TABLE OF CONTENTS

ADMINISTRATIVE / MATERIAL HANDLING / SHIPPING SECTION

1	FIRST - Contact Information	.5
	1.1 Team Support	.5
	1.2 Team Information Management System	. 5
	1.3 FIRST Website	. 5
	1.4 Control System and Speed Controllers: Innovation First	. 5
	1.5 Engineering	.6
	1.6 Mentoring & Team Organization	. 6
	1.7 Providing Corporate Sponsorship to FIRST	.6
2	Using The FIRST Logo	. 6
3	How to Volunteer for FIRST	.6
4	Event Overview	.6
	4.1 Judges' Yearbook Page	.7
	4.1.1 Purpose	
	4.1.2 Requirements	
	4.1.3 Submission Deadline	
	4.2 Mascots and Team Costumes	
	4.3 Event Information from the Website	
	4.4 Competition Agendas - Samples	
	4.4.1 Regional Competitions	
	4.4.2 Championship Agenda4.5 Registration	
	4.5 Registration	
	4.5.2 Registration Packet	
	4.6 Team Social	
	4.6.1 Requirements	
	4.6.2 Deadline for Attendance Count	
	4.6.3 Regional Socials	
_	4.6.4 Championship Wrap Social	
5	Team Accessories Checklist	10
6	The Pit	11
	6.1 Courtesies and Rules	11
	6.2 Administration Station	12
	6.3 Pit Map	12
	6.4 Team Stations	
	6.4.1 Station Numbering	
	6.4.2 Space Regulations	
	6.5 Aisles	12

	6.6 Suggested Equipment	12
	6.7 Parts Exchange	12
	6.8 Announcer	12
	6.9 Robot Traffic Flow	13
	6.10 Queuing	13
	6.11 Property Security	
	6.12 Lost and Found	
	6.13 First Aid	13
7	Team Spirit	13
	7.1 Team Styl'n	13
	7.2 Banners and Flags	13
8	Gracious Professionalism	13
	8.1 Donated Software	14
	8.2 Saving seats	14
	8.3 Fundraising ideas	
	8.4 Competition Spirit	14
9	Competition Overview	14
	9.1 Safety Glasses - They do no good on foreheads.	14
	9.2 Practice Rounds	
	9.2.1 Time Slots	
	9.2.2 Courtesy9.3 Official Robot Inspection	
	9.3.1 The Inspection Sheet	
	9.3.2 When does Inspection Take Place?	15
	9.3.3 Procedure	15
	9.4 Competition Matches	15
1) Hotel InformatIon	15
	10.1 Regional Hotels	15
	10.2 Championship Hotels	16
1	1 Local Stores - Websites	16
12	2 Crate Information	16
	12.1 Crate Specifications	16
	12.2 Crate Limit	16
	12.3 Crate Labeling	17
	12.4 Crate Contents (Required)	17
	12.5 Crates in Pit Stations	17
1.	3 Shipping Information	17
	13.1 Definitions	17
	13.2 Replacement Parts or Kit of Parts Shipments	
	13.3 Shipping Your Robot	

13.3.1 Shipping to Your Initial Event	
13.3.2 Initial Event Ship Deadline	
13.3.3 Robots Ship from Event to Event	
13.3.4 Back-to-Back Events	
13.3.5 At Drayage Delivery Deadlines13.3.6 Delivery Receipts: Verify and Document your Robot Shipment	
13.3.7 Labeling Your Crate(s)	
13.3.8 Customs	
14 FedEx Freight System / Donated Shipping	
14.1 FedEx Weight Limit	19
14.2 Shipment Insurance	19
14.3 International / Unusual Shipments	19
14.4 How it Works	
14.5 What to do	
14.6 Track Your Crate	
15 Drayage (Material Handling)	
15.1 Definition of Drayage Company	21
15.2 Drayage Contact Information	
15.3 The Drayage Company: Functions and Services	
15.4 Why Must Teams Use The Drayage Company?	
15.5 Drayage Company Regulations	21
15.6 Weight and Rates Structure	
15.7 Drayage Costs - FIRST	
15.8 Drayage Costs - Teams	
15.9 Outbound Shipments from the Drayage Warehouse	
16 Generic Table of Contents	

TEAM NOTES

<u>1 FIRST - CONTACT INFORMATION</u>

You can reach FIRST via phone, fax, mail, and e-mail, or get information from our website. The office is open Monday through Friday from 8:30 a.m. to 5:00pm, EST. *During the design and build time, Team Support will extend phone hours to 6 p.m. EST.* Keep the time zone in mind when placing a call.

Be sure to provide your team number. Refer to the sections below for the appropriate help resource.

Phone Extensions: Press the **#** key, then the extension number.

Mailing Address:	Team Support e-mail Address	Phone:
FIRST		(800) 871-8326 OR (603) 666-3906
200 Bedford Street	frcteams@usfirst.org	Fax:
Manchester, NH 03101	6	(603) 666-3907

<u>1.1 Team Support</u>

E-mail Subject Line: Include your *t*eam number and short reference, please. E-mail questions or concerns to frcteams@usfirst.org. Write a detailed message. This may be the best way to get a quick answer to your question. It saves time and provides information for a researched, more accurate answer.

Phone: 800-871-8326 *Phone Option 1* on the phone menu, for help and answers to questions regarding administrative or team concerns.

Competition Questions: If you leave a voice mail, make it short and detailed and include your team number, e-mail address, and phone number. Team Support will research and return your call or send you an e-mail.

Extended hours for Design and Build phase: (January 6 through February 18) Team Support will be available to answer your questions until 6 p.m. EST.

1.2 Team Information Management System

Always keep your team information up-to-date. Your Main Contact has the password and Logon and can access the system to make changes. FIRST uses this system to e-mail team contacts, find teams' shipping address/account information, and gather event counts to prepare for events. If your phone numbers and addresses are incorrect, you will not receive information or materials. This is especially crucial during vacations, so make sure you include home address, phone, e-mail address also.

Once you have established your team partners (sponsors), remember to adjust your twenty-one (21)letter maximum "short team name." Whatever you put in this field will appear on the scoreboard.

