THE 1999 FIRST ROBOTICS COMPETITION

TEAM UPDATE #1

Date: January 13, 1998

PLEASE DISTRIBUTE THIS TO OTHER TEAM MEMBERS!

FIRST will provide rules updates and other important information to teams exclusively via the FIRST web site at http://www.usfirst.org/1999comp/TeamUpdates.

Please check the team updates portion of the web site on a regular basis to insure that your team does not miss critical information about The 1999 FIRST Robotics Competition. FIRST recommends assigning at least one team member the duty of keeping up to date on all team updates. This person or group should be responsible for distributing information contained in team updates to the appropriate team members.

IMPORTANT VICTOR 883 SPEED CONTROLLER INFO

Section 2.7.1 of The Robot incorrectly states that the muffin fans that are part of the Victor 883 speed controllers should be connected to power at the power input terminals of the speed controller. **This could damage the fan and should not be done.** FIRST is in the process of shipping transient voltage suppressers to all teams in order to allow the fans to be connected at the speed controllers' power input terminals. In the meantime, **teams should run a separate set of power leads back to the main battery power distribution block in order to power the fans.**

For more information about the Innovation FIRST Victor 883, and to order the Victor 883 online, go to http://www.innovationfirst.com/.

DUPLICATION OF THE MANUAL

A number of teams have reported difficulty in duplicating the manual due to the presence of the copyright notice. FIRST encourages teams to duplicate the manual for team use. Printers requiring written permission should be shown the following text:

Notice to Printers:

Teams are hereby permitted to make an unlimited number of reproductions of the 1999 FIRST Robotics Competition Manual for team use.

CORRECTIONS AND UPDATES TO THE MANUAL

Figure 1.1 in The Game section contained a mistake regarding the starting locations of the robots. Below is an updated Figure 1.1:

