC teams by pairing the new players with experienced mentors from local FIRST teams.

The program was originally the concept of students from local teams who developed the techniques outlined in this manual. The implementation of these techniques have become common practice in our region and have resulted in the development of numerous new teams in the region's "50x05" and "60x06" campaigns.



Why do we wish to develop new teams?

There are few participants in FIRST robotics that do not derive benefit from their experiences with the FRC. It is a fair statement to say that we all see FIRST as a promise for the future and a way to give students a pathway to success.

To that end we must realize that only 1/6th of all the school districts in our region participate in the FRC program and that there is room for many more to join us. Given FIRST's mission "to change the culture", the RINOS program is directed to do just that.

As a rookie where do we fit in?

Every team in FIRST was a rookie at one time. And every team brings their own contributions to the FIRST community. The mix of various teams of a diverse set of backgrounds and abilities is what gives the competition the local flavor and fun that keeps us all coming back. We the veteran teams welcome all newcomers to join us in the fun of FIRST robotics and we challenge you to reach your highest potential.



FIRST's primary goal is inspiration. We wish to inspire students to follow the career paths of science and technology to become the innovators of our futures. This is not an Instructional program. It is not engineer training, although a great deal of that will take place. Our hope is that once students see the fun and potential of engineering they will willingly go forth and learn what they need to pursue those futures.

Plan to have your life changed. Plan to develop a new perspective on your future. Plan to make friends and accomplish great things. And plan to have the toughest fun you will ever have.

RINOS New Team Development

Basics of the RINOS program-

The RINOS program could be called the FIRST Big Brothers program. There are over a thousand veteran teams around the world who have a tremendous pool of experience to offer new teams joining the FIRST family. RINOS links the new rookie with an experienced team from their area and together they traverse the challenges and pitfalls of the first season. In the future the recent rookie will become the mentor and the growth continues.



RINOS Team mentor teams will assign experienced team personnel to guide the new rookie team through the various team activities of the first season. They will help with technical ideas for construction of the robot. They will explain the regulations of the competition and the

procedures for applying for the various awards. They will direct the team to fund raising opportunities and ideas.

RINOS Mentors share equipment, include their protégés in interteam activities and generally treat the rookies as if they were their own home team.

The sections below will explain some of the ideas we have collected for this program. Of course any questions are readily answered.

Rookie Team's first year calendar-

When you first were told about the competition you no doubt were informed about the six week build period where we all work feverishly to design and construct the robot. In this section we break down those six weeks into a set

of tasks and we encourage you to assign a team member to be a time keeper to assure you get the task completed. There is no such thing as turning in a late robot.

You probably registered to be a FIRST team in the fall period between October and December. When you register and are accepted you are assigned a permanent team number that will be your team's forever. Everything in FIRST makes reference to your team number so be sure you learn it.

The competition season actually begins on the first weekend of January. Every team in the world will be observing a telecast where the rules for the new season's game are revealed. The game changes annually and it is a closely kept secret until the Saturday of game release.

From that day forward we all have 6 weeks to brainstorm, design, build, debug and ship a robot. It is a daily commitment. It will engulf weekends and long hours at times.

Within a day or so of the Presidents Day holiday in February we all ship our new machines to warehouses in the vicinity of our initial competition events. The robots are out of hands until we see them again at the days of competition and additional work on the machines is largely restricted to those competition days.

The competition events occur all over the country and world from the first week of March into the first weeks of April. Often up to 8 events are occurring simultaneously across the globe.

The season concludes with the National Championships at the end of April. This event is like the Olympics of robotics and draws teams from all over the world together to compete.

Usually the timing of the build season is a great concern to rookie teams. Therefore below we have a timetable breaking down the six week period into weekly goals that should add up to a successful machine.



There is never enough time to get everything finished. Things will break. Parts will be backordered. Challenges will arise.

That's the fun of it!!



Breakdown of the 6-Week Build Period

Day	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6
1	Brainstorming	Field Construction	Parts fabrication	Manipulation Systems	Assembly and Debug	Build Crate
2	Determine strategy for play	Field Construction Parts fabrication	Parts fabrication Chassis Assembly	Practice Driving Manipulation Systems	Assembly and Debug	Practice with Robot-Programming
3	And General Design	Assemble and Check Controller	Parts fabrication Chassis Assembly	Practice Driving Manipulation Systems	Assembly and Debug	Practice with Robot Programming
4	Begin drawing out design	Parts fabrication	Assemble Control Board Drive Train	Practice Driving Manipulation Systems Final Wiring	Assembly and Debug	Practice with Robot Programming
5	Begin ordering parts	Parts fabrication	Assemble Control Board Drive Train	Manipulation Systems Final Wiring	Assembly and Debug	Practice with Robot Programming
wknd	Game piece building	Parts fabrication	Drive Train	Final Wiring	Prep to Ship	Practice with Robot
<i>Week goal</i>	<i>Consensus on a design</i>	<i>Parts ordered and being built</i>	<i>Drive Train Assembled</i>	<i>Major Systems Assembled</i>	<i>Robot Completed</i>	<i>Pack up and Ship</i>

Note that the color coding of the boxes more or less divides the tasks into subgroups of the team. The light yellow is design oriented and CAD draftsmen are helpful here. White boxes are construction and parts fabrication where metal working skills are called for. Orange is primarily electrical work. Aqua usually calls for carpentry skills. Purple is pure programming and driver training.

Scrimmages- End of Build Season-

In many areas the last weekend of the build season is a time for pre-shipping scrimmages. These events are great opportunities to allow the new teams to meet the local competition and to have a little fun at a time when the pressure is at its highest point. It also is an opportunity to get help from the older teams and fix problems before the robot gets put into the crate for shipping.

It may seem a tough feat to attend a scrimmage on the last week of the season but it is usually well worth it.



Rookie Team Organization

More than building any robot it is important to build a good team. Every member needs to have a stake in the team's success and pride in the team's accomplishments. Developing the team is the biggest challenge of all FIRST entrants. But when a good team does develop they are unstoppable on the field and off.

Jobs required and desired-

In Appendix A you will find a job description manual and organizational charts for team 25 as used in the early 2000's. This is offered as a model or suggestion, not a hard and fast structure your team needs to adhere to. No two teams are different because the dynamics of the people and the skills they bring to the table are all different.

Use the model presented to build upon and develop your own model based on the skills of your people. If you see needs in some areas then you can work to develop to fill them.

Objectives for building a good team-

The best teams in FIRST work as a unit. Everybody in the group has a job and everybody in the group supports the whole.



We recognize that everyone who joins our team has some talent or ability that they can use to improve the team. Team leadership directs the new members into these positions where they can experience success and gain respect from their fellow teammates. As their comfort grows the tasks assigned slowly change and the member can develop into new areas.

Team members also have responsibilities for membership. These are outlined in our team handbook (Appendix

B). To be a member of a team is both a privilege and a pleasure.

Always there is the provision that any job taken on is expected to be completed to the best of their ability and that if help is needed it is appropriate to ask for it.

FIRST teams are not just about building robots. Everyone can find a role to play.

Adults should work with the students and be guides on how to perform tasks. Their experience is to be respected as is their direction. As students gain experience they acquire adult role responsibility. Eventually the adults can be more of a resource than management personnel.

Everybody on a team is the most proud when the team works to its full potential and everybody "clicks".

FIRST teams all have unique identities. While some of this is pure schtick, the memorable name of a team is often associated with their appearance and accomplishments. Have fun developing a persona for your team.

Development of a team uniform, team colors, cheers and logos are all part of the non-robot functions of a FIRST team. Every team has a banner. Every team has a name.

Every team has FUN!



Who does what?

There is no rule about the roles of the student and the adults on a FIRST team. Both should be parts of the same team and contribute to the best of their ability. However there is an annual argument amongst the teams about who should or shouldn't be allowed to build the robot and how the adults should be used on a team.

Some teams will have robots built completely by adult engineers and only operated by students. Others will have no adult members at all and will be completely student built and driven.

Both teams are completely within the rules of FIRST. And both **inspire** kids to pursue engineering in their own way.

At some point every team will make a decision as to where the line between adult and student interaction will be. This is an internal team decision and is based on the resources the team has to work with and the goals they set.

The only words of wisdom we offer here is that the team should benefit the students and that they should have fun. Other agenda such as negative corporate rivalry or a "win at all costs" attitude is discouraged.

RINOS Services offered-

Having a RINOS team for a mentor has distinct advantages. Your mentor team has already faced many of the challenges you will experience and they have accumulated tools to overcome them. Use them as a resource to improve your team and prepare

Equipment loan- While the equipment available will vary the loaning of tools and help with construction are highlights



of the RINOS program. The rookie must realize that the mentor is graciously donating time and resources at a time when they too are under the gun for getting their robot built.

But many teams are willing to help and it is wise to listen to them.

One of the successes we have seen locally is the loaning of old robots to pre-rookies to train them in robot use and maintenance. The rookies use the robots to play in off season games and soon get into the rhythm of how a FIRST team competes.

Also of interest is the loaning of support equipment for the team such as button machines, scouting programs or spirit equipment. Our team has a collection of car wash materials in baskets we have loaned out to our rookie teams for their fund raisers. Our button machine spends more time away than it does in our shop.



Co-travel – One of the fun arts of FIRST robotics is competing in other parts of the country. A RINOS rookie team can benefit by coordinating these competitions with their mentor team and traveling together.

Coordinated travel reduces the cost of buses and similar resources. It is more fun to travel with friends than be a stranger in a distant group. Both teams benefit by having cheering support and both teams develop a stronger bond to each other.

Sponsorship help- It is often desirable to have experienced leaders accompany a rookie when approaching a company for sponsorship help. The questions asked and the benefits discussed are usually more easily dealt with by a veteran than a new team.

Many times a veteran team will extend the hand of sponsorship from their sponsors to their rookie charges. Some companies look on teams mentoring others as an improvement in community relations and a supportable program.

Team training- Some aspects of the FIRST competition will require specialized training. Specifically robot programming and animation come to mind as topics that require training in advance.

It benefits all to have veteran teams coordinate group training programs with other teams in the area. The expense of training is therefore



diluted amongst the teams and all benefit.

A wise veteran team would invest in training modules of software and run annual training programs for their own members as well as their rookies.

Milestones of rookie team progress

In the RINOS Mentor Manual we offer a checklist of signs that indicate a rookie team is making progress. We repeat that list here for use by the rookie team. Use this checklist to gauge where your team is in your development and to set new directions to work into.

Team Achievement	Check
Team held a first meeting	
Team acquired a mentor teacher and/or engineer	
Team receives recognition and permission from school administration	
Team attends a FIRST competition event	
Team decides to participate in FIRST	
Team finds a sponsorship funding source	
Team develops a calendar for the next season	
Team develops a name and identity	
Team registers for FIRST competition	
Team develops team uniform	
Team develops an organizational chart	
Team attends a kickoff rally at start of build season	
Team show evidence of actively reading the FIRST manual	
Team actively engages in building a robot	
Team builds crate and establishes shipping	
Team completes robot on time and within rules of the manual	
Team engages in dialogue with FIRST organization through TIMS	
Team writes a Chairman's Award type entry	
Team competes in a Regional FIRST Competition event	
Team demonstrates pride of accomplishment	

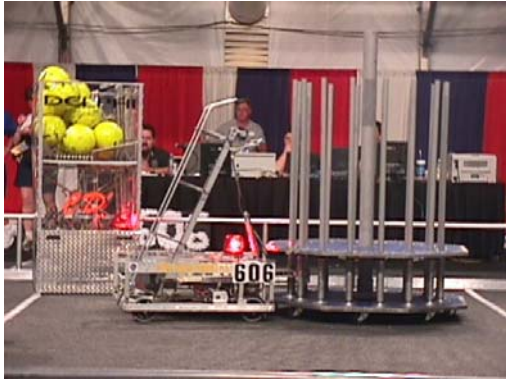
What is the Regional competition like?