1.3 FIRST Website

Visit FIRST at its World Wide Website at <u>http://www.usfirst.org</u> to access periodic rules updates, check deadlines and dates, and to find answers to administrative concerns. The website also provides links to home pages set up by teams involved in the FIRST Robotics Competition (FRC). If you have a team-related web page, you can post it via our Team Information Management System as part of the registration/maintenance process.

Team Updates: Questions and answers about rules will be made public in a periodic series of updates on the FIRST website (<u>www.usfirst.org</u>), *Documents and Updates*. We will post Team Updates on *Tuesdays and Fridays*. The identity of teams submitting the questions will not be made public unless they are posted on the web by the team. Please review them to get the most up-to-date rules information.

1.4 Control System and Speed Controllers: Innovation First

Contact INNOVATION First Inc. for help with items such as: Operator Interface, Robot Controller, Radios, Speed Controllers, and Relay Modules.

Phone: (903) 454-1978. To contact them via e-mail, visit their website: www.innovationfirst.com

1.5 Engineering

Phone: 800-871-8326, phone Option 2.

Technical issues, playing field construction information, game rules, and kit parts replacement / **shipment information.** Please do *NOT* contact FIRST Robotics if you are having technical problems with the Innovation First components. See above for INNOVATION First contact information.

Extended hours for Design and Build phase: (January 6 through February 18) The Engineering Department will be available to answer your questions until 6 p.m. EST.

1.6 Mentoring & Team Organization

Sign up to mentor or receive mentoring through our on-line Registration / Team Information Management System. Use the event map on the website for mentoring information and connections.

1.7 Providing Corporate Sponsorship to FIRST

Please contact Dia Stolnitz, Director of Development, for information. 800-871-8326, Ext. # 406 or dia@usfirst.org,

<u>2 USING THE FIRST LOGO</u>

We encourage teams to develop and promote team identity. It is a great way to help FIRST judges, announcers, and audiences recognize your team at the competitions, and it is also a way to help you create a "buzz" about your team in your community.

You have incredibly creative opportunities in terms of designing your own identity. Every year we see great examples of how teams "brand" their efforts. These branding activities are a wonderful way to include students from art, communications, computer, and language arts classes in your team effort. We see incredible team logos on robots, t-shirts, hats, on websites, banners, fliers, and giveaways.

As you manage your own promotion, you may want to incorporate the FIRST logo in what you do. Because our mark is registered, both name and the geometric logo, we have a few guidelines for you to follow when using the FIRST logo:

- Use our logo in a manner that is positive and promotes FIRST.
- Use the FIRST logo without modification. This means that you will use our name and the circle, square, and triangle as you see it on our website or letterhead. You can use it in red, blue, and black, or in black and white.
- If you have an interest in modifying our logo, do that only when you receive our permission. We are happy to talk with you about modifications after you submit a written request letting us know why you want to modify the logo; how you plan to do it, and where you plan to apply it. Send an e-mail request to Lori Cohen, Director of Marketing and Communications, at lcohen@usfirst.org.
- All Teams and sponsors must obtain approval from FIRST prior to incorporating our logo in any advertising. E-mail requests to Lori Cohen for approval. Direct all questions and requests for approval about use of the FIRST logo to Lori, by e-mail or by phone at 800-871-8326 #410.

<u>3 HOW TO VOLUNTEER FOR FIRST</u>

Each Competition event depends on an abundance of volunteers with a broad spectrum of talents to support operating needs and competition demands. If you have time, we can use your help. Please use our website for information about volunteering and signing up on line.

4 EVENT OVERVIEW

This section gives a general summary regarding mascots/uniforms, recommended items and equipment for teams to bring, Pit rules, event schedules, registration, practice rules/time slots, and robot inspections. Please read the following to get a "feel" for competition schedules, registration procedures, practice times, and matches.

4.1 Judges' Yearbook Page

The Yearbook Page is a team overview page. Complete the Yearbook Page via the website before the deadline of February 21, 2003. FIRST will post this project and format as the competition season nears.

4.1.1 Purpose

The Yearbook Page submission is a tool that:

- Provides a common starting point for judging each team and helps provide judges with some insight into each team's workings, history, and robot.
- Makes the judging more efficient.
- Provides team data for FIRST and its archives.

4.1.2 Requirements

- Use the specified format and submit on-line. FIRST will discard deviations from the format.
- Insert a single photo in the designated spot. The requested digital picture of the robot, or the team and robot, provides a visual recollection for the judges as well as a picture we can archive on disc to use for media coverage and the awards ceremony at the Competitions.
- The Main Contact for each team will receive instructions and required format for filling out the form via the website. To ensure proper archiving, carefully follow the specific guidelines.

4.1.3 Submission Deadline

February 21, 2003

4.2 Mascots and Team Costumes

Please make sure that mascot and team costumes are safe for the wearer as to vision and movement and are comfortable and cool enough to prevent fainting and dehydration.

4.3 Event Information from the Website

To ensure that teams have the proper Regional information for their event, download Regional sections from the FIRST website for the specific events they will attend. These sections are only available on the FIRST website, and contain critical event-specific information. Please familiarize your team with this overview so all team members understand the routine and rules.

4.4 Competition Agendas - Samples

For event-specific agendas, refer to the website once competition dates draw near. You will receive the actual agenda in your registration packet at each event.

4.4.1 Regional Competitions

Thursday	Team arrival. Pit usually opens about 8am Registration upon arrival and before noon Practice Rounds Official Weigh-in and Inspection
Friday	Seeding (qualifying) matches Awards Team Social
Saturday	Continued Seeding (qualifying) matches Elimination Matches Awards

4.4.2 Championship Agenda

Thursday	Team arrival. Pit usually opens about 8am Registration upon arrival and before noon Practice Rounds Official Weigh-in and Inspection
Friday	Seeding (qualifying) matches
Saturday	Continued Seeding (qualifying) matches Elimination Matches Award Ceremony Wrap Social

4.5 Registration

At each event, *an adult member* of each team must register *by noon on the first day of the event* at the Administration Table located in the Pit Area. Please read the following information carefully.