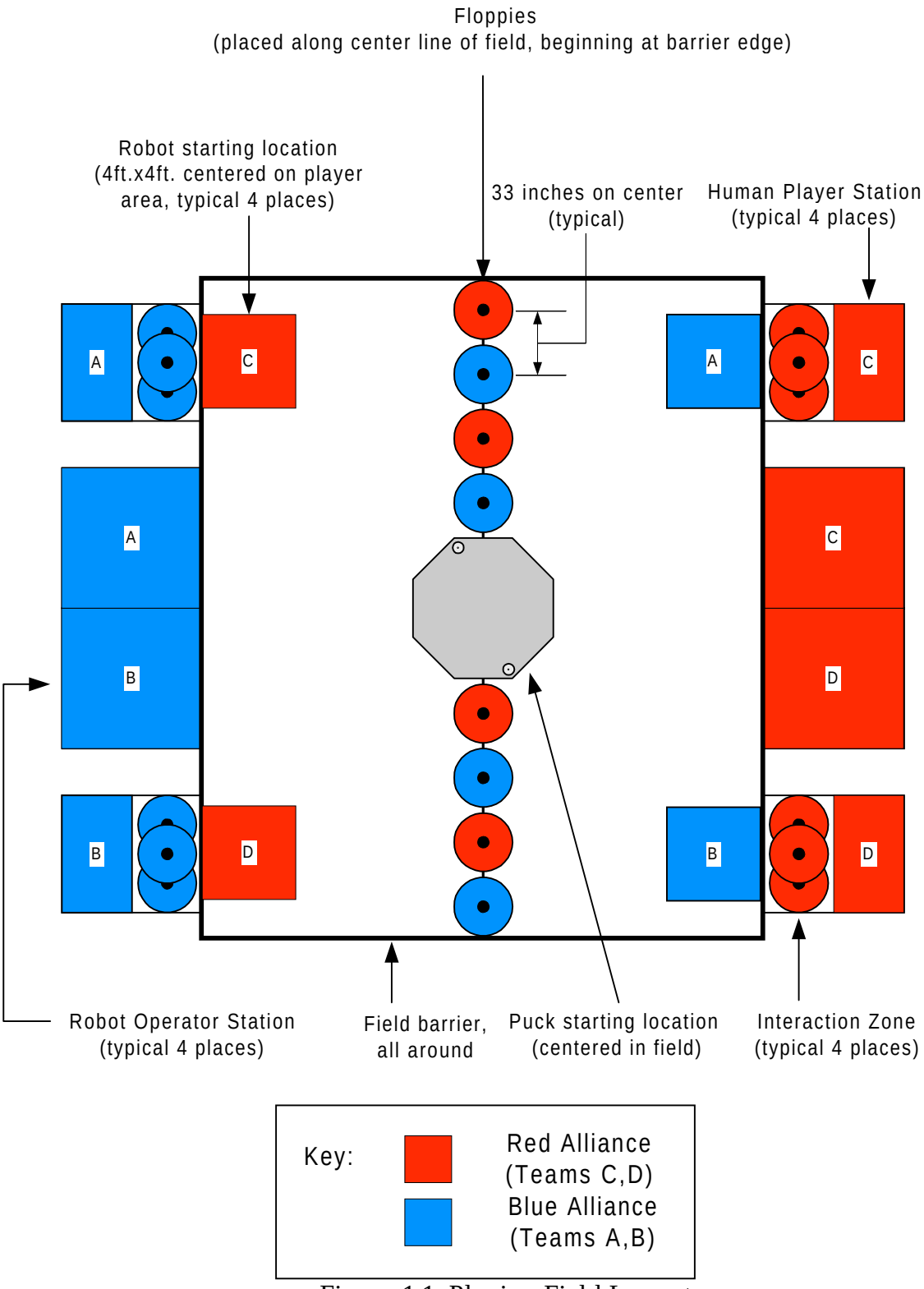

Figure 1.1: Playing Field Layout

The Awards section contains a typo on page 4. The winner of the 1997 Chairman's Award is incorrectly listed. The correct name of the team was "Delphi Interior and Lighting Systems & Pontiac Central High School".

The Red Rubber Sheet included in the kit was listed as 1/16" x 6" x 18". The correct dimension is 1/16" x 6" x 6".

The Field Bill of Materials (BOM) included with the Manual had some errors. Please refer to the updated BOM posted on the FIRST Web Site.

The manuals distributed at the Kick-Off contained a few assembly errors. Please discard the Introduction letters from Dean and Woodie that are printed on blue paper. Also, discard the reprint of The Robot section that appears part way through Appendix H of The Robot.

The latter portion of Appendix H in The Robot section was missing from the manuals distributed at the Kick-Off. Also missing was the documentation on floppy construction All missing information is included along with the rest of the manual on the FIRST web site at http://www.usfirst.org/1999comp.

RULES QUESTIONS & ANSWERS

Q1. At the Kick-Off, it was stated that floppies need to be at least 2" above the playing field in order to score 1 point. The rules state that the floppy must not be touching the surface of the playing field, but do not mention the 2" minimum height. Which is correct?

A1. The rules, as printed, are correct. There is no 2" minimum height requirement.

Q2. If a robot attaches itself to one of the posts on the puck, but is on the outside of the puck's perimeter, and off the floor, does it count as the robot being on the puck? Is there a minimum height that the robot must be off the floor to count as the tripler?

A2. Per Rule SC4 in Appendix A of The Game , as long as the robot is touching the puck and is a minimum of 2" off the floor, it counts as "on" the puck.. It does not matter whether or not the robot is outside of the puck's perimeter.

Q3. The sample floppy from the Kick-Off has a zipper, but the BOM and plans do not. Is this an oversight? Is the zipper required or optional?

A3. The zipper will be included on all floppies used at the Regionals and the National Championship. The zipper was implemented to ease the manufacturing of the floppies, and should not significantly alter the properties of the floppy.