FIRST tournaments are three day events that run Thursday through Saturday. The agenda for each event will appear on the FIRST website www.usfirst.org.

Day 1 is for Practice rounds and Inspections. Your team will be scheduled several match simulation practice rounds throughout the day. You will need to have the machine inspected and registered by the engineers on staff before you will be allowed to play. They will check size and weight as well as compliance to the building rules spelled out in the Team Manual

Day 2 includes seeding rounds to set ranking in the field of competitors. A schedule of rounds will be issued in the morning and you will be randomly paired with other teams at the event. You play with your partners to the best of your ability with the goal of getting the most points for the day. Matches are played in 2 Minute Rounds.

Robots function part of the round autonomously and part of the round under human radio control.



At the end of the seeding rounds Saturday morning the teams will be ranked based on wins and losses and the top eight are guaranteed to play for the tournament championship.

At the end of day two is the first of two awards ceremonies where the judges who have been observing and interviewing the teams will recognize their choices to the group.

Day 3 finishes the seeding rounds and holds the Elimination Round Finals. The seeding rounds will end before noon. At noon the top eight seeds will be a part of a ceremony where they will select alliance partners from the remaining teams to form permanent elimination team alliances.

After lunch the elimination rounds begin in a best 2 of 3 rounds basis. The eight initial alliances then are reduced to four, then two and then the final championship winner.

The day concludes with closing ceremonies and awards. Then we all pack up and go home.

Remember-robots work in teams. A red team tries to out-compete a blue team. They are randomly picked in the seeding rounds. Top seeds pick permanent partners for the elimination rounds

What should we bring?-

Competitors will be supplied with a pit area of 10 x10 ft. You will be given a table and an electrical outlet.

Plan to bring the following

1. power strips- you need to have batteries charging
2. battery chargers
3. tools
4. spare part materials
5. Robot cart- some way to roll the robot from the pits to the field edge.
6. safety equipment- first aid kit, glasses for all in pits



Many teams look on pit design as a challenge in itself and will develop elaborate pit setups. Generally the organizers of events allow simple power tools to be used but frown on grinders, welders or large standing cutting or drilling tools being used in the pits. There will be a machine shop available at the

competition for repairs that might arise. Trained service employees will do the work for you to your specifications.

Cheering and Giveaways-

A team's presence in the stands is usually a function of their concerted cheering and the personality the team exhibits. Teams will be recognized for their efforts. Many teams have developed a team persona that is recognized nationally and rookies should develop their own reputations.

Many teams offer giveaways to visitors from their pits or place in the stands. Button exchange is the most common. Some teams swap shirts or similar souvenirs. Generally 1000 buttons is more than sufficient for a season.



Scouting- The secret to a truly competition team is the success of their scouting program. Scouting is handicapping the competitors and seeing which might be the best choices for partners in the elimination rounds. It may be the case that your team doesn't make the top eight seeds to be choosers for the elimination series but scouting is a great way to train new members on how robots are put together. Only the scouts get to see all the robots in action and in the pits. They see what works and what doesn't. The insight is invaluable to the drivers in the later rounds as well as in designing the next season's robot.



The techniques for scouting vary tremendously. Photo databases are common. Many teams use worksheets to organize data. Collaborated scouting efforts between teams are also common.

Plan on having personnel designated as scouts at competitions and listen to them.

Safety- Of course always paramount at competitions is safety. Pit areas should be neat and uncluttered. A first aid kit should be handy and well stocked. Hopefully it will never be needed.

Personal safety gear such as safety glasses and hard shoes are required for anybody in the pits. These are the responsibility of the team and will not be available at the regional.

Gracious Professionalism-

Robots are not allowed to deliberately damage others. All games are played with the highest levels of sportsmanship. **Gracious Professionalism** is the code of conduct for all FIRST events. It means that everyone behaves as if their grandmother was watching. Teams compete for fun. We are all friends in FIRST

Unlike just about anywhere in the world- FIRST teams help each other with just about everything.

Fund Raising

Raising the thousands of dollars required for the FIRST registration fee and the materials needed to build a decent robot is the biggest challenge most rookies face. In this section we offer some ideas for fund raising and ways RINOS mentors can help.

Objectives of fund raising programs –

Obviously the main objective of any fund raising program is to make money. But there are fund raising ideas that make a lot of money and some that make a lot of hassles and no money.

Our team's criteria for evaluating a fund raising idea are as follows. First, the idea must have little or no capital outlay to get started. If it involves sales, they must be prepaid or available on consignment. The team will not accept pre-bought inventory.

Second, the profit for the activity needs to be worth the effort. A 20% profit on sales is simply too low to warrant the aggravation unless we are selling a big-ticket item with a huge value and profit for a single sale. Therefore we look for items with profits of 50% or more.

Third, the activity has to be achievable by students. We want the students to take the initiative to earn their way for the team. That way they have a stake in the outcome of the team for the season.

It is desirable to have adult leaders work with students on a fund raising committee. This group should set a calendar of fund raising events with goals and quotas. And the group should report to the team coach, not be run by him or her. Building the machine and making the team work is job enough for the coaching staff. Fund raising should be a second supporting committee.

Ideas for fund raisers-

Just about any activity can be made into a fund raiser. We divide them into three groups- sales, services and shows.

Sales of items are universal in school clubs and well known to most teachers. The school answer to fund raising usually involves candy by the case lot, catalogue sales or some items that are bought at 50% of the sale cost and sold for profit.



Services are usually one day events where the team works for pay or donations. Car washes and leaf raking days are good examples. Sometimes stores will enlist teams to wrap gifts for the holidays, bag groceries or they will simply allow a demonstration table where donations can be taken. Many of the larger stores like Wal-Mart and supermarkets will match the proceeds collected. Chain restaurants often offer teams a special team night where the rookies would gather customers to the restaurant on a particular night and in return would be rewarded with a portion of the profits from the sales.



Shows are a different direction that can be focused on. The robot team would host an event or show that would have a paid admission. Dances and concerts are very common examples. LAN parties and school lock in games nights are growing more popular.

A list of more unusual fund raisers is below. Just about anything can be used as a fund raiser.

Ideas for Fundraisers

Fundraiser	Description
Local coupon books	company offer these for team sales- coupons offer discounts at local businesses
Team Program Book	Ads are sold on team web page and annual "yearbook"
Shirt Space	As above
Adopt a Tool	Buyers pay for tools- get name on adoption list
50 % matching	Local business asked to match fund raising efforts at some percentage
Inter Team Bowling or Gaming Tournament	Profit comes from food vending and minor from entry fee
Dinners	Team prepares and serves a meal to the public for pay
"performance a thons"	Walk a mile, rock a chair, do something- for pledges by the performance
Painting days	Paint pumpkins, faces, posters- anything for a small fee

Road Clean Up	Town commissions look for groups to maintain highways and usually offer a monetary reward
Computer services	Repair computers cheap for people in town
Challenge a different school team	Set up a competition tournament with an entry fee and make a profit
Fair Games	Run a booth at the local community fair- better if the game has a robot involved
Speak to business people	Approach local companies for small item support, approach guilds and unions for their support, But actually speak to somebody
Apply for grants	The NASA grants are the most well known but there are grants offered to schools from other agencies. To find them requires effort and to apply takes time and work

Fund raising is a challenge that the new team should begin as early as possible in the summer or fall to prepare for the October registration date for the competition.

The NASA Grant Program-

NASA has been the major supporter of FIRST for the past 5 years and continues to offer teams a potential source of short term sponsorship. These grants are designed to be short term support for teams in their first year, giving them time to develop a business plan and stable local support base.



The program from 2006 is tripartite and outlined below.

- Three classes of NASA sponsorship are available to FIRST teams. These are described below. Teams may only submit one application for a NASA sponsorship, and must select which of the three types of sponsorships to request.
- **Regional “Challenge Grants”:** In conjunction with the sponsorship of regional competition events, NASA is making Regional “Challenge

Grants” available to teams that participate in these events. The grants provide \$6,000 funding to cover the registration costs for that event. All funding will be sent directly to FIRST, and FIRST will credit the accounts of teams selected to receive a NASA sponsorship. The Regional Challenge Grants are primarily intended for new rookie teams that are entering the FIRST program for the first time. Rookie teams that successfully participate in the program may apply for a second year of sponsorship. Second-year funding is available only to those teams that received a “rookie year grant” for that event during the prior competition year. During the first year of a new regional competition event, a series of “veteran team” grants will also be awarded. These grants are for one year only, and are awarded to veteran teams that are electing to attend the new event. By

involving veteran FIRST teams in the new events, it is expected that the overall level of the competition, the quality of the experience, the transfer of knowledge and experience to the rookie teams, and the demonstration of values associated with the FIRST program will be increased. For the 2006 competition season, Regional Challenge Grants will be available for the following events:

- Chesapeake Regional Competition: 10 second-year grants are available
 - Peachtree Regional Competition: 10 second-year grants are available
 - Denver Regional Competition: 10 second-year grants are available
 - Las Vegas Regional Competition: 10 rookie grants and 10 second-year grants are available
 - Boilermaker Regional Competition: 10 rookie grants and 10 second-year grants are available
 - Milwaukee Regional Competition: 10 rookie grants and 10 veteran grants are available
- **University Space Grant Sponsorship:** NASA University Space Grant Sponsorships are available to **teams from Idaho, Louisiana, Montana, Arizona, and Washington, DC** through the NASA University Space Grant Program. Teams from these four states and the District of Columbia are encouraged to apply for NASA University Space Grant funding which will provide \$10,000 per year for one to three years. These funds may be used for event registrations, materials, travel expenses, and other costs associated with implementing the team. Funding for the sponsorships will be distributed through the corresponding University Space Grant Consortium for the selected state. The University Space Grant Sponsorships are primarily intended for new rookie teams that are entering the FIRST program for the first time. Rookie teams that successfully participate in the program may apply for a second and third year of sponsorship.
 - **Program Growth Grants:** This year a third type of grant is being offered to rookie teams from across the country. Up to forty (40) “Growth Grants” are being offered to teams participating in the FIRST competition for the first time. These sponsorships are not tied to any particular regional competition or limited to teams from any specific state. The grants will provide \$6,000 funding to cover the registration costs for the team to attend one regional competition event. All funding will be sent directly to FIRST, and FIRST will credit the accounts of teams selected to receive a NASA grant. Depending upon the availability of Congressionally-appropriated funding, rookie teams that successfully participate in the program may apply for a second year of sponsorship for 2007.

To find out more about NASA grants check their website at http://robots.larc.nasa.gov/sponsorship_description.html .

Local Grants- Often local companies offer funding opportunities for community groups. A good source of support is the companies of the parents of the students on the team. Often companies will match the volunteer time put in by their employees with funds to support the non-profit group. Likewise community oriented companies will often fund robotics teams much the same way they sponsor Little League teams.

FIRST does not specify how a team funds itself. You can have one sponsor or a hundred. It would be ideal to find a sponsor that not only can supply funds but also offers technical engineering mentorship. But that is not the absolute necessity.