4.5.1 You Must Turn In Consent / Release Forms

By choosing to attend or participate in the 2003 FIRST Robotics Competition events, each person grants FIRST permission to use all photographs and/or video footage. Treat the Robotics Competition like any other school activity requiring parent/ legal guardian consent.

- Assign someone to take care of this project ahead of time. Do not leave it for the last minute!
- You cannot register without a form for each and all team members attending the event(s)
- Read below for instructions and requirements:

Regional Events	Championship
 Download the <i>FIRST Consent and Release</i> form from the FIRST website. Fill in your team number on the appropriate line (lower right hand corner) as well as the events to which the team is traveling. Make copies, with above information, for all team members traveling to an event. Have each team member fill one out and sign it. <i>Team members under eighteen must have a parent or legal guardian sign their forms</i>. 	NEW: Use the regular FIRST Consent and Release Forms. Bring completed forms for those persons attending only this event We need completed forms for all team members. If their forms were turned in at another event, they do not need to fill out another.
 5. Collect the forms, clip them together, and bring them to Registration at the Pit Admin. Table <i>at your first event of</i> <i>the season</i>. 	
6. NOTE: If <i>other</i> team members attend events after the first event, present those forms at subsequent events.	

Do not forget these forms. We will not have extras. You cannot register without them.

4.5.2 Registration Packet

Upon receipt of the team's consent/release forms, each team will receive an event-specific registration packet containing:

Pit Map:	Pit layout showing team, parts replacement, inspection, and weigh/size areas, the traffic flow, and Pit Administration area.
Practice Times list:	Designates practice times for all teams.
Team Operator Badges:	These are for the 2 operators, 1 human player, and 1 mentor.
	The mentor can be a student or adult, but he/she cannot score points or operate the robot.
Team List:	List of competing teams by number, official name, and state.
General Information Sheet:	Helps clarify the event process.
Agenda:	Provides an overview of the competition schedule.

4.6 Team Social

The team social is a great part of the competition celebration. Not all events have a Team Social. If your does, it will be informal and entertaining! They usually take place after the Awards Ceremony on Friday evening and include food, fun, and an opportunity for teams to unwind and get to know each other in a relaxed environment. Please read below for information and instructions.

4.6.1 Requirements

In order to plan for the socials:

- **Head Count:** Prior to the deadline, Main Contacts must go on line to the team's Registration/Information Management System record and enter the team's attendance number. (If the team will be attending more than one event, enter a number that reflects the average of those attending those events.)
- **Chaperones:** Each attending team must have one (1) responsible, adult chaperone for each ten (10) students.
- Team Conduct: All team members should conduct themselves with gracious professionalism

4.6.2 Deadline for Attendance Count

Provide the event attendee information, on line, no later than February 11, 2003 (5:00pm, EDT). If you are attending more than one event, please average the count for a good approximation.

4.6.3 Regional Socials

Check your regional agenda for time and place. There is no charge and "come as you are from the competition" is the dress code. Remember that your behavior reflects the ethics of your team and sets the tone for the activities. We expect the best from our teams, because they are the best!

4.6.4 Championship Wrap Social

This event takes place after the Awards Ceremony on Saturday evening. Please refer to the Championship Event Section on the web.

5 TEAM ACCESSORIES CHECKLIST

This list provides suggested items your team may want to / must bring. Replenish items between events. <u>TOOL BOX ITEMS</u> <u>ADDITIONAL ITEMS</u>

SAFETY GLASSES are required. Bring enough for all team members & your visitors Adjustable crescent wrench Allen wrenches Ball driver set / Nut driver set Batteries and Charger Box cutter C-Clamp, large, medium, small Cutters De-burring tool Dremel tool/accessories Drill bit set Drill - cordless w/charger Duct tape Electrical tape Flashlight Flat Screwdriver, large - medium - small Hack saw and blades Hammer (ball peen & brass) Heat gun "Leatherman" tool Level, small Lithium grease, spray can Lock tight Magnet on a stick Needle nose pliers - medium, small Open end and boxed end wrenches Paint brush Phillips Screwdriver, medium - small Pliers, - large, small Power Outlet Strip / Extension cord (2) Power Screwdriver Saber Saw/wood & metal blades Sandpaper - various grits Screws - nuts - washers Shrink tubing Socket set - 1/4", 3/8" drive Soldering iron, solder, solder wick, flux Spare parts Super glue / stick glue Square - small, medium Tap & die set/assorted taps Tape measure / ruler Tie Wraps / Connectors Tin snips Tweezers / scissors Vice grip - large, small Volt meter WD-40 / Lithium grease, spray can Wire terminal crimpers / Wire strippers X-Acto knife and blades

Release Forms for all team members! Banner / Corp. signs & flags Cart for robot Clock Dirt Devil - vacuum Disposable camera / extra film Drop light Epoxy File folder box for paperwork Hand truck Laptop / software / cables / floppies Medical Release Forms Message Board - dry erase marker set Notepads / spiral notebook / clipboard Paper / Post It Notes Paper towels / rags Pens / pencils / sharpies / markers Pit station monitor / clean up schedule Portable printer Registration Papers - completed release forms Rubber bands Rule Book and updates Schedule to set up and break down pit station Small broom Small foldable seats Small trash can, trash bags Spray cleaner Stapler / staples Storage box - trinkets & trash (buttons) Tape: Clear / masking / duct Team roster Upright storage bins Water cooler / cups or water bottles Ziploc bags ESSENTIALS 1st Aid Kit Advil / Aspirin / Tylenol Alcohol Prep Pads / 3M First Aid tape Band-Aids / Blister kit / Ice Bag Cough drops / sore throat medicine Extra – toothbrushes / hairbrushes / combs Extra - travel size deodorant/razors Eye wash and drops Hand sanitizer / Liquid Soap Feminine products Insect sting medicine / OFF spray Kleenex / Cotton Balls / Wet ones / Q-Tips Neosporin Pepto-Bismol / Imodium AD Small Sewing Kit Sunscreen / Sunburn Spray / Aloe Vera

6 THE PIT

Teams spend a lot of time in the Pit working on their robots. It also houses the spare parts area and the inspection station. It is important to use thoughtful manners and true team spirit here since quarters are equal, but are often cramped. Get to know other teams, help each other when you can, and keep the aisles clear. Time is short, and help may be right "next door" in the adjacent Pit station.

