

Summary of the FIRST Team Forum, August 12, 1998

The Team Forum was held from 9am-4pm on Wednesday, August 12th at the FIRST offices in Manchester, NH. FIRST invited one representative from each team which competed in the 1998 season, as well as some non-team guests closely associated with the FIRST Robotics Competition.

The purpose of the forum was twofold: to give team contacts an opportunity to pose questions to FIRST staff; and for FIRST to get feedback from team contacts about various topics relevant to the growth and future direction of the Robotics Competition. The following team leaders attended: Sam Lippert/Team #5, Bill McGowan/Team#11, Greg Mills/Team #16, David Asano/Team #19, Mike Sklar/Team #21, Jerre Reimers/Team #22, Tracy Untiet/Team #26, Jim Zondag/Team #33, Alan Rau/Team #42, Jeff Burch/Team #45, Michael Martus/Team #47, Nola Garcia/Team #59, Leigh Kostis/Team #63, Eric Sandberg/Team #79, Elizabeth Calef/Team #88, Rich Sanders/Team #94, Robert Truncellito/Team #96, Colleen Sweeney/Team #101, Lynn Monica/Team #111, Kim Shillcutt/Team #117, Rob Brand/Team #126, Sue Godez/Team #128, David Senecal/Team #140, Jim Sergio/Team #145, Dan Velasco/Team #151, Paul Griswold/Team #155, John Haney/Team #158, Mary Raber/Team #162, Kate Leach/Team #166, Conrad Ekstrom/Team #173, Bob Scagni/Team #175, Dave Leenhouts/Team #176, Al Mothersele/Team #177, Marlene Rice/Team #178, Barbara DuBrosky/Team #180, Michael Gusta/Team #184, Dan Welsh/Team #186, Pauline Lamarche/Team #190, Steve Shubert/Team #195, Warren Hildebrandt/Team #201, Jim Reffelt and Corey Klein.

FIRST staff members present were: Andrew Allen, Lori Buckley, Theresa Clement, KC Connors, Dave Doiron, Jennifer Duffek, Dean Kamen, Ken Lambert, Thelma Meyer and Lynn Zuccarelli. Also in attendance at the invitation of FIRST were: Pam Chute, Woodie Flowers, Ceci Neumann, Kirsten Salletta, Vince Wilczynski, and Ann Williams.

The day began with welcoming remarks from Andy, Dean, and Woodie. It was noted that the 1999 Competition schedule is still being formulated; it will be posted on the FIRST website as soon as it is finalized. The team leaders were then divided into two discussion groups. While one group met to discuss the engineering-related topics (Tournament Structure, The Game, Kit of Parts), the other group met to discuss the non-engineering topics (Team Registration,

Promotional Materials, Hotel/Travel, Awards, Team Party). After a brief lunch break, the groups switched topics for the remainder of the day.

A synopsis of those discussions follows. Please keep in mind two things as you read through this summary:

1. Sometimes off-shoot conversations arose within a discussion topic. For example, you'll notice some comments regarding the Chairman's Award reported within the Engineering discussion groups.
2. All of the proposed action items reported below will not necessarily be implemented. FIRST needs an opportunity to review and discuss each item in greater depth. This will be an on-going process for FIRST as we enter the 1999 Competition season.

Team Forum Meeting, Engineering Topics

The Engineering portion of the meeting included discussions relating to the Game, Kit of Parts, and the Tournament. Two different groups discussed these items and we came away with a feeling that the teams often agreed on subjects and conversely, often were at opposite poles, depending on their experiences. Two topics seem to weigh heavily on team leaders, burnout and time constraints on robot, AutoDesk and Chairman's Award completion.

The consensus of the representatives was that the regional competitions are the heart of the season and are the place where most team bonding occurs. The students enjoy them more and get more from the camaraderie and the events themselves. Many felt that the National Championship at the Disney location is unnecessary.