Just like building a robot, FIRST teams tackle funding as a challenge to overcome. It is often a good idea to devote much of the off season to this goal.

How can RINOS help?

If they are willing to share, a RINOS mentor can be a valuable source of funding connections and experience for the rookie. However there is a reluctance of some veterans to part with funding lines they developed over many years for fear of losing their future capital.

The RINOS mentor might best be one to offer letters of solicitation for the rookie to work from and to be present when the rookie leaders approach new corporate contacts to pitch their case. Much of the time the sponsors a rookie develops will be from the companies of the parents on the team.

It is also important for the mentor team to help the rookie develop a role for the sponsor in the running of the team. Some sponsors will want no direct involvement with the building of the robot. Others will want to be deeply involved. It may fall on the RINOS mentor to be the voice of authority educating both sides of the pair in techniques used with FIRST teams.



Off season competitions

In NJ we have a saying that the end of the FIRST Nationals is just the signal to begin the off season competitions. Due to the hard work of a collection of dedicated FIRST teams and the generosity of NASA and FIRST in loaning us playing fields, we are fortunate to have 6-10 competitions available to play in between the months of May and December.

Why attend off-season competitions?

Our team attends as many off season competitions as possible and we also host our own event every fall. As a veteran FIRST team we feel it a pleasant obligation to attend the events of other teams and show support for their programs. By simply being there we show the public that robotics is fun and worthwhile. And we like to think that we add something to the excitement of the games where we play.

For our team, the benefits are multifold. The off season events are where we get to develop social relationships with other teams in the region and where we have a less stressful atmosphere to train new members.

It is also a place where old robots can be improved upon and where the team can try new ideas on the machines.

Generally the off season events are run on an honor system and there is far less stress on winning and losing and more emphasis on having fun.

Having fun, making friends and supporting the FIRST community=

There IS NO better way to get new teams and outsiders interested in FIRST robotics than to have them get involved with an off season competition. For many, this is simply as a guest seeing the games for the first time. For the rookie this is a chance to use their robot again and learn better how to interact with other teams in the community. Let's face it, that initial competition season is a blur to many rookies. In the off season we all play with a lot less fervor and a lot more fun. These games are for the sport of it and it is a chance to "redo" the things that might have gone wrong in the regular season.



For our home event we will sometimes recruit potential teams to work with us on the field as a reset crew or similar involved worker. Generally we do not put much demand on these new people but they end up right in the center of the action and become experts on the game by the time they go home.



Of course the best technique we have developed is the PreRookie Team concept. These are teams of students from schools that have been shown the FIRST concept through a school visitation and who seem interested in the FIRST experience. To date, any school that we have developed as a Pre-Rookie has become a FIRST team and about 70% of them receive FIRST awards in their rookie or second year.

In NJ the organizing teams for the local off season events recognize the value of the pre-rookie program and offer free or greatly reduced registration for the off season events. For our event, Brunswick Eruption, the pre-rookies play for free and the mentor teams pay half price for registration.

The off season calendar- sequence-

The off season games generally begin in May and continue monthly through November. By December most of the FIRST fields have been recalled for refitting for the new game and the teams are more concerned with registering and paying for the new season that approaches.

A posting board for the off season games can be found on the FIRST home page at http://www.usfirst.org/robotics/res_art4.htm . Likewise discussion and promotion of events can be seen on the Chief Delphi boards at <http://www.chiefdelphi.com/forums/forumdisplay.php?f=20> .

Pre-rookie teams-

A cornerstone of the RINOS program is the Pre-Rookie Program. Simply stated, prospective new teams are mentored by veteran teams by assigning them experienced older student mentors and guiding them through their first season. This relationship can develop at any point in the year but generally the recruit season is during the period of the off season events and before registration for FIRST in the fall.

The RINOS pre-rookie enters the actual competition with several months of robot experience, a sense of team pride and a lot of fun memories.

Loaner robots-

One of the RINOS techniques is to lend Pre-rookies robots to play with at the off season events. These machines come with a student drive team mentor and often the pre-rookie and veteran team with refit the robot to play the game of the season.

The training achieved by having the two teams work on the common project is invaluable for both.

Generally the attendance of Pre-rookies at the off season events is supported by the host teams and is free or with reduced registration. Usually inconsistencies in the rules with the cobbled together robots are also overlooked in pre-rookie cases. Of course gracious professionalism always prevails at FIRST events.

RINOS Fellowship-

It is the hope of all of us in the RINOS program that all the new teams joining the FIRST community will become a part of the fellowship of the games that is RINOS. We hope to see all the RINOS teams in future years working as a family to help each other and bring new schools into the mix.

After all, all our schools were approached by somebody who thought they saw a potential and benefit for you. It is all of our responsibilities to pass the opportunity along.





Resources for RINOS mentors and new rookie teams

We hope we have been helpful and encouraging to all of our fellow teams. To aid your efforts, we have assembled a list of internet resources below for your use. Feel free to contact our team at www.raiderrobotix.org at any time for any reason.

FIRST team resources page- www.usfirst.org/robotics/resources.htm
Link List-

Rookie Teams:

The FIRST Website - <http://www.usfirst.org/>

Check out Team 365s First Year Information database:
<http://www.moe365.org/moementum.php/>

Team 341's Team in A Box- a CD guide to building a team- free to new teams
<http://www.team341.com/tiab.html>

First Interactive Rural Support- resources for the team without urban advantages-
<http://www.cybersonics.org/cybersonics/rural/index.htm>

If you run into a problem and cannot find enough resources, you can post at the **ChiefDelphi** forums for help. It is one of the largest online networks -
<http://www.chiefdelphi.com/>

The **FIRSTwiki** is also a growing database of information about first -
<http://www.firstwiki.org/>

Helpful information regarding FIRST rules and updates -
<http://bobfrank.com/?module=FIRSTsearch>

At Tigerbolt Chat you can chat with other FIRSTers about various issues -
<http://www.rit.edu/~us1stwww/chat.html/>

The University of Waterloo contains very useful files that will aid you in running your team -
<http://firstrobotics.uwaterloo.ca/resources.php>

Mechanical and Drafting:

FIRST CAD Library contains useful files to aid you in drafting your robot - <http://www.firstcadlibrary.com/>

MSC Industrial Supply Co. - <http://www1.mscdirect.com/cgi/nnsrhm>

Small Parts Inc. - <http://www.smallparts.com/>

Help with Pneumatics at **PneumaticsFIRST** - <http://www.pneumaticsfirst.org/>

AndyMark provides standard supplies for FIRST teams like gearboxes & wheels - <http://www.andymark.biz/>

McMasterCarr is another extensive resource to buy things related to robotics - <http://www.mcmaster.com>

FIRST Mechanisms Library - <http://firstrobotics.uwaterloo.ca/resources.php>

Another place to buy FIRST related stuff - <http://www.bostongear.com/>

Electrical and Wiring:

Analog Devices - <http://www.analog.com/>

Mouser Electronics - <http://www.mouser.com/>

Digkey - <http://www.digikey.com/>

NewarkInOne - <http://www.newark.com/>

Programming:

InnovationFIRST is the official website where you will find all needed resources to program your FIRST robot and more - <http://www.ifirobotics.com/>

Microchip - FIRST robot controllers come from this company - <http://www.microchip.com/>

Rob Bayer's website contains some useful software - <http://www.robbayer.com/>

Kevin Watson provides extremely useful code for advanced programming - <http://www.kevin.org/frc>

FIRST Robotics Code Repository - <http://frcoder.sourceforge.net/>

Strategy and Scouting:

FIRST ROBOTICS.NET contains pictures of most teams old to new -
<http://www.firstrobotics.net/>

SOAP 108.com contains videos and very useful scouting data. Along with great entertainment, it is also a great place to learn about FIRST Robotics games -
<http://www.soap108.com/>

East Coast Drivers Union Forums. They are a group that formed in the East Coast to improvise strategy and emphasize on Gracious Professionalism on the field -
<http://www.raiderrobotix.org/ecduforum/>

FIRST Scouting Network - <http://www.firstscouting.org/>

Web design and Animation:

3dlinks contains extremely useful examples and resources for animations -
<http://www.3dlinks.com/>

OpenFIRST is a very useful place to get help on web-design and is dedicated to aiding FIRST teams if they should need - <http://openfirst.sourceforge.net/>

Regional FIRST websites:

IndianaFIRST - <http://www.indianafirst.org/>

FIRST Rochester - <http://www.firstrochester.org/>

New York FIRST - <http://nycfirst.poly.edu/>

Western Regional Robotics Forum - <http://www.wrrf.org/Main/index.php>

South California Regional Robotics Forum - <http://www.scrf.org/>

FIRST Canadian Regional - <http://www.firstcanadianregional.org>

Florida FIRST - <http://www.floridafirstrobotics.com/>

Communities formed by FIRST teams and students to aid/unite other teams

Team 103s FIRST Interactive Rural Support -
<http://www.cybersonics.org/cybersonics/rural/index.htm>

FIRST College Connect - <http://www.firstcollegeconnect.com/>

Robot Chicks Union - <http://www.robotchicksunion.org>

Appendix A- Team Job Description Manual

Job Description Manual- Raider Robotix Varsity Team

This manual describes the responsibilities of the various jobs for the members of the Raider Robotix 2002 team. These responsibilities are to be adhered to and treated with respect. For the team to function and succeed it is vital that each position do their job properly and reliably and that open communication exists.

The Jobs Include:

- 1.** Captain/ Floor Coach 1
- 2.** Floor Coach 2
- 3.** Floor Coach 3
- 4.** Robot Driver- Base
- 5.** Robot Driver- Manipulator
- 6.** Human Player

- 7.** Team Spokesperson 1- Liaison to Cokeley
- 8.** Team Spokesperson 2- Liaison to Cokeley
- 9.** Video Camera Person
- 10.** Stills Photographer
- 11.** Schedules/Tote Boards/Appointments and Scores
- 12.** Goodwill Crew Boss (Mr. Volcano)
- 13.** Goodwill Crew 1
- 14.** Goodwill Crew 2

- 15.** Database Manager/ Supervisor of Computers
- 16.** Data Crew 1
- 17.** Data Crew 2
- 18.** Data Crew 3
- 19.** Data Crew 4

- 20.** Electronics Assistant to Mike L.
- 21.** Tools Assistant 1
- 22.** Tools Assistant 2
- 23.** Batteries, Cords and Floor Tool Boxes

Floor Team-

overall responsibility: operate the robot in the arena

1. Captain/ Floor Coach

responsibility- leads the operating team in the arena. Listens to opinions and makes final decisions regarding strategy and our performance in and during the game. Sets the goal for each round of the game. Must be able to operate under pressure.

preparation- Must be especially versed in ALL of the rules of the game and in the operating abilities of our robot and the operators. Must be well versed in the abilities of the two manipulators and the human player. Must know all of the rules for both the seeding and finals rounds of competition- especially scoring.

Must develop a working relationship with the floor team.

Operations-

1. Attends all robot practice driving sessions
2. Obtains a copy of the rule book and memorizes it
3. In competition - stands behind the operators and observes all action, takes suggestions from floor coaches and operators and makes quick decisions
4. Coordinates with Team Spokespeople and Scheduler to keep team informed about their schedules.
5. Takes leadership role as captain when partnered with other teams. This includes evaluating other robot capabilities and making the final decisions about our strategy on the field.
6. Always promotes good sportsmanship on and off the field

2. Floor Coach 2-

responsibility- Watches the game on the floor and directs the driver of the robot base.