6.1 Courtesies and Rules

The Pit is where the behind-the-scenes action is. The FIRST Staff and volunteers want you to enjoy the competition. Please read and follow the rules below so everyone can work and compete in a safe, friendly, sportsmanlike, and orderly manner.

Battery Safety:	Charge in an open, well-ventilated area.
(Sealed Acid Lead)	Do not charge near an open flame or near equipment that may produce sparks. Do not use smoking materials in the battery charging area.
	Charge in an upright position. It is not safe to charge the SAL battery in an inverted position.
Fire Extinguishers:	Located at the Pit Administration Station and on the Playing Field.
Grinding / Painting:	There will be no grinding or painting at pit stations. Designated grinding and painting stations are available to teams.
Pit/Machine Shop Hours:	Specific hours are necessary to provide teams with equal work time. Please be aware of the opening and closing hours of the Pit and Machine Shop posted on the agenda you receive in your Registration Packet. The Pit Administration staff will advise you of corrected hours.
Noise:	There will be no loud audio systems, whistles, and blow horns in the Pit Area. They prevent teams from hearing important announcements, can be annoying, and can cause hearing loss.
Open Flames:	No open flames are allowed at the pit stations.
Pit Station Crowding:	Please stay within the area allotted to your team. FIRST reserves the right to limit the number of team members in your Pit station. If the pit area becomes too crowded for machines and teams to move back and forth to the field safely and quickly, we will request that some team members leave the area.
Robot Operation:	Operate robots on tether only in Pit area.
Safety Glasses/Goggles:	All team members and onlookers must wear safety glasses in the Pit and on the playing field. If you wear glasses, you must wear safety goggles over them. Teams are required to bring enough to supply its team members and its guests.
Sales:	Because of site regulations/contracts, FIRST cannot allow teams or individuals to sell items, such as T-shirts, pins, etc., at any events.
Two-way radios:	These are not allowed in the Pit or near the playing field since they may interfere with robot operation and cause accidents.
Welding/Soldering/Brazing:	These operations are prohibited at the pit stations. The machine shop will supply these services.

6.2 Administration Station

The Pit Administration Station is centrally located in the Pit area. FIRST staff members and/or volunteers run this area to help teams and visitors. Come to the Pit Administration station to:

- Turn in your team's Consent/Release Forms.
- Register and receive your registration packet Check your event agenda in your packet for the Pit opening/closing time for each event.
- Notify a staff member that the team is ready for its initial robot inspection.
- Get answers to most questions
- Ask about lost and found articles
- Report an illness or injury

6.3 Pit Map

Find this in your registration packet. It shows team location, robot traffic flow, First Aid Station, Replacement Parts Area, Inspection Area, and the Pit Administration Station.

6.4 Team Stations

These designated spaces help organize team placement and help team members, judges, and visitors find teams easily. Please keep your numbers visible and aligned. They are set up to be as equal as possible.

Each team's pit station will have a table and power outlet.

6.4.1 Station Numbering

FIRST places team numbers on poles and aligns them for easy station identification.

6.4.2 Space Regulations

Each team is allotted the same amount of workspace; the size may vary from site to site. Please keep your equipment and team members within this area and do not allow spillage out into the aisle or into undesignated space. It is not gracious to expand your space. If your team is too large for the allotted space, encourage your team members to leave the area and take turns scouting other teams and/or watching the matches.

Do not add to your space by setting up in another area of the Pit.

6.5 Aisles

Each team has an allotted pit space. It is extremely important to keep aisles clear for safety reasons, judging accessibility, robot mobility, courtesy, and maintaining competition schedules. Keep aisles clear. Please advise team members not working on the robot to watch the practice rounds or competitions. Keep chairs and equipment out of the aisles. Sit in the audience, not on the floors or in the aisles.

6.6 Suggested Equipment

We suggest you bring the following:

- Extension cord, heavy duty and at least 25 feet long.
- Power strip to make best use of your power drop.
- Other items as suggested on the *Team Checklist* in this section of the Manual.

6.7 Parts Exchange

The Parts Replacement area is located in the Pit. The parts available at events are limited. Refer to the "Robot" section for more information and the Pit Map for its location.

6.8 Announcer

Each event has a Pit announcer whose duty is to coordinate the queuing (lining up) of teams to the practice or competition lineups. Please do not ask the announcer to make frivolous announcements.

6.9 Robot Traffic Flow

There is a pre-determined traffic flow pattern set up to maximize efficiency of the team/robot ingress and egress of the competition areas. Refer to the Pit Map. The queuing team maintains this pattern at each event; please follow it to ensure an efficient line up for practice and competition.

6.10 Queuing

The Pit announcer and volunteers strive to maintain schedules with a system for maintaining timely practice and competition matches. You may want to designate team members to be your queue specialists to carefully watch the schedule and alert the team when its turn is near. They should:

Look at the Pit Map to find the pre-set traffic pattern for each event.

- Mark practice and competition schedules with your scheduled practice/match times.
- Listen carefully for the queuing announcements.
- Line up your four (4) competing team members and robot when your team number is announced

6.11 Property Security

There have been occasions when items such as cameras and laptops have "disappeared." Use common sense and do not leave such valuable items unattended.

- Neither the site nor FIRST is responsible for theft.
- Designate a representative to remain in the Pit during team absences, or take valued items with you.

6.12 Lost and Found

If you find an article or lose one, please come to the Pit Administration Table to fill out a "Lost Item Report," or turn in the article you find. We try hard to return articles to owners during events and after the season.

6.13 First Aid

There will be an EMT or Nurse in the Pit area to assist with injury and illness. Refer to the Pit Map for the First Aid Station location. The Pit Administration staff can dispense band-aids only.