Q4. Are we allowed to wedge another robot in order to tip it over?

A4. No. Per Rule V5 in Appendix A of The Game, intentional tipping is not allowed.

Q5. May our original robot be such that once we start competing, we drop a piece off which is still tethered and controlled by the other piece?
A5. Yes and no. You are not allowed to drop off and leave an object within the playing field. However, since you are suggesting this object will still be a part of the robot which is still connected, this is legal. However, Rules M16, V5, S1 would most likely make your robot contraption illegal due to the potential for entanglement or a possible safety hazard.

Q6. What is the minimum height of the ceiling at the competitions?
A6. The minimum height of the ceilings for all the competitions is 20 feet.

Q7. If a floppy is stuck in the ceiling, but it is over the playing field, is the floppy considered out of play and will it be replaced, or will the floppy be scored as 3 points (since it is over 8 feet high)?
A7. If a floppy is stuck in the ceiling and will not return to the playing field, a replacement unit will be returned to the playing field. Refer to Rule V24 in Appendix A of The Game.

Q8. If Velcro is used to fasten a floppy to the robot, would Velcro then be considered a fastener (and thus covered by the unlimited parts list)?
A8. Yes.

Q9. May we pickup floppies from the bottom?
A9. Yes.

Q10. When does scoring occur, during a match or after the match?
A10. Per Rule SC1 in Appendix A of The Game, scoring occurs after the match ends.

Q11. May a robot attach to posts on the puck with a hook on a line and reel it in?
A11. Although that is not specifically forbidden, it would likely present a risk of entanglement and thus violate Rule M16.

Q12. May a robot extend support arms to the floor in order to increase the effective wheelbase and improve stability?
A12. Yes. See Rule M5 in Appendix A of The Robot.

Q13. If we purchase an item on the Additional Hardware List, does it count as part of our $425 limit?
A13. No. The Additional Hardware List is completely unrelated to the $425 limit on parts from Small Parts, Inc. Please see Rule K1 in Appendix A of The Robot.

Q14. What is the limit on the total number of gears that may be used on the robot?
A14. There is no limit on the total number of gears that may be used on the robot. There is a limit on the total value of parts purchased from Small Parts, Inc. (SPI), and there is a limit on the total quantity of gears which may be purchased per the Additional Hardware List (AHL). Gears not purchased against the SPI or AHL

limits must come from the Kit or be manufactured from raw materials. Any raw materials used, of course, must come from the Kit, SPI, or AHL.

Q15. How do we obtain a customer number from Small Parts, Inc. in order to use our $425 team credit?

A15. Please see Appendix D in The Robot section of the manual.

Q16. We received a set of RNet radios with 9 pin connectors. How do we connect them to the Transmitter and Receiver?

A16. See page 13 in The Robot section of the manual. The beige 9 pin cables included in the Kit should be used to directly connect the 9 pin RNets to the data ports on the Transmitter and Receiver.

CASTER CLARIFICATION

Two types of casters are being used in the 1999 FIRST Robotics Competition. One type was provided in the kits and is for use on the robots. The other type is for use on the puck. Both types are manufactured by Kee Industrial Products. Please refer to the pictures below to identify the two types of casters and insure that, if used, the correct type of casters appear on your robot.

Caster for Robot
Part #: 311B-HR

Caster for Puck
Part #: 311-HR

PLEASE RECORD YOUR TEAM EXPERIENCES

At the Kick-Off, Dean Kamen asked teams to please record (on good quality video) their experiences in the 1999 FIRST Robotics Competition from start to finish. Below is a list of points that describe the type of footage that FIRST is looking for:

- How and why did the students and engineers get involved with FIRST? How did they heard about the program?
- Always get footage while students or engineers are doing something active - avoid “talking heads”.
- Were the students interested in science and technology before?
- How does the school promote, supervise and administer FIRST?
- Get shots of students at the earliest FIRST meetings.
- Reactions to the Kick-Off weekend - shots of engineers and students confronting the task, talking about this year’s game, what are their fears, what are their hopes, how are they possibly going to accomplish this monumental challenge?