Preparation- Must be especially versed in ALL of the rules of the game and in the operating abilities of our robot and the operators. Must be well versed in the abilities of the two manipulators and the human player. Must know all of the rules for both the seeding and finals rounds of competition- especially scoring.

Must develop a working relationship with the floor team.

Operations-

1. Attends all robot practice driving sessions
2. Obtains a copy of the rule book and memorizes it
3. In competition - stands behind the base driver and observes all action, makes suggestions to the driver and Captain
4. Coordinates with Captain to insure driver knows schedule
5. Always promotes good sportsmanship on and off the field

3. Floor Coach 3

responsibility- Watches the game on the floor and directs the driver of the manipulation system.

Preparation- Must be especially versed in ALL of the rules of the game and in the operating abilities of our robot and the operators. Must be well versed in the abilities of the two drivers and the human player. Must know all of the rules for both the seeding and finals rounds of competition- especially scoring.

Must develop a working relationship with the floor team.

Operations-

1. Attends all robot practice driving sessions
2. Obtains a copy of the rule book and memorizes it
3. In competition - stands behind the manipulator and observes all action, makes suggestions to the driver and Captain
4. Coordinates with Captain to insure manipulator knows schedule
5. Always promotes good sportsmanship on and off the field

4. Robot Driver- Base

responsibility- Actually drives the robot on the floor with the direction of the floor coaches. Must be able to operate under pressure

Preparation-

Must be especially versed in ALL of the rules of the game and in the operating abilities of our robot and the operators. Must be well versed in the abilities of the two drivers and the human player. Must know all of the rules for both the seeding and finals rounds of competition- especially scoring.

Must develop a working relationship with the floor team.

Must practice driving the robot as much as possible and work with the manipulation driver as a pair.

Operations-

1. Operates the robot base from the floor of the arena
2. Defers to Captain and Floor Coach 1 for decisions regarding strategy.
3. Obtains a copy of the rule book and memorizes it

5. Robot Driver- Manipulator

responsibility- Operates the robot systems devoted to picking up or moving objects. Must be able to operate under pressure.

Preparation-

Must be especially versed in ALL of the rules of the game and in the operating abilities of our robot and the operators. Must be well versed in the abilities of the two drivers and the human player. Must know all of the rules for both the seeding and finals rounds of competition- especially scoring.

Must develop a working relationship with the floor team.

Must practice driving the robot as much as possible and work with the base driver as a pair.

Operations-

1. Operates the robot manipulating systems from the floor of the arena
2. Defers to Captain and Floor Coach 2 for decisions regarding strategy.
3. Obtains a copy of the rule book and memorizes it

6. Human Player

Responsibilities- Manipulates the scoring pieces according to the rules of the game and interacts with the robot as allowed and preferred. This is usually restricted to handing or throwing balls or such to the robot or into the goal.

Preparation-

Must be especially versed in ALL of the rules of the game and in the operating abilities of our robot and the operators. Must be well versed in the abilities of the two drivers. Must know all of the rules for both the seeding and finals rounds of competition- especially scoring.

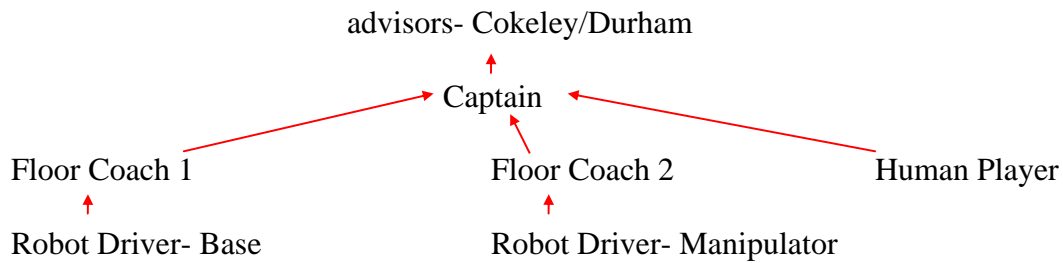
Must develop a working relationship with the floor team.

Must practice working with robot as much as possible and work with the drivers as a team. Will probably require practice with the game pieces in regards to throwing and such.

Operations-

1. Manipulates playing pieces from the floor of the arena
2. Defers to Captain for decisions regarding strategy.
3. Obtains a copy of the rule book and memorizes it

The hierarchy for the floor team is as follows-



Administrative Crew

Overall responsibility- The administrative team deals with all the compliance issues and publicity issues involving the team. They represent the team to the press, the judges and the public in general. They are the spirit of the team and the FIRST competition.

7. Team Spokesperson 1-

8. Team Spokesperson 2-

Responsibilities- Represent the team to both the press and judges in an informed and positive manner. The spokespeople are knowledgeable in all aspects of the team's operations and are prepared to answer questions about the robot and history of the group

Preparation-

1. Develop information sheets and press packets about the team.
2. Coordinate with scheduler and become familiar with events.
3. Take charge of any banners, awards and merchandise and be responsible for posting them at the competitions
4. Learn all of the members of the team and be able to introduce them to the appropriate persons.
5. Prepares for networking with potential sponsors and such. Creates a contact notebook.

Operations-

1. Post banners and awards at the competitions
2. Speaks to press about team in a positive, manner. Distributes information sheets as needed
3. Speak to the judges. Introduce them to appropriate personnel as required- especially when answering questions about robot operations.
4. Collects names and business cards of people interested in helping the team
5. Coordinate with Good Will crew to circulate around competition and talk to other teams and guests.
6. Represents the team when accepting awards and honors.

9. Video Camera Person

Responsibilities- Creates a video record of the activities of the team at the competitions and beyond.

Preparations-

1. Learns the operations of the video equipment
2. Coordinates with scheduler for the times of events to be filmed
3. Assumes responsibility for the care and well being of cameras and tapes made

Operations-

1. Sets up battery charging center in the pits. Work with pit crew.
2. Video tapes all rounds on the field as well as pertinent activities in the pits and ceremonies.
3. Coordinate with Mr. Palazzo about copying the tapes.

10. Still Camera Person

Responsibilities- Creates a photographic record of the activities of the team at the competitions and beyond.

Preparations-

1. Learns the operations of the camera equipment
2. Coordinates with scheduler for the times of events to be filmed
3. Assumes responsibility for the care and well being of cameras and disks/films made

Operations-

1. Sets up battery charging center in the pits. Work with pit crew.
2. Photographs all rounds on the field as well as pertinent activities in the pits and ceremonies.
3. Coordinates with Mr. Cokeley about photography needs.

11. Scheduler

Responsibilities- Maintains a master schedules and scorecard for the team and informs members of where and when they need to be places.

Preparation-

1. Learns the leaders of the various subgroups who need to coordinate
2. Learns the itinerary for each of the competitions

3. Learns the scoring procedures for the competition.
4. Sets up tote board for team advisories.

Operations

1. Coordinates with the competition control desk and develops schedule for team activities. Coordinate with Mr. Cokeley
2. Posts announcement Board in the pits to keep the team informed
3. Informs the individual group leaders of their groups responsibilities and scheduling
4. Coordinates activities with team Spokespeople

12. Goodwill Crew- Boss

13. Goodwill Crew 2

14. Goodwill Crew 3

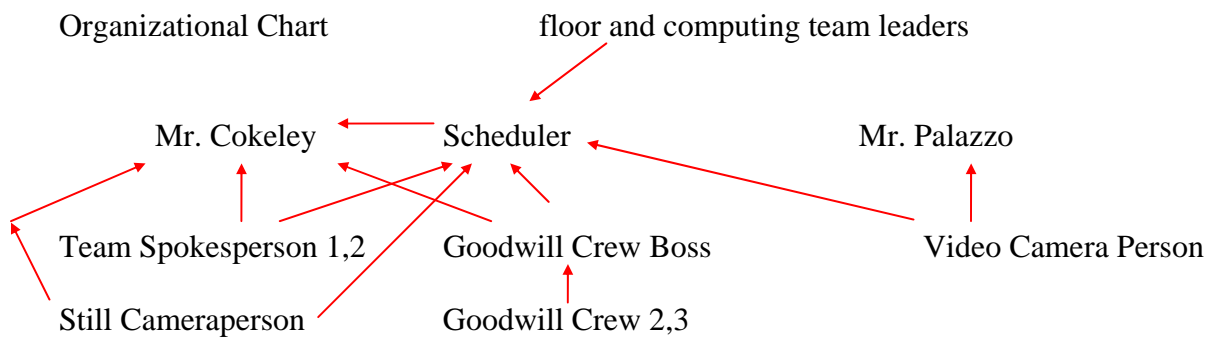
Responsibilities- Spreads cheer and goodwill about the team to other teams and the general public

Preparation-

1. develop Mr. Volcano costume and entourage props
2. take responsibility for the supply of buttons and giveaways
3. coordinate with Team Spokespeople about mingling with the crowd

Operations-

1. Mingle with the other teams and distribute buttons and other materials to the public
2. Be ambassadors of good will to the public
3. Interact with team mascots of other teams in a positive manner.



Computing Crew

Overall Responsibility- Setup and maintain an informational database on the robots of the other teams and maintain the C-stamp programming necessary for the robot.

15. Supervisor of Computers

responsibilities- Develops and maintains computer system for use during the competition

Preparation-

1. Works with Mario Azar to build a computer system for the team.
2. Develops a database form for use by the survey team. Works with Shaun McNulty on this
3. Coordinates robot programming needs with Mike Lubniewski
4. Installs and familiarizes team with the following programs-
Adobe Photoshop, C-Stamp, MS Access
5. Sets up shipping crates for computers and supplies
6. Develops working relationship with teams of data collectors

Operations

1. sets up computer system in the pits
2. coordinates and enters information for database
3. prints out hardcopies of data for any who request it
4. makes available C-stamp programming to robot crew
5. security for computer system
6. generates a master data book binder on all of the teams. Each record should include photo of robot and team e-mail information
7. Coordinate activities of data collection teams (2)
8. generate fact sheets for allies and opponents on a round by round basis.
Distribute to our team and our allies.

16. Data Crew 1

17. Data Crew 2

18. Data Crew 3

19. Data Crew 4

Responsibilities- Collect information on all of the other robots in the competition for creation of a central data base

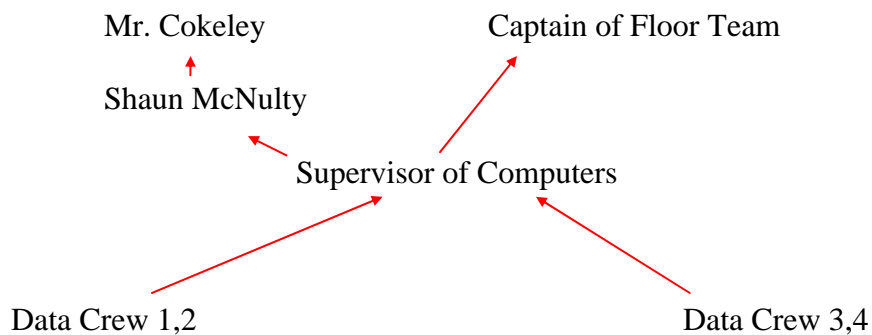
Preparations-

1. Work with the supervisor of computers to develop data collection procedures and forms
2. Help Supervisor of Computers with assembly of system
3. Input data for database
4. Develop into two teams of 2 for data collection

Operations-

1. circulate around the teams in the pits and collect information for database
2. input the data into the computer in the pits
3. coordinate schedules with scheduler

Organizational Chart-



Pit Crew

overall responsibilities- Aid and work with the BMS tradesmen crew to insure the robot is functioning properly for competition.