7 TEAM SPIRIT

Competing as a team is fun as well as rewarding. Part of the pleasure and reward of being a team member is the way the team stylizes itself with team T-shirts, trading buttons, hats, cheers, cheerleaders, and costumes

7.1 Team Styl'n

When deciding on a team name or acronym, consider how you can work a theme around it to make your team more fun and recognizable. Refer to the "Using the FIRST Logo" section for use clarification.

7.2 Banners and Flags

Sponsors provide FIRST with banners so we can display them in specified areas as a way of thanking them for their generosity. We encourage teams to bring team flags and/or sponsor banners, but we ask that you adhere to the following:

- Do not use them to section off seating. Saving group seats is not permitted.
- Hang them *in your Pit station only*, not on the Pit walls.
- You may carry them to the competition area, but please do not hang them there. This banner area is designated for official FIRST sponsors.

8 GRACIOUS PROFESSIONALISM

You will hear this expression often throughout your involvement in FIRST Robotics. One of our main goals is to encourage all team members to conduct themselves with consideration, sharing, and kindness. We hear heartwarming stories of teams sharing parts, helping to build and/or repair competing robots,

and helping rookie teams avoid preventable pitfalls. These are examples of some side benefits of being involved with this organization are. Please read the following sections for areas that will help further the success of FIRST and its teams.

8.1 Donated Software

Software companies donate software to FIRST teams, and we consider it as part of the Kit of Parts. They provide it with the understanding that the teams will read the licensing agreement and comply with their rules. Install the software on *one* computer only. Think about which computer will be the most convenient and appropriate for team use

8.2 Saving seats

Sitting together in a group during competition rounds makes the game more exciting and fun. Since very often there is not enough seating to accommodate everyone, there has to be a policy regarding seating. Teams are not allowed to save seating space. It is not gracious or fair to hang banners or ribbons to designate such an area. Banners or roping, etc, will be removed and thrown away.

Take turns sitting in the bleachers. When you see there is a crowding problem, leave after your team's match and return later for another few rounds.

8.3 Fundraising ideas

There is some very unique fundraising going on within FIRST teams. If your team has any ideas to share and help other teams:

- 1. Make sure you document them in your Chairman's Award submission.
- 2. Please e-mail your ideas to <u>frcteams@usfirst.org</u> so fellow teams can share your innovations in profitability. It is a way of building on and expanding Gracious Professionalism.

8.4 Competition Spirit

We ask that you choose to bring attention to your team in ways that are in good taste and in the spirit of the competition. Please do the following:

- Refrain from obnoxious noisemakers and objects that can damage bleachers or floors.
- Do not tape or affix items or papers to walls, bleachers, floors, or other site areas.
- Make sure your Pit Station is clean when you leave the site.

9 COMPETITION OVERVIEW

This section provides general competition information and necessary details with regard to schedule, robot inspection, practice, safety, rules, regulations, and suggestions for teams.

9.1 Safety Glasses - They do no good on foreheads.

FIRST requires all teams to bring and supply safety glasses to its members and guests for each competition. Students and adult team members and guests must wear them to protect their eyes while working on the robot, when observing robot building/repair work, and while competing.

Operators, players, and mentors will not be allowed on the competition field without them.

Regular glasses do not qualify as safety glasses. You must use safety goggles over them.

9.2 Practice Rounds

Your information packet will contain a list of practice times and indicate on which field you will practice. *Teams cannot switch practice times*.

9.2.1 Time Slots

All teams will receive practice slots. Your team must be ready to practice at the designated times and on specified fields. If your team/robot cannot be ready for your practice time slot, you may send in the human player only or forfeit that practice slot. Teams cannot switch practice times.

9.2.2 Courtesy

In order to make the most of practice time, there will be a specified number of teams on a field during an assigned practice slot. Each team must be respectful of the other teams sharing the field during this time. Friendly interaction between machines is acceptable if all teams are willing. Unsportsman-like conduct on the part of a team during practice could result in loss of practice time.

9.3 Official Robot Inspection

To ensure that all robots are safely constructed and fall within the FIRST parameters:

- Inspectors will use an Official Inspection sheet for checking robots.
- Inspectors will ask *the students* questions during this process.
- Teams may practice on Thursday without completing the Inspection process.
- Robots must pass inspection before competing
- There may be random re-inspections before or after matches.

9.3.1 The Inspection Sheet

For an overview of what robot inspection will be like, please refer to the unofficial inspection sheet in the Robot section of this Manual. This will help ensure the safety of your robot's construction and will save time at the competition.

9.3.2 When does Inspection Take Place?

During events, FIRST staff and volunteers will be on site all day Thursday, until the Pit closes, to inspect machines. It is not necessary to wait until you are totally ready to begin, you can start the inspection process by going to the weigh/sizing station to document height/weight specifications. Inspectors can sometimes help find problems and provide suggestions during an early inspection.

9.3.3 Procedure

- Bring your robot to the Inspection Station when you are ready to begin. You are welcome to bring your robot for a partial inspection.
- Students must accompany the robot and be prepared to answer Inspectors' questions.
- Each time you modify your robot, you must ask for and be re-inspected.

9.4 Competition Matches

Once a team passes robot inspection, it is eligible to compete. On Friday morning, the Pit Manager will place copies of the Match List on each team's Pit table. This list is for both Friday and Saturday and provides information as to when teams will participate, with whom, and against whom. Teams often use the list for finding competing teams and scouting their strategies.

If your team is in the first four matches on Friday or Saturday, volunteers will ask you to line up before the Opening Ceremony. Matches begin right after its conclusion. The Pit Announcer and Queue Team will work together throughout the day to line up teams for competition matches and maintain the schedule. Pay attention to the schedule and announcements throughout the day to find out the number of the ending match before lunch and the designated last match of the day.

10 HOTEL INFORMATION

Please review the instructions on the website http://www.usfirst.org, before you attempt to reserve rooms for your team. Each FIRST team designates one person as its Team Travel Coordinator to manage this process.