- Again, get the students and engineers talking while doing things like strategizing, building, playing, anything active.
- Interview parents of the students - get the home perspective, get shots of the students and engineers in their homes.
- How do the students work with the engineers? Get shots of the students and engineers working together and get interview footage while they are actively building a robot. Get the trial and error aspect, the problem solving, the frustrating moments, the funny disasters, the triumphs of finally getting a workable robot.
- How do students raise money to get to Epcot? Get shots of students fundraising, publicizing, going door to door, etc.
- Get shots of the community getting involved, school support, parental support, possibly get a parent who is not supportive, hopefully they will change their minds, look for the drama.
- How do students get a position on the team - driver, strategies, etc.? Which students are happy? Which students are unhappy, frustrated? Hopefully, they will change their minds.
- Get shots of auditions for jobs.
- What do engineers think of students during building process? Interview the engineers while they are working the robot and with other engineers.
- How do students deal with the trip to Epcot?
- Record students during competition, not just visual footage, problems, arguments, solutions to unexpected problems and damage to robots.
- Record students post-competition, recap experiences, how it affected their lives, see them in environments that hopefully illustrate that they have become passionate about science and technology.
- Record engineers post-competition - in their work environment, demonstrating how FIRST has affected them, new attitudes toward students. Again, avoid talking heads.

IMPORTANT FLOPPY INFORMATION

On the Bills of Material for the Floppies, the material manufacturer is listed as Bentex. Bentex does not sell material directly to end users. Instead, teams should contact their local fabric store and ask for material made by Bentex. If the fabric stores in your area do not carry Bentex material, and are unwilling to order it for you, then you may wish to contact one of the following distributors.

Kustom Seating Upholstery, Inc.	Martin's House of Cloth
Makers of the floppies that will be used at the competition events, they have offered to sell floppy "kits" directly to teams. See the following pages for details.	Martin's is a distributor for Bentex fabric, and is willing to ship to teams. Call 603-699-4127 and ask for Tammy. Stock is limited and red and blue fabric is in short supply. You may wish to consider using alternate colors for practice floppies.

FLOPPY ORDER FORM - for FIRST Competitors

Kustom Seating Upholstery, Inc.

Contact: Customer Service
3000-3003 Madison St.
Bellwood, IL 60104
Phone (708) 547-7000
Fax 708-547-7070

Kustom Seating Upholstery, Inc. is offering the following packages for teams:

Note: Kit 1 & 2 contains One complete Sewn Floppy without packing peanuts

Option	Description	Price each	Quantity	Total
Kit 1	Blue Floppy	$22.00*		
Kit 2	Red Floppy	$22.00*		
			Total	

Note: Kit 3 & 4 have all Floppy materials required to manufacture one Floppy with the exception of packing peanuts and material is not sewn together.

Option	Description	Price each	Quantity	Total
Kit 3	Blue Pre-cut Fabric, Velcro strip, Velcro disc	$14.75*		
Kit 4	Red Pre-cut Fabric, Velcro strip, Velcro disc	$14.75*		
			Total	

Sub-Total	
Shipping & Handling	
TOTAL	

All orders must be placed by January 22, 1999.
All orders are based upon a FIRST COME FIRST SERVED basis. (No pun intended :)

*Shipping and Handling not included
Please Send Check or Money Order to Kustom Seating Upholstery, Inc.

Fax Order Form to Customer Service with the completed shipping information.

Team No. _____ Date _____
Team Name _____ Phone _____
Corporate Sponsor _____ Fax _____
Your Name _____

Shipping Address
Company/School _____
Attention _____
Address _____
_____
City _____ State _____ Zip _____
Phone _____ Fax _____