20. Electronics Assistant to Mike Lubniewski

responsibilities- Be the right hand man to Mike Lubniewski and aid him in whatever he needs.

Preparations-

1. learn the c-stamp programming
2. learn the tools used in wiring and programming the robot. Assemble the toolboxes and keep track of the tools.
3. be familiar with all aspects of the robot operations

4. Obtain the rule book and learn the rules and regulations for compliance with robot design

Operations-

1. Accompany Mike Lubniewski throughout the competition and aid him with tools and whatever help is needed.
2. Be responsible for the toolboxes used and keeping track of all the tools.
3. keep track of the programming cords and spare parts for the electronic system- fuses, spike relays, etc. Have them handy.
4. Keep the pits cleaned up and organized

21. Tools assistant 1

22. Tools assistant 2

Responsibilities- Act as assistants to Walter Suchowiecki and other BMS tradesmen and do whatever work they require.

Preparations-

1. learn the c-stamp programming
2. learn the tools used in wiring and programming the robot. Assemble the toolboxes and keep track of the tools.
3. be familiar with all aspects of the robot operations
4. Obtain the rule book and learn the rules and regulations for compliance with robot design
5. pack and be ready with overhead lighting for the pits

Operations-

1. Accompany the BMS tradesmen throughout the competition and aid them with tools and whatever help is needed.
2. unpack robot from crate in the pits. Keep track of all materials.
3. Be responsible for the toolboxes used and keeping track of all the tools.
4. Set up lighting in the pits
5. Keep the pits cleaned up and organized

23. Battery Keeper-

responsibilities- Insure that there is always a fresh battery for the robot available

preparations-

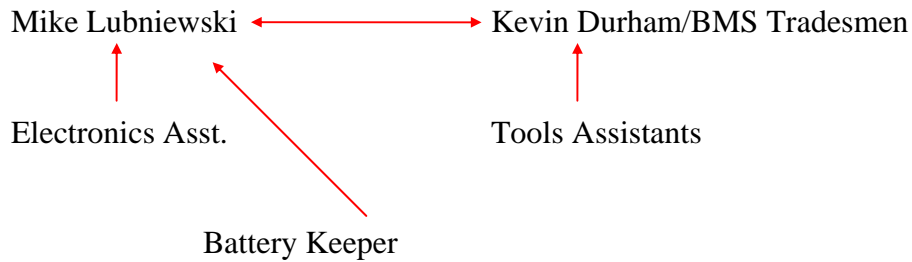
1. learn how the battery chargers work. Timing is important
2. learn the tools used in wiring and programming the robot. Work with the other pit crew on tool boxes
3. be familiar with all aspects of the robot operations

4. Obtain the rule book and learn the rules and regulations for compliance with robot design
5. organize electrical cords for the pits including power strips for robot power tools, computer system and charging center

Operations-

1. set up charging center and power lines in the pits
2. keep batteries charged up
3. accompany robot to the arena each trip and have battery available for use
4. deal with any electrical mishaps which occur in the pits

Organizational Chart



Appendix B- Team Handbook- (available from team 25 upon request)

Raider Robotix **FIRST Robotics Team** **2006 Handbook**



Raider Robotix

team #25

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Welcome

Congratulations on being selected to be on the Raider Robotix Team. We think you will find your experiences very rewarding and enjoyable. This guide is intended to give you an understanding of the program and your responsibilities as a team member. In the following pages you will find information relating to team history, selection process, team rules, team guidelines, organization at events, travel and many other aspects of our team.

Please review all the information very carefully. If you have any other questions that this guide has not covered, or if there are questions regarding any topic, do not hesitate to ask a coach.

You are encouraged to share this manual with your parents, and keep it handy for future reference.

History

The Raider Robotix Team formed in 1997. In that year Ms. Freeman of the science department was approached by the NJ Systemic Science Initiative to introduce new forms of science curricula into the school. Through NJSSI we were introduced to FIRST and coordinator Randy Schaeffer. He and the NJ Chamber of Commerce introduced NBTHS to the folks at Bristol Myers Squibb and a sponsorship relationship developed. From the start, Mr. Cokeley has been the developer and coach of the team.

In the first few years the team operated in a limited fashion from the wood shop at NBTHS. The robots were built with hand tools and a lot of help from parents with little interaction with the sponsor shop. Subsequently our budget was very small and we did not do much other than participate in the NJ Regional. The team is the first commercially sponsored activity in the school district's history and represents years of ground breaking work and new policies for the district.

In 2000 a new relationship with the BMS sponsor developed with the shop personnel taking a more active role on the team and the robot construction being shifted to the metal shop at BMS. The mentorship part of FIRST developed and the students got far more experience in the shop at BMS. Subsequently we won the National Championship in 2000 and haven't looked back.

In the years since 2000 the team has been highly awarded and has graduated nearly 50 seniors into college programs. The team continues to grow and evolve and looks forward to an even brighter future

Qualifications

Qualifications to be a Team member are important to ensure the goals and objectives of the team are accomplished with quality and efficiency. There are minimum qualifications to be eligible for the Club / Team.

Note: *All selected students are part of the FIRST team for the first semester. During the second semester selected students become part of the FIRST Team until the end of the school year.*

What makes a good team member? The list below is some of the attributes that are looked at during the selection process.

Application:

Each student is required to complete an application. The time lines and directions for the application are very specific. Care should be taken to complete the application as neat and through as possible. The student response portion should be composed with care. It may be word processed and attached to the application, if preferred.

The parent section is very important. Take care to see that it is complete. If there is a language barrier the student may translate for the parent. Student should indicate that it is translated in the heading of the document.

Criteria for Membership on Raider Robotix Team

- 1. Members must maintain academic eligibility as per school policy-**
Periodically through the year the roster will be checked with the main office for compliance. Positive learning habits are related to study skills, classroom assignments, grades, classroom / school involvement. A student's current grades and past achievements are powerful statements about his or her learning habits.
Dropping grades and failure to meet eligibility requirements may jeopardize your spot on the team. All Team members will be expected to maintain at least a C+ average in all courses. Any Team member that falls behind in their studies will not be allowed to travel with the team until their grades are once again at or above a C+.
- 2. Members must fund raise a minimum of \$300 for their travel expenses -** Fund raising activities occur throughout the year and include shirt sales, car washes, events and others. Each member will have an individual team account to keep track of their fund raising.
- 3. Members must perform a minimal 10 hrs of community service before January 1. -**
This service must be approved and registered with the CS director. The director will keep a log book of all community service for members. Community service is defined as activities performed without pay for the good of others in the school or community.
- 4. Members must attend the Wednesday meetings and Team Functions-** Attendance and punctuality are indicators of a student's commitment to their education and future. A team member needs to be available and ready to participate as much as possible. When asked to participate, establishing a record of dependability and punctuality is essential to team organization and efficiency.
- 5. Parents of members are expected to participate in team activities and help in team operations**

6. **Members will take a course or workshop related to robotics per committee approval- either curricular or extra curricular** – Most important of these is the shop safety orientation. No member can participate in shop or pit activities without taking this orientation.

5. **Demonstration of Appropriate Behavior-** The Raider Robotix Team is a unique team of students and adults. We all rely on each other for the success of the group. Everyone is expected to bring the best of their abilities to the group. The competition each year is both expensive and time consuming and it is expected that all involved will behave as motivated young adults with the greatest regard for others and integrity.
 - a. **Consistent Demonstration of Good Judgment and Positive Behavior:** Each team member is an ambassador of our team. Team members need to be role models for other students to emulate and respect. Solid behavior choices should be demonstrated at all times, in and out of school activities.

 - b. **Ability to commit to a Project:** Starting a project and following it through to the end is critical to team performance. Team members need to dedicate themselves and not to get side tracked or discouraged. Your word is very important. **Don't take responsibility you can't perform and ask for help if you are having problems with a project. There is no excuse for a broken promise in this project.**

 - c. **Ability to Work both independently and as a Team Member:** Being able to be a team player, doing what is needed for the team is an asset to all. However, working independently with little or no direction shows dedication and willingness to learn.

 - d. **Interest in Science, Technology, Robotics and Related Fields:** The team member needs to have an genuine interest and a overall goal related to these fields of study. Activities, classes and career choices demonstrate this.

 - e. **Demonstration of Honesty and Integrity:** Honesty and integrity are looked upon as important attributes of a quality person.

 - f. **Time to Spend on Activities:** This team requires many hours of a student's free time. Careful planning and scheduling may be required to stay actively involved. In some cases, choices as to other activities may need to be made.

Selection Process

Selecting a team is a very difficult task for the coaches. Typically there 100 or more applications including members from the previous years' team that also have to apply. Being a member on the team the previous year is no guarantee of a place the next year.

The process starts with the application. During the month of September applications are available to all active students at Clubfest and in the science department. Advertisement and recruiting for the applications is done via the announcements, teachers, word of

mouth and postings in the locker areas of the school. **The application time period is approximately two weeks.**

All applications are due on or before the published date and time advertised. Late applications will not be accepted. All applications will be returned to the designated location.

Application Review Process:

All applications are reviewed for missing or inaccurate information. The applicant is contacted as needed to provide the data that is missing.

A review is conducted of the student's records in the office. Data on absences, tardy and referrals is gathered and noted on the application.

Interview Process:

All applicants are scheduled for an interview to be held after school hours. At this five to ten minute interview the student has a chance to meet the current coaches and answer questions regarding their skills, talents and interests.

Final Selection Process:

The coaches and a committee of senior team members look at all applicants and build a team that will accomplish the goals of the team. Hard decisions may be made to reduce the quantity to a target team size.

Notification:

Students selected for the team will be hand delivered a letter of acceptance during the school day.. An announcement will be made via the PA at the end of the day announcing the team.

Students not making the team will receive a letter of notification the following school day. All students will be encouraged to re-apply the next year.

Fall Team Activities

The Raider Robotix Team has a fall phase of the team that operates from September to mid December. During the fall phase the members work on the FIRST project and all associated off season activities. This is the time period when your dedication, grades and team performance is monitored very closely to make sure they are up to the standards of the team. Close attention is paid to attendance to mandatory and voluntary events such as fund raisers and local replay competition events. Robot maintenance and some training will take place during this time. This probationary period is also a time for students to experience team activities and to determine if this activity is for them.

There will be an interview in December that will be a review of the activities to that point. At this time you will either be placed on the official team or removed from the club.

Raider Robotix FIRST Competition Team

Students successfully completing the fall phase will be placed on the official team after completing an interview in mid December. The placement on the official team will run until the end of the school year unless situations arise that would put a team member's status in jeopardy.

It is during this period that team leadership will evaluate the abilities of members for placement in the positions as drivers, pit crew, etc.. Positions are subject to change according to the needs of the team and performance of the members.

All team members must reapply to the team each year. Placement on the team is not automatic because of experience.

Participation

The FIRST Team requires many hours beyond the normal school day. All team members are required to participate in after school workshops, events and other team activities unless a valid reason for absence is provided. Usually the team meets Wednesdays (unless otherwise announced) during the fall semester from 2:30pm to 3:45pm. These are mandatory after-school meetings that focus on team building, and sub group work on a variety of tasks.

A formal roll call may or may not be taken during meetings and other activities, but the absence of a teammate is noted and remembered. It is understandable that team members may be bound to other extra-curricular activities, such as other teams or clubs, but it is expected that the necessary amount of time be spent with Robotix.