10.1 Regional Hotels

FIRST and The Meeting Company work hard to secure safe, clean, and reliable hotels with special discounted rates for the FIRST regional competitions. This unified registration structure benefits the group as a whole by allowing everyone to receive discounted hotel rates. Refer to the current list of FIRST-recommended hotels for each Regional competition and for information and instructions for making hotel reservations for your FIRST team.

10.2 Championship Hotels

Please refer to the FIRST website for information regarding hotel and reservation information for the Championship event.

<u>11 LOCAL STORES - WEBSITES</u>

Use these URL's to locate stores in the vicinity of your hotel or competition site. Before you travel, print out directions from both the competition site and your hotel. Competition site addresses for each event are on the website. Once you have the store's home page, click on the "find a store," "store locator," or "location" for the one closest to your starting point.

Store	Web Address
Ace Hardware	http://www.acehardware.com/
CVS Pharmacy	http://www.cvs.com/CVSApp/cvs/gateway/cvsmain
Home Depot	http://www.homedepot.com/home.html
Kinko's	http://www.kinkos.com/
True Value Hardware	http://www.truevalue.com/
Kmart	http://www.bluelight.com/home/index.jsp
Lowe's	http://www.lowes.com/
Office Depot	http://www.officedepot.com/
Office Max	http://www.officemax.com/
Wal*Mart	http://www.walmart.com/cservice/ca_storefinder.gsp?NavMode=7
Radio Shack	http://www.radiosack.com/#
Rite Aid	http://www.riteaid.com/stores/locator/
Staples	http://www.staples.com/about/store/find/
Target	http://www.target.com/ targetgroup/storelocator/index.jhtml
Walgreens	http://www.walgreens.com/

12 CRATE INFORMATION

Build your crate so it is sturdy and falls within weight and height specifications. The Drayage Company determines if a crate meets the size and weight criteria and passes the information to FIRST.

NOTES: If a crate exceeds specifications, FIRST will not guarantee its security or delivery to the site.

The Drayage Company will round up to the next hundredweight if a crate exceeds 400 pounds and will charge accordingly. Refer to the website for specific event rates.

12.1 Crate Specifications

All Crates must:

- Weigh 400 pounds or less in order to avoid drayage overage charges
- Be sturdily built to prevent damage to your equipment
- "Sit" on 2 pieces of 4" by 4" lumber, spaced at least 28" apart. This requirement facilitates moving the crates with a pallet lift.
- Have a footprint no greater than 4' by 4' and be no taller than 5'10" (70") high. This maximum includes the 4" by 4" lumber mentioned above.

12.2 Crate Limit

FIRST recommends that each team ship only one crate. Each team has equal pit station space. Teams *cannot* have more than two crates at any competition site. This keeps team costs down and keeps Pit aisles, entrances and egresses clear and safe. If you ship an extra crate, it must also meet the specifications stated above, and *the team pays for all material handling costs for the additional crate*.

12.3 Crate Labeling

- Refer to the website for the printable label for the events you will attend. These are mandatory for each crate. Print four (4) for each event and each crate. Fill in your team number
- Place a clear air bill sleeve on each side of your crate and insert the labels. This will help your shipper. It also helps the Material Handling (Drayage) Company easily locate your crate at the warehouse and the competition site.
- Bring extra air bill sleeves, for shipping to the next event, in case yours get damaged during shipment.

12.4 Crate Contents (Required)

Include at least the following required items in the robot crate:

1 Robot

1 Complete Control system

2 Batteries Unplug, put electrical tape on the posts, and pack them in a small box separate from the robot.

12.5 Crates in Pit Stations

Pit space is limited, and we highly suggest and prefer that you do not keep your crate in your pit station. Your crate, team, and equipment must fit within the team's designated space.

NOTE: The aisles must be clear for safety sake as well as robot, spectator, and team movement. Team chairs must also fit within your station space.

If having a crate in your station repeatedly causes a disturbance, crowding, or aisle blockage, your crate will be removed and your team will pay for its removal.

13 SHIPPING INFORMATION

13.1 Definitions

Shipping	In this case, the term shipping refers to the transportation of your crate:
	a. To the Drayage (material handling) Company.
	b. From the Drayage Company to the next event's Drayage Company
	c. Home after your last event.
Bill of Lading	Otherwise known as a Material Handling Form. This is a receipt your carrier issues, promising delivery of the merchandise/items listed.
Ship Deadline	The robot crate must leave the team's possession, either by delivering or shipping to the material handling facility.
At Drayage Deadline	The latest date and time you can have your robot delivered to drayage warehouse facility.

13.2 Replacement Parts or Kit of Parts Shipments

There will be times we will have to ship something to your team. We require all teams to enter a FedEx or UPS account number as part of the registration system because:

- 1. We will not accept credit cards as a form of shipping payment.
- 2. FIRST ships replacement parts at the "Two-Day" rate. To prevent delays if you want something shipped faster, your team pays for express shipping on your account number.
- 3. If a team member does not attend a Kickoff to pick up the Kit of Parts, we need an account number to facilitate shipment from our system. The team absorbs the cost of Kit of Parts shipment to its site.

13.3 Shipping Your Robot

You will be shipping your robot to a Drayage Company because event sites do not accept or store team robots, crates, or toolboxes. *If you ship two crates, both must adhere to the deadlines.*

Teams are responsible for paying for *ALL* shipping charges at the time of shipment. Refer to the FedEx section below for specific information about free shipping to one Regional and the Championship.

Many teams have saved shipping costs by documenting their shipments as "Event Materials."

13.3.1 Shipping to Your Initial Event

- Locate drayage information for your event(s) on the usfirst.org website, Event section, Site Information.
- Print and read all sections relating to your events, especially the drayage sections. File each event in its own Manual section.
- Obtain the best shipping rate to the Drayage Company for your first event, if you are not using the complimentary FedEx ship. You will need the total weight of your crate and its contents for an accurate estimate.
- Make shipping arrangements well before the competition
- Obtain Bills of Lading from your carrier.

13.3.2 Initial Event Ship Deadline

ALL teams must ship their crate(s) by February 18, 2003, local time. This date and time applies whether you ship or drive your robot to drayage facility.