Students that take active and productive roles in the team, will be rewarded by receiving important responsibilities. Those who are lazy, unproductive, and lack the dedication to attend all or most meetings and activities will not be entrusted with the same kinds of responsibilities. If a team member wishes to do something important, they must first show that they will follow through to the end and not leave tasks unfinished. This is to ensure that the team works efficiently and effectively.

School Work

All team members are expected to maintain all their grades and class work during the entire time he or she is on the Team. As a Raider Robotix FIRST Team member you are held to a high standard that many other clubs or teams do not require. Our high standards and expectations are one of the strengths of our team.

Grades:

All Team members will be required to maintain at least a C+ average in all courses. Any Team member that falls behind in their studies will not be allowed to travel with the team until their grades are once again at or above a C+.

Travel Assignments:

When we travel you are required to get all class work, assignments and readings before we leave. Please allow teachers several days to get these assignments ready for you. Getting these assignments is your responsibility. Upon your return to school all the assignments that have been missed will be due unless your teacher says otherwise.

Behavior

A Club/Team member's behavior is under scrutiny, at all times. It is very important that you understand that you represent North Brunswick High School, Bristol-Myers Squibb and foremost your team Raider Robotix.

School:

Your behavior in school and specifically in the classroom is a message to all regarding the caliber of students on our team. You are looked upon as role models, and examples of the best students our school has to offer.

You are expected to at all times be polite and respectful to all staff members and refrain from activities that are considered disruptive. Any club / Team member receiving a disciplinary of any type is subject to review by the coaches.

If you don't think you should do it, then probably you should not.

Events:

All eyes are on you every minute you are in public. Your behavior is a direct reflection on your character and on our team. A judge or member of another team may over hear what you say to one another and how you say it. Even the expressions on your face and body language may bring unwanted negative attention and bad impressions.

We are a very close family when we travel and conflicts may arise as a result. Students should refrain from rumors, he-said-she-said, and negative comments about one another. If a problem arises with another student you are requested to speak to a coach immediately. Students are not allowed to have physical conflicts with each other. If a problem such as this arises, both students may be disciplined as per school rules.

Cooperation:

Students are requested to cooperate at all times. This is to mean that if a coach requests you to do something you will comply with the best of your ability. Ignoring the directions or requests of a coach is not in the team's best interest. If you feel a request is out of order, you are encouraged to complete the task then speak to the coaching staff at a later more appropriate time.

Inappropriate Behaviors:

These behaviors include but are not limited to the following:

Running in hallways, pushing and shoving, name calling (negative), making messes, fighting, swearing, stealing, and all other activities that reflect negatively on the team.

Boyfriend/Girlfriend:

In the event that a relationship develops or is ongoing, there are certain guidelines that must be adhered to at all times when engaged in team activities local and away.

Handholding, hugging, kissing and other expressions of affection are prohibited at all times. The couple must also travel in a group at all times. Couples may not wander off or sit alone. In other words, they should not appear as a couple but as part of the team. Common sense should prevail at all times.

The coaches reserve the right to discipline a Club/Team member as necessary for safety and the overall good of the team. The parents will be informed of any disciplinary actions as soon as possible.

Plan of Assistance / Probation

There are several reasons why you would be placed upon probation and a plan of assistance. A Plan of Assistance is method of identifying a behavior and outlining the steps to correct the behavior within a specified time length of probation. The plan is a corrective method designed to assist the student and keep him or her eligible for the team.

Academic:

Monitoring your grades will occur on a regular basis. You are expected to be making academic eligibility as per school policy and maintain grades of at least C+. If we identify a class you are having difficulty in that may affect your GPA in a negative manner, you may be placed on probation with a Plan of Assistance. This written document (Plan of Assistance) will be provided and signed by the student and shared with the parents and the administration of the school. This document will contain suggestions for improving and correcting the behavior, a timeline for the correction and a clear explanation as to what is expected. Included will be the outcomes and consequences associated with the behaviors.

You also will be placed upon a plan of assistance if you receive the grade of “F” in any class any marking period regardless of grade point average. Two “F’s” may result in dismissal from the team.

At the end of the probation length of time if the situation is not corrected you may have probation extended or you may be dropped from the team. This decision will be made after considering the effort and progress made during the time length.

After School Activities

Many of our activities are after the school day ends, usually 2:25pm. During the fall phase, first semester, the activities are one or two a week and last about 1 to 1 ½ hours. During the competition season, 2nd semester, we will work each day as required. Students must provide their own transportation home. A phone will be available for student use.

Procedure:

As soon as school is dismissed you should go to your locker and secure all materials including homework that you want to take home and come to the FIRST room. This is because the commons area is usually locked after school.

During these after school activities students will work on many aspects of the competition. This is the time that the focus of your sub group is developed. Strong pre-season preparation makes for less stress during the competition.

There are some specific tool skills that all students will learn during the after school activities. These include using a soldering iron, wiring connectors, drill press, grinder, dremel, hacksaw, wrenches, multimeters, and power hand tools.

Students will also learn about the process to design our robot. BMS engineers will present lessons on the usage of motors, the control system computer interface and the programming language. Presentations will also include the process of designing a robot for the FIRST competition that will occur second semester.

Students are encouraged to spend as much time as possible above the required activity days. This very important to get the project completed. Attendance will be taken and recorded in the student logbook giving credit for time spent on the project.

Other Responsibilities:

It is understood that our students are very busy in many other school activities. These activities are encouraged and supported by our team. It is the responsibility of the student to manage and balance all their activities, informing the sponsors of their commitments.

Sports teams provide different challenges and different stress upon your time. It is important to communicate with your coaches to work out the timing of your activities. Often these activities can be accommodated to the satisfaction of both activities.

There are some instances however, where the timing cannot be resolved. **In this case you may have to choose which activity you will be putting your time and effort into.** Please discuss this problem with a FIRST coach before you make a final decision.

Health

Each Club/Team member needs to have a complete medical form on record. This form must contain accurate information and be updated as the need arises. This form will be duplicated and taken with us to all events.

Students taking any medication while we are traveling need to have the list of these medications on file with the coaches.

In the event you become ill on a trip, transportation home will be at the parents' expense using first available transportation.

It is suggested that all students take precautions when being exposed to the sun for any length of time. Use of sunscreens is encouraged.

It is important that you do not travel if you are ill.

Uniforms

Our uniform is an important part of our image and thus must be maintained with dignity and care. There are several parts to our uniform that may be worn in several combinations.

For serious occasions we wear the **Raider Team Polo** with **khaki pants** and dark shoes or sneakers. This is worn when we represent the team for interviews or to the press.

The cheering team uniform for Raider Robotix is the **Hawaiian Aloha Shirt**. These are generally obtained from Royal Hawaiian Creations in Honolulu. Each year the team chooses a new design for the following season and we use the sale of shirts as a fall fundraiser. Students purchase their Hawaiian shirts annually and usually buy several so they have a change of clothes on trips.

Along with the Hawaiian shirt is a logo printed **work tee** shirt worn as an undershirt in the full uniform or by itself in times of labor. These are reserved for the pit personnel.

FIRST caps are allowed and encouraged. Hawaiian shirt printed items like sarongs are allowed for the women.

Pants are allowed to be variable. However in the robot areas long pants and closed shoes are required.

Care:

The care and cleaning of the uniform is the students' responsibility. Please wash the shirt in very mild soap using warm or cold water. Drying should be limited to hanging or drying on the low setting.

Please use NO bleach or harsh detergents on any of the uniform items.

Appropriate Use:

A full uniform is described as the aloha shirt over the polo shirt, khaki pants, and FIRST cap if specified.

Shirts will be worn at designated days and events. Usually a specified shirt will be worn every meeting day.

Additional aloha shirts will be available for purchase by students and parents as stock allows.

Students are allowed to trade aloha shirts without permission of the coaches but they are responsible for having a complete uniform throughout the season.

Coaches

The coaches of our team are dedicated teachers working hard to make the season a success. Most of the work is done when we are not looking. Their work includes team organization, financial planning, overall team management and much more.

While we are on trips, they are considered to be like parents. From taking care of the students to making sure we are doing fine, their efforts are immeasurable. They are always on the lookout for us and therefore we should obey them at all times. Misbehavior towards coaches (especially during competitions) will result in severe consequences.

If you have any concerns with the activities of a coach or their behavior toward you or others please talk to the team leader first. If the situation is not resolved the next step is to talk to the school administration..

Engineers

Extremely dedicated and talented, the engineers from Bristol-Myers Squibb & Company help us throughout the season. The quality of their efforts can be seen in our bots. Since we won the Championship in 2000, they have been with us, and are truly amazing individuals to know. Like the coaches, these people are a great source of wisdom and knowledge to you.

At all times, during build season and competitions we give these people all the respect that we can. While their decisions might not seem right to you at times, over time you will come to realize they do everything from experience. To earn a spot working with the tradesmen is an honor and achieved by visible effort to contribute to the build and pit team efforts.

Work at BMS

Selected students will get a chance to work with the engineers at Bristol-Myers Squibb & Company. Transportation is the student's responsibility and the student will be notified on the exact location we meet. They will be asked to Sign in and will be given a security badge. Sign out when upon leaving and return the badge.

Stay with the group at ALL times, and never go into areas you are not supposed to, or required to. Remember that we are guests at BMS, and we should watch our manners.

Throw any garbage, keep the place neat, and watch your behavior. It is a huge privilege to work there. Safety rules are in effect at all times and safety gear must be worn.

Sub Teams

The Raider Robotix Team is made of several sub teams to get the FIRST project completed. By dividing into specialized groups students are able to focus on specific aspects of the project.

Chairman's Team:

The Chairman's Award is the greatest honor in the FIRST competition. The award is given to the team that best exemplifies the ideals of FIRST. To exemplify FIRST a team must show community involvement, demonstrate their partnership, inspire other teams, be a role model and be of service to the community of FIRST.

To earn this award the team must demonstrate all aspects of their team by the creation of a Chairman's submission in the form of a written submission and/or video. There are very specific criteria for this submission as well as a specific due date.

This sub team is made up of students that are interested in documenting our team's efforts in the form of a submission. This submission can take on many forms. Coordination with the other sub groups is essential for the success of the project. The resulting document is a chronicle of our team's efforts. This team reports directly to Mr. Cokeley

Pit Crew:

The Pit Crew has several functions depending on what stage of the competition we are in. In the fall they are responsible for maintaining current robot and tools. Once the competition starts the crew creates the playing field to specific directions. Once this is completed they assist in the development of the robot and operate the pit area at the competitions. A major responsibility is the preventive maintenance and repair of the robot at the competition.

This team reports to Mr. Suchowiecki and Mr. Lubniewski in the competition season and to Mr. Cokeley in the off season

Build Crew:

This team does the actual assembly of the machine during the build phase. The jobs vary depending on the direction of the BMS shop crew and the abilities of the students. Normally this group dissolves into the Drive and Pit Teams once competition starts.

This team reports to Mr. Suchowiecki, Mr. Lubniewski and Mr. Cokeley.

Programming Team:

This team develops the code for the autonomous functions of the robot. The team learns the C++ necessary to do the job and spends time working with the build crew and drive team making the robot play the game well.

This team reports to Mr. Lubniewski.

Animation Team:

The Animation Team uses a software program called 3D Max to create a 30 second animation of our robot playing the current game. Team members will need to be enrolled in a special class to learn the software prior to the season. The team members must also have a computer at home to work on the project. This team reports to Mr. Ciance.

Drive Team:

The Drive Team consists of an arm operator, a chassis driver and a human player. A competitive selection process using several robots from previous years selects the drive team. Students interested in becoming drivers should practice as much as possible to develop their skills. There is a main team and a back-up crew usually made up of rookie drivers.

The drive team is required to stay with the robot a majority of the time at the competitions. They will also arrive early and stay late to practice at the competitions. This group must interact with the Scouting Team and the Pit Crew .

This team reports to Mr. Cokeley, Mr. McNulty and Mr. Lubniewski

Scouting Team:

The Scouting team is formed prior to the competition. Students on this team will develop materials and methods to assess the competition giving our team as much advantage as possible. The collection of data and the analysis of the information will assist our team in all phases of the competition. The team is also responsible for the creation of the competitive assessment book working closely with the photo team.

At the competition this team will make a presentation to the drive and pit teams on Friday afternoon. The scouting team reports to Mr. Goldman and Mr. McNulty.

Volcano Crew:

The Volcano Crew is formed in preparation for the competitions and team activities. At the competitions we show support for our team and other teams by cheering and other activities. Showing spirit at the competitions is very important. The Crew develops the cheers and organizes the development of our “unique” spirit activities.

At the competitions we also do special activities that allow us to bond and make friends with other teams, a very important aspect of our team.

This team reports to Ms. Evanouskas and Mr. Goldman

Communications Team:

The Communications Team works to hone interviewing skills and presentations. They often speak directly to groups, judges and the media. At competitions they are stationed outside the pit area to greet other team members and present our image to the public.

The team will also keep up to date on FIRST rules revisions and inform the team throughout the competition season.

This team will submit press releases and articles to the local news on a monthly basis. They will take and archive photos of the events of the season.

Subteams:

The Web subteam develops many sections of our website www.raiderrobotix.org. Members of this team need to have internet access at home and have or be willing to learn basic HTML. .

The Video Subteam : There are two focuses of the video subteam. The first focus is to create a video that partner with the Chairman's document. Usually this five to seven minute video is done in a creative way to support the information presented in the chairman's document and which can be used for team publicity.

The second focus is that of analysis of our robot and its performance. The video team will record all the activity of our robot during practices and all matches. This video will be reviewed by the Drive Team and Build Crews immediately at the conclusion of the activity at a designated location. The information gathered will allow the team to analyze the performance as well as strategies used to play the game.

The students on this team should have an interest in using the video camera and editing using computer software.

This team reports to Mr. Cokeley, Mr. Goldman and Mr. Palazzo. The Webmaster is currently Chris Signoretti .

As you can see there are many teams for which members can specialize. Students will be placed upon a team based upon their interest whenever possible.

Fundraising

All students are required to participate in all team fundraising activities. The funds raised are typically used for student expenses while we are traveling. Travel costs are supplemented by money from the team treasury obtained as a part of our sponsorship grant.

Every student has an individual fund raising account maintained by the coaches. Profits made from fund raisers are accumulated in these accounts and spent for travel expenses with the team. In the event a student leaves the team the travel account is forfeit and is absorbed in the general treasury of the team.

The RPM parent group will soon be responsible for arranging various fund raising activities throughout the year.

Hawaiian Shirt Sale- Each year the team sells Hawaiian shirts as a fund raiser for the team. These shirts represent the color pattern the team has chosen for the season and is used as our seasonal uniform. The team also gives shirts to special friends and dignitaries as a gesture of good faith.

Selling the shirts to the public and friends means that we have a non-team support section cheering for us at events. The Hawaiian shirts have become a trademark for our team and remind us that the National event at the end of the year is held in a tropical part of the country to which we would like to travel.

Car Washes- Typically the team has 1-3 car wash fund raisers through the year. These are held at the Our Lady of Peace Church. All members are expected to participate in these events and profits are divided amongst the participants individual accounts.

Other fundraisers may include raffle sales, and other items as deemed appropriate. **All fund raisers must meet the criteria of having little or no initial outlay and having reasonable profit for the time expended.** The fundraising committee is always open to suggestions of ways to earn money for the team. Please contact a coach with your ideas.

If parents have an objection to their student participating in any fundraising activity they are asked to speak to the coaches for an alternate method of replacing this revenue for their student.

Brunswick Eruption

The Brunswick Eruption is a FIRST like competition we run for other FIRST teams from all over the United States. Working with NASA engineers our team borrows and constructs a FIRST field at NBTHS and we host a replay of that season's game.

Typically there are 24 or more schools and approximately 1500 persons at this event. The gym is decorated; there is a pit area, and an operations setup highlighting all the activity.

Team members will be involved in the construction of the field, our competition team, hospitality to other teams and operation of the event. Each student will assist in the setup on Friday prior to the event. This is all day long and may involve some early evening activity.

On Saturday students will be assigned a task for the day. It is important that all students participate in this activity for the entire length of the activity. This is a very busy day for everyone involved including your parents who will assist us in the concession area. The profits of this event are used to pay for our team travel activities and to develop new teams in the region.

Travel

Traveling as a team is very exciting and rewarding and often the highlight of a student's memories. A great deal of planning and organization is required to coordinate all the associated activities. A strong effort is made to make the travel to be a educational / cultural experience as well as the basic competition. Safety is always the major concern.

All team members are eligible to travel to all events unless otherwise exempted. A student may be exempted from travel due to a prior commitment approved by the coaches in advance or disciplinary reasons from the coaches or principals. All team members are expected to attend all events. Failure to attend an event may result in dismissal from the team.

Air Travel:

Traveling on aircraft is fun and exciting for most team members. There are special procedures we must follow to ensure safe and efficient travel.

We will wear FULL uniform for travel at all times. Items that are not designated as team uniform will not be worn. This includes head coverings, scarves, and other non-uniform items. Note: coat in winter is allowed.

We will meet at NBTHS at the designated time and location. Please be on time, as we will not wait for students. Have a back up system to your alarm clock and travel to the school. Note: All students will assist in loading the luggage on the bus and unloading at the airport. Having several students in the bus handing the luggage out to the waiting students best does this. We must be as quick as possible.

At the airport after unloading the luggage we will form two lines of students moving to a designated area. It is key to stay out of the way of other travelers and to keep talking to a minimum at all times. If it is winter students and coaches will remove outer coats to expose our uniform as soon as we are inside the terminal.

Once inside students will stay in the designated area at all times. Luggage is not to be out of our control at any time. If students need to use the restroom he or she will need permission of a coach. When we are ready to process your luggage and tickets students will form a line based upon alpha order. Mr. Goldman will see that the team proceeds in orderly fashion.

Packing:

A word on luggage is critical at this point. It is very important to pack efficiently. That means to bring only the clothes and items that are necessary and required. Remember students must carry their own luggage in the airport. There is no prize for the largest luggage. You are only allowed 1 suitcase, and one approved team carry-on. All luggages must be identified with the name and address on a tag prior to entering the airport.

Counter Procedure:

Students will be processing their luggage and ticket at the counter. Again, it will be alphabetical order – except the coaches who will go first to assist the process. At the counter students will show the agents their **school Identification**. It is important to have the identification ready to be shown. You will also be asked several questions regarding your luggage. This is a serious time pay close attention. When complete move to designated location while the others are processed.

Security Check:

When all members have been processed, the team will proceed through the security checkpoints. At this point all metal items including change, cell phones, pagers and keys should be placed in the carry on item. Form a single line placing items on the conveyer when appropriate. If is winter you will place your coat on conveyor. Wait to be directed through the detector by the security person. Collect all items and wait at designated area. Here you will need to stay close to wall out of traffic area. As a reminder, keep talking to a minimum and wait for directions.

When we have all gone through the process we will proceed to the gate. Do not stop at the bathrooms, get a snack or wander away from the group. Permission will be given later if time permits.

At the gate find a seat, stay with our group and wait for further instructions. If time allows, you will be allowed to go to the bathroom or to get a snack. NOTE: We travel in groups of three or more at all times. If leaving your carry-on please ask another student to keep control of your bag.

We will take attendance several times in the airport. Please be aware of your group and refer to the attendance process outlined in the section on attendance.

Plane Entry:

The coaches will issue a boarding pass at the gate. This process will vary depending on the airlines and the workers at the gate. If you are given a boarding pass, do not put it away at this time, have it ready for boarding. A coach for safekeeping will collect the remaining boarding passes. Directions will be given for you to board the plane. When entering the aircraft, please go to the assigned seat. Locate an empty spot overhead and store carry on or place it under the seat. Once seated follow all directions as given. Trading seats is only allowed with the coaches' permission.

If the flight serves food or drink please be very careful to avoid spills.

If you feel ill or need assistance please get the attention of one of the coaches. Some persons have a problem with the air pressure and the effect on the ears. Chewing gum, swallowing frequently sometimes helps. Consult your doctor prior to travel if this is a known problem.

Plane Exit:

After we land exit in a safe manner. Be courteous to others as you exit. Remember to get the carry-on luggage and other materials before leaving.

Upon exiting the plane, the team will gather to the side out of traffic. Listen and watch for the directions of the coaches.

We will then proceed after attendance to the baggage area. Walk in double file lines to the side away from traffic. At the luggage claim wait and watch for your luggage. Once you get your luggage go to the designated location and wait for directions. We will follow earlier directions for loading the waiting transportation.

Bus:

Often we use busses as our mode of transportation. We will store luggage in lower compartments or on another bus if needed. Do not open windows without permission. If having a snack or drink dispose of the mess when finished. When leaving the bus make a check of the area to make sure all belongings have been accounted for.

Car:

Often parents, coaches and engineers will transport students to different events. At all times, all persons must wear seatbelts.

Competitions

Typically our team attends two regional and one National competition.

Regional Events:

A regional event may be close or a distance away. Which regional events we attend is dependant upon location and timing of the events. Usually we do one local event and two at locations where we can best showcase our team and are exposed to a variety of quality robots.

Often we travel by plane to the events out of state. Refer to the section on travel.

Most regional events follow a set pattern:

Wednesday: This is the day we typically arrive on; this is the day before the competition starts. Depending on arrival time we try to schedule in tours, sightseeing or other team events. Some evening activities may be planned depending on our location and time of arrival.

Prior to our arrival, all students will be given a schedule that outlines their responsibilities every hour of the day. All students are expected to follow this schedule as closely as possible. This should be kept with them at all times.

Thursday: The drive team and some of the pit crew arrive at the event early to set up the pits, unpack the robot and start the robot inspection process. The main team will have breakfast together in a private dining room at the hotel, if available. The main team will stay at the hotel using the time for a study period. The main team arrives at the venue before noon.

When the team arrives it starts the competitive assessment process, locates a place in the stands, and walks around getting to know the other teams by trading buttons with them.

Usually our robot will practice two times during the afternoon. While waiting for our robot, the photo team is taking pictures of each robot, and the competitive assessment team is reviewing the performance of the other robots. Usually the day ends at 5:00pm. The drive team and pit crew may be required to stay and work on the robot until the pit closes.

The remainder of the team will go to dinner as a group if possible. When dinner is done the team will return to the hotel depending on time. A meeting is usually held within the hotel in a meeting room at about 10:00pm. Lights are out at 11:00pm.

Friday: In the morning the team will have breakfast together. The entire team will arrive at the competition as soon as the venue is open, typically 8:00am. The main team will locate a place in the stands, while the photo team and competitive assessment works on their assignments. The video team will prepare to film each match and replay it at the fifth quarter (the debriefing after the match has concluded) to review the performance and strategy. We may have as many as four or five seeding matches on Friday.