- a. *If you ship your robot*, obtain written proof from your shipper that shows the date and time that the shipper took possession of your crate.
- b. *If you drive your robot to the Drayage Company*, ask the company to provide written proof that shows the date and time you delivered your crate(s).

13.3.3 Robots Ship from Event to Event

- Teams cannot take their robots home between events. Refer to the Drayage section in this Manual and the Site Information section on the website for details.
- **NEW:** Robots must ship from event to event either:
 - a. Through Midwest Conference Services and their designated carrier.

OR

- b. Through the FedEx complimentary shipping. Bring the pre-printed air bills with you.
- Remember to print and bring shipping labels.
- There is no event on-site pickup. Crates will return to the Drayage Company and ship from the warehouse on Monday.

13.3.4 Back-to-Back Events

If you have chosen back-to-back Regional events, contact the Drayage Company to see if it can/will extend the arrival deadline. It is your responsibility to make all necessary arrangements.

13.3.5 At Drayage Delivery Deadlines

Each event has a deadline. Make your shipper aware of the deadline so you will meet the deadline. Refer to the Events section on the website for the arrival deadline for your event(s). The "*At Drayage*" deadline is the latest date and time your shipping company can deliver your robot to the material handling facility.

13.3.6 Delivery Receipts: Verify and Document your Robot Shipment

Read all rules regarding the shipment of your crate(s) and documentation of the shipment / drop for your initial event. These cut-off dates help ensure that teams have equal work time on robots and that the machines arrive at the drayage facility in time for delivery to the competition site(s).

NOTE: Teams will disqualify themselves from competition for failure to observe and document the adherence to the deadlines.

Verify your first event shipment only. Teams must ship from event to event thereafter.
 Administrative/Shipping/Material Handling © 2003 FIRST

- Ensure that your receipt clearly shows the date and time the crate(s) left your team's hands.
- Write your team number on the receipt and make a copy for your records.
- Address the envelope as follows, filling in your team number and the event. (Use *all capital letters*)

YOUR TEAM #, NAME OF EVENT YOU WILL ATTEND TEAM SUPPORT FIRST 200 BEDFORD STREET MANCHESTER, NH 03101

- Send your verification to FIRST. Mail it within 24 hours of shipment or delivery to material handling facility site *so that it arrives in New Hampshire within three (3) days*.
- Save your receipt copy, in case verification of delivery becomes necessary.

13.3.7 Labeling Your Crate(s)

NEW: Refer to our website for your downloadable shipping label. You will find one under each event.

13.3.8 Customs

Teams shipping to the Canadian Regional and international teams shipping into the U.S. should research requirements for going through customs well in advance.

14 FEDEX FREIGHT SYSTEM / DONATED SHIPPING

FedEx has again graciously and generously agreed to partner with FIRST and donate some robot crate shipping, via the FedEx freight system. Remember, this is a donation. Please use gracious professionalism when using this option.

Please follow the regulations. FedEx will ship ONE crate to:

- ONE Regional.
- The Championship
- Back home if you participate in one Regional or
- Back home from the Championship for teams registered for that event.

NOTES: FedEx does not pick up on Saturdays.

We cannot replace lost air bills and FedEx will not accept a hand-written account number for these donated shipments.

FedEx will pay for <u>one</u> Regional ship only. You cannot substitute a Regional for the Championship.

Refer below for International shipments and shipments from Hawaii, Alaska, Puerto Rico.

14.1 FedEx Weight Limit

Crates *cannot* exceed 600 pounds.

REMEMBER: FIRST pays drayage costs for one crate up to 400 pounds *only*. Teams pay the drayage cost in excess of 400 pounds, rounded *up* to the next hundredweight.

14.2 Shipment Insurance

FedEx does *not* insure complimentary shipments. If you want to insure your crate and its contents, obtain insurance through a third party.

14.3 International / Unusual Shipments

Teams in the following locations will receive e-mails as the season approaches. Shipping from these areas, via FedEx, may require extra instruction.

Canada: Because freight service is not offered within Canada, *FedEx is not able to provide the donation of shipments Intra-Canada* (within Canada.).

FedEx will donate only shipments that cross the Canadian/U.S. border or are within the U.S.

Teams must use an International Air bill to ship across the Canadian/U.S. border. This form is not provided in the Kit of Parts.

International Shipments: Teams must use International Air bills to ship to the U.S. and from the U.S. back home. Freight services are limited within England, Brazil, and Germany. These shipments require "2nd Day Air."

Use provided Air Bills for shipments within the continental U.S.

Alaska, Hawaii, Puerto Rico: FedEx Freight is not available in these areas and teams must check the "Second Day Air" box on air bills. Use International Air Bills when shipping to or from "home." These shipments require "2nd Day Air. "

Use provided Air Bills for shipments within the continental U.S.

14.4 How it Works

As a part of the Kit of Parts, FedEx will provide each team with three (3) air-bills only. Consider the following:

- Which event will give your team the most value for this donation?
- Is there enough time to make it to the event? FedEx will ship from one Drayage warehouse to another. FedEx does not pick up on Saturday and complimentary shipments do *not* get high priority.

14.5 What to do

Put the FedEx pre-printed airbills in a safe place and tell someone else on the team where they will be kept. *There* will be NO replacements. FedEx will not accept air bills with a handwritten account number for these free shipments. They have a common account number used for FIRST event shipments which makes it possible for FedEx to account for/keep track of FIRST team shipments.

- Fill out and place the airbill in a plastic sleeve and attach it on your crate. Make sure you follow all crate labeling instructions. Refer to "Crate Labeling" section.
- Keep a copy of the airbill for tracking purposes.
- To arrange a pickup, call 48 hours in advance to schedule by calling FedEx Freight Services at 800-332-0807. *NOTE:* You will need the account number from the pre-printed air-bill.
- Allow 3-5 days for shipment movements.

14.6 Track Your Crate

- Track your crate to ensure on-time delivery: Call the FedEx Customer Service Center at 800 Go FedEx, -(800) 463-3339, or use the FedEx website, www.fedex.com to make arrangements and track crate shipments. All tracking requires the air bill number.
- *Remember* to bring your FedEx air bills for the next qualified shipment. FIRST will *NO*T have replacement air bills.