Saturday morning the pits open up at 8:00am. Our team would have had breakfast earlier that morning. Upon entering our team again locates a place in the stands. Opening ceremonies start at 9:00am with the final seeding matches following. Depending on the format of the competition the finals occur in the early afternoon. The format of these finals varies from year to year.

At the conclusion of the competition there is an award ceremony where the remaining trophies are passed out. When this is complete the pit crew and drivers pack up the robot for shipping back to the school. This is usually around 5:00pm. Due to the distance and the cost of transportation we usually stay Saturday evening. Dinner will be at a convenient location.

Sunday morning we may be leaving early depending on transportation availability.

A local event will be formatted the same way with the exception of the transportation, breakfast, and free time.

Competition Protocol:

There are certain practices that we have found to be very successful and have earned us many rewards and the respect of the FIRST community.

Cheering: *Cheering is more than yelling at the top of your lungs.* True cheering is enjoying the event and celebrating the excitement of the moment. Organization is the key to this being a powerful tool. Your spirit leaders will give you direction and guidance for this activity. You are not expected to be cheering 100% of the time, however, when we are cheering all team members are expected to stand and cheer to the best of their ability. Sitting in the stands looking bored, carrying on personal conversations while others are cheering is not good for the team image and is not permitted.

Award Ceremony: During the ceremony we will applaud the teams that are winning awards. When we applaud we will stand to show our respect for what they have accomplished.

Greetings: There are certain persons in the FIRST organization that we make an effort to greet on a personal level. If you see Dean or Woody enter the area and you have not said hello, make an effort to go to where they are and greet them. If they are engaged in a conversation with another person please be respectful at all times.

Litter: If you see a mess (paper or trash) you should make an effort to pick it up. That goes for the area you are sitting as well as any other location in the arena.

Things We Do Not Do At An Event:

Wearing of personal music devices is forbidden while in uniform or at an event.
Uniforms may not be altered or worn in any manner not approved by the coaches.
Students may not play cards or any other games at the event.
Our team will not engage in negative behavior toward another team or team member.
Our team will not display displeasure over any decision by a referee or judge.
Team members will not exchange negative remarks to each other, no matter what the situation.

NATIONAL EVENT:

The national event is very similar to a regional event in many ways but on a larger scale. There will be teams from all over the World.

Wednesday we try to arrive very early in the event city. After proceeding to the hotel to drop off our luggage we typically spend the majority and remainder of the day at the event complex. Students are free to explore. .As always students will travel in groups at all times. Students are expected to be back at the hotel at the predetermined time for a team meeting.

Thursday morning we have a group breakfast and all proceed to the event. The pit crew and drivers will set up the pit and prepare the robot for inspection. Button trading,

scouting involving the photo and video teams and other specific events occur throughout the day. We will have two practice matches spread during the day. All team members are required to stay at the event and with the team until released by the coaches.

We will provide a refreshment station for our team. Team members will be able to get drinks and snacks there at no cost. Lunch is available from several vendors for a fee.

If the practice rounds finish early enough students will be released to go to local activities. All team members will be required to be back at the hotel at the pre-determined time. Please allow enough time for transportation. There will be a team meeting at a specified location and time. Typically we have a meeting every evening to recap the events of the day.

Friday will start with opening ceremonies in the main arena. The seeding matches will follow this spectacular event. We will usually get three or four matches that are spread throughout the day. We will pass out the newspapers and other items as planned.

Friday is also the day when the judges will make their rounds to each team. There will be two Communications students in the pits at all times. This is the last opportunity to be proactive regarding the Chairman's Award. Every effort must be made to show all the great things our team has done.

The team will be dismissed to go to local attractions if time allows. The scouting team will meet back at the hotel to complete competitive assessment materials in preparation for the competition on Saturday.

Students will be required to be back at the hotel at the pre-determined time. Please allow enough time for transportation. There will be a team meeting at a specified location and time.

Saturday: After breakfast as a group, we will proceed to the competition as soon as the pits open. At 9:00am there will be another opening ceremony. You will not want to miss this event. We will sit together as a team. The seeding rounds continue until about noon. Depending on the configuration of the competition, the finals will be held in the afternoon.

Following the last matches there is a 1 to 2 hour break before the award ceremony starts. This ceremony takes about 1½ hours. The team will sit together for the duration of the ceremonies. Following the last award FIRST will provide an entertainment spectacular that is always a treat to see. You will not want to miss this.

There will be a team party following the awards that will take place in event center. You will need some type of entrance pass; this varies from year to year. At this party there will be food and sidewalk entertainment. Many rides and attractions will be open for a limited time that evening. You will be required to be back at the hotel at the pre-

determined time. Please allow enough time for transportation. There will be a team meeting at a specified location and time.

Sunday: What we do will depend on arrangements, funds and transportation. This arrangement will greatly depend on student fundraising activities. There will be an opportunity to help plan additional arrangements as soon as details are released by the FIRST organization.

National Set-up:

The setup of the nationals varies each year. Generally there is a large stage where there is seating for many thousand people. This main stage will host the opening ceremonies, some matches and the finals.

In addition there is a main pit tent. Within this air-conditioned tent each team will have a pit space that many be arranges numerically or by division. Imagine a tent that will hold 300 teams and the team members associated. This varies from year to year. Adjacent to the pits are several tents that will house playing fields to hold the seeding events. Which field we are on and when we will play will depend on the schedule provided at the start of the tournament.

Depending on where we stay, the transportation available will vary. If we stay at the Disney resorts, we will have bus transportation provided. If we stay off site we will have our own bus transportation.

Hotel

When we travel we often stay at a hotel for several nights. **Students will be organized into room groups of either three or four students, depending on quantity of students and room availability. Students will be allowed to select roommates of their choice. There are no co-ed rooms; rooms are either male or female. Each room will have a coach assigned to monitor and coordinate activities, this includes room inspections.**

Check-in:

When we enter the hotel students will go to a designated location to wait for keys. At that location students will need to be very quiet as to not disturb the other guests. The room captains will be given the room keys to distribute. Often each person will have a key. If this is not the case, each room will need to designate who has the key.

Students will proceed to the rooms as soon as key distribution is complete. If your room is not ready your luggage will be put in another room until your room is ready. Upon entering your room you should complete the room inspection form and have ready for the coach.

Often there is free time in the hotel to get snacks, play in the game room or swim. If there is a pool a coach must be present to swim or use the hot tub. Appropriate attire is required. Please check with a coach if there is any question.

Parent Responsibilities

Parents are an integral part of our team and are very important to our continued success. Parents are also a key factor in the motivation and dedication of their student. Supporting their son/daughter in all aspects of their team involvement is key to them getting the most out of the program. Parents should become active in the RPM group led by Mr. and Mrs. Ciance

Parents have several responsibilities, they are:

- To provide timely transportation for the student. Making sure that they are at the required events on time and ready to participate. Often we will leave for a competition very early in the morning to facilitate transportation. Parents are expected to have the student at the designated location at the prescribed time. We will not delay transportation.
- Upon return from a event parents are expected to provide transportation at the designated time. Late transportation causes an inconvenience to all involved.
- Parents are expected to assist their student in all fundraising activities.
- Parents are expected to participate in the Brunswick Eruption by assisting with the food service and other committees that also serve as a fundraiser.
- Parents are expected to provide transportation to local events, including the Breakfast Club, Saturday work sessions, after school sessions and local competitions.
- Parents are expected to provide accurate medical information and to keep coaches informed of all changes.
- Parents are also expected to help the student with spending money as is appropriate when we are at events or competitions.
- Parents are encouraged to participate in team activities whenever possible.
- Parents will participate in the “Breakfast Club” activities by forming teams that will provide breakfast and lunches on selected dates and selected activities.

College & Career Opportunities

The Raider Robotix FIRST program is an excellent way to explore the career of engineering. During this program students will be exposed to many principles of engineering and the mentoring skill of the engineers from BMS. We recognize the possibility that not all students will go to careers in engineering. It is our goal however to expose all the students to technological careers including but not limited to engineering.

There are many scholarship opportunities associated with the FIRST program. The coaches will be providing information regarding these as soon as they are made available. There is also information listed on the FIRST web site at USFIRST.ORG.

During your Junior year, it is important that you concentrate on the skill need to score high on the ACT and SAT tests as many scholarships and college admittance is based upon these scores, as well as high school transcripts. The higher the test scores and GPA, generally, the more funds that are available for your education.

FIRST offers over 8 million dollars in scholarship opportunities to team members annually. The schools involved can be seen at this link - <http://www.usfirst.org/robotics/2004/scholarshipsummary.htm> .

Scholarship opportunities for the new FIRST Robotics Competition season are typically finalized by September 30 of the previous year.. Scholarship offerings posted on the FIRST website by September 30. Deadline for scholarship application submissions is typically early to mid March. Scholarship contributor selects recipient by EARLY APRIL 2006 and notifies FIRST of recipient's name and team number. Scholarship recipients will be recognized at the FIRST Robotics Competition Championship in mid April.

E-Mail

All students are expected to have an **active e-mail address**. This form of communication is by far the fastest and most efficient mode of communication. Please provide your address to the coaches for the data base records.

If you do not have Internet access at home to participate in e-mail, you will be assigned an e-mail buddy. The e-mail buddy will pass on any important messages via the phone.

It is suggested that you monitor your e-mail twice a day, early in the morning (before 7:00am) and late evening (after 9:00pm).

There are many free e-mail services please check with the coaches if you have any questions.

Other Competitions

Our team is often invited to pre and post season competitions. Our involvement in these activities will depend upon timing and the availability of our team. Most of these competitions are local and will not involve organized travel to any great extent, as they are one-day events.

This is the opportunity for our “Rookies” to get the feel of real competition before the season starts. Often this is also the opportunity for our drive team to get practice and rookie drivers to see what it is all about.

Website

The World Wide Web has become a powerful tool and influence in the world today. This concept was recognized by our team several years ago when we started the famous “forums” where teams from all over the FIRST organization meet and share information.

www.Raiderrobotix.org, our site, is recognized as one of the best sites in the FIRST organization. Always innovative, and always serving the common good of FIRST our site is the site to gather information on a “state of the art” format.

You can visit our website at www.raiderrobotix.org . Team news, Pictures, Videos, Useful links and other important information will be available there. We also have a team forum which can be visited at <http://forum.raiderrobotix.org/> .On the forum we will have active discussions about various team activities.

Appendix- Awards Achieved By Raider Robotix (updated 4/06)

2006 NV Delphi "Driving Tomorrow's Technology"
2006 NV Regional Champion
2006 NJ Regional Champion
2006 NJ Regional Chairman's Award
2006 NJ Woodie Flower's Award
2005 SC GM Industrial Design
2005 SC Regional Finalist
2005 NJ Delphi "Driving Tomorrow's Technology"
2005 NJ J&J Sportsmanship
2004 NJ Leadership in Controls
2004 MD Engineering Inspiration Award
2003 MD Judge's Award
2003 NJ Regional Champion
2003 NJ Judge's Award
2003 CMP Finalist
2003 CMP Champion - Curie Division
2002 CMP Division Champ - Archimedes
2002 NJ Finalist
2002 NJ Engineering Inspiration Award
2001 NJ Xerox Creativity
2000 N1 National Champions
2000 NJ Xerox Creativity Award
2000 NJ Best Offensive Round
2000 NJ Regional Champion