15 DRAYAGE (MATERIAL HANDLING)

- Every team has to ship its competition crate(s) to the designated Drayage (Material Handling) Company for each event it attends. Teams are not permitted, under any circumstances, to drive or ship crates to competition sites. If a crate is labeled improperly, or if it does not meet required specifications, the material handler may refuse it.
- Well ahead of shipping time, make sure you check the Drayage Company's rates for an overweight (overage) costs for your event. Refer to all related sections below.
- **NEW:** Midwest Conference Services (MCS) is the designated Drayage Company for all events with the exception of the SBPLI Long Island Regional. Refer to the Long Island event section

15.1 Definition of Drayage Company

Drayage Companies are temporary warehousing companies that take in and document event materials. In our case, the Drayage Company receives team crates, documents arrival dates, then weighs and stores them until it delivers them to the event site Pit Stations on a specified date.

15.2 Drayage Contact Information

Refer to the website, Event Section, Event Site, for each event your team will attend for the name address, and contact information for the Material Handler. You can ask questions relevant to drayage particulars and deadlines.

15.3 The Drayage Company: Functions and Services

FIRST contracts with a Drayage Company for each event to provide the following services:

- Document crate arrivals. If a crate does not arrive by the specified deadline, teams can initiate tracking activities with the shipper.
- Perform complete material handling and storage at the warehouse until the event.
- Transport team crates to the competition site on the specified date.
- Deliver team crates to proper team Pit stations.
- Remove and store teams' empty crates during the event. **NOTE:** There will be no access to crates once they are removed from the Pit. Keep any necessary equipment at your Pit Station.
- Return empty crates to team Pit stations after competition on Saturday.
- Transport crates from Pit stations back to its warehouse after the competition.
- Load crates on designated shipper trucks and provide tracking services for the shipped crate.
- Educate and assist teams in the shipping process

15.4 Why Must Teams Use The Drayage Company?

- 1. To document "out-of-hands" deadline compliance/delivery to the warehouse facility.
- 2. To provide a tracking system for team crates.
- 3. To provide robot storage prior to the event.
- 4. To ensure on-time crate delivery to team Pit stations at the competition sites.
- 5. To provide a staging location for outbound shipments and protect staff and teams from crowded load-in and load-out situations.
- 6. To comply with venue contracts prohibiting the acceptance of shipments on site.

15.5 Drayage Company Regulations

- All shipments must be prepaid. The Drayage Company will not accept Cash on Delivery shipments. Teams must take care of this with the carrier, in advance, prior to sending any shipment to drayage site/crate consolidation center.
- **NEW All teams' must pay for drayage in advance, or on site, prior to the competition**. If a team refuses to pay for freight overages, Midwest Conference Services will refuse delivery of the team's crate until payment is reconciled at the MCS Service desk. Once MCS receives payment, MCS will deliver the team's crate(s).
- **NEW Overages Payments**: MCS will accept credit card payment for drayage overages. (MasterCard, Visa, or American Express) If paying by a school check, it must arrive at MCS before the team participates in the event.
- **NEW** Teams must use FedEx *or* the designated MCS shipper for crates shipping from event to event. The final FedEx air bill is used to ship home from the Championship.
- **NEW** When not using FedEx, teams must make arrangements on site through the Midwest Freight Services desk via a Midwest house carrier.(Does not apply to SBPLI Long Island event.)
- **NEW** The material handlers are not allowed, and will *not* load your crate onto your vehicle.
- Shipments received without freight bills or specified unit counts on receipts will be delivered to team tables without guarantee of piece count or condition. When receiving freight, the Drayage Company requires that drivers submit *certified weight receipts* and reserves the right of refusal to unload such shipments unless they receive one.

- All shipments must have a Bill of Lading or Delivery receipt showing the following:
 1. Number of items, weight, and description of merchandise.
 - 2. All Items labeled per Regional event specification.
- The Drayage Company will not be responsible for damage to uncrated materials, materials improperly packed, any concealed damages, loss or theft of materials after crates have been picked up for loading out of the competition site.
- The Drayage Company will reweigh teams' material and charge accordingly if accurate weight is not provided. *For larger pieces of freight, it will use the DIM weight system to determine actual weight.* Call your drayage representative if you do not understand the DIM system.

15.6 Weight and Rates Structure

IMPORTANT: Drayage Companies weigh by the hundredweight and round up. Make a real effort to keep weight down to well below the hundred marks to allow for scale calibration differences. Scales should be available at venues to verify the weight of outbound crates.

Example: If your crate weighs 301 pounds, your charge will be based on four hundred pounds. *Refer to your event (Site Information) on the website for material handling rates.*

15.7 Drayage Costs - FIRST

FIRST will pay for the Material Handling (drayage) cost of *ONE* crate, *within criteria limits*, for each team for each competition in which it competes. Refer to *Crate Information, Crate Size, and Weight Specifications* section for specifics.

15.8 Drayage Costs - Teams

- The following will cost teams money:
 - a) Crates exceeding measurement or weight specifications.
 - b) Any additional crates. Teams pay entire drayage cost of additional crates.
- Each team must pay for any additional material-handling charges by the end of each competition.

15.9 Outbound Shipments from the Drayage Warehouse

The Drayage Company will bring all crates back to its warehouse on Saturday after the competition. Robots will be available for outbound shipping from the warehouse on Monday.

- All outbound shipping charges must be PREPAID
- Make sure that your crate is still fit for travel.
- Fill out a Material Handling Form (Bill of Lading) for each event; these are available through the Drayage Company before the competition or at the event.
- At the event, remove old shipping label. Attach the sleeved, pre-printed labels for the next event, to all sides of the crate...at a readable level.
- Make arrangements for the outbound shipment.
- **NOTE:** If this is your last competition and you want to take your robot home, make arrangements prior to the competition. *The Drayage Company will not load your crate onto personal your vehicle*.

16 GENERIC TABLE OF CONTENTS