A representative from New Jersey asks that FIRST address the problem of approaching educators and showing them that our approach works. We need to tell them that the kids that become interested in technology will keep the economy going. He said that you cannot get a high school shop tech teaching degree any more in New Jersey. Is this a problem elsewhere?

An offshoot of conversation was the fact that the Main Contact for the team is not necessarily the person who helps information trickle down to the team. Can there be a person designated to distribute information to all team members concerned?

THE GAME

Suggestions/Comments for consideration:

1. Woodie suggested that a team could perhaps have two choices, competing in a new game or staying with the "old" challenge.
2. Could there be two competition divisions, one where the students build the robot, and the other where the engineers build it?
3. Can we limit the percentage of engineering time spent on the robot? Some lose faith in the system when the gap is too wide.
4. Add lumps and bumps to the game.
5. Have two games playing simultaneously, three teams on each field. Each field would have partner teams on the other field. Teams would combine their scores. This would mirror the departments in industry working together to produce a product.
6. Keep the field simple to keep down costs.
7. The change to a 30" robot dimension was good.
8. Add Steeple Chase and King of the Hill aspects to the game.
9. Simplify the game.
10. Field is too large and expensive for most team areas. Ken mentioned that fields have to be large because of the audience view.
11. Have field such that the goal is just a portion of the field. This would enable easy set up for practice. (Such as the central goal in Toroid Terror)
12. Footballs and foam "noodles" were suggested as game pieces.

Disney issues:

1. Three fields was a nightmare.
2. Can team banners be hung at Epcot?

Referee issues:

1. Referees should be strict and consistent during seeding.
2. Change "bad" calls. Ken mentioned that we run the event as a sporting event. Referees are human and we need to stand by their calls.

Team name issues:

1. Are the co-partners' names too prominent? It was brought out that it is great motivation for partners to recruit more sponsors.
2. Teams want more high school and nickname recognition. They would like their team nickname announced during competition play.
3. Can the team's state be announced? This would give other teams more information for cheering purposes.

STRESS/BURNOUT

Mike Bastoni, Team 23 Boston Edison, Plymouth North HS, suggested a way to alleviate some of the stress associated with the six week time allotment. Mike thinks, and others agree, it is unnecessary to change the game every year. He feels we should retain a game for about three years, perhaps modifying it slightly to retain creative engineering and playing interest. He asked the question, "Is this program about educating kids or is it about building a robot?" Mike said that FIRST must be "doable" and "growable" and that by eliminating some costs and stresses, the mission will be easier to accomplish. He also said that there is as much "juice" in redesigning, as in designing an entire robot.

Some of the positive aspects to the proposal to keep the game the same are:

1. We can reach more students by this method because it will keep down both the FIRST and the team budgets.
2. Less stress for engineers, fund-raisers, teachers.
3. Less mentor dropout.
4. More energy can go toward other parts of competition, such as Chairman's Award and the AutoDesk Animation Award; more for veteran teams than rookies.
5. Money will be saved on playing fields.
6. Team money saved on Kick Off. Veteran teams have option not to attend. With smaller attendance, FIRST could use Kick Off time to educate rookie teams.
7. There can be more student involvement in building the robot since they have time to become familiar with the parts. This would allow more educational "bang for the buck."
8. Would allow veteran mentors time to assist rookies.
9. Engineers could devote their time to planning a new game without rush.
10. FIRST Engineers could be the "practice teams" and debug the game more fully, providing a more complete set of requirements and specifications.
11. FIRST Engineers could debug the control systems and other kit items thoroughly before the new game and provide a thorough troubleshooting guide in the manual.

Some negative aspects brought out are:

1. Game change each year puts everyone on a more equal footing
2. Kids like the change

Role of Human Player - The purpose of the Human Player is to lessen the impact if the robot fails as well as being man and machine together. The human player can at least keep the team in the game. During game design, the designers try to envision the effect the human will have on the game. They are sometimes surprised at the human's scoring ability and how he or she can alter the scores and strategies. When both groups were asked if the human player belongs in the game, they answered unanimously, YES. There needs to be a man/machine symbiosis.

Some team comments regarding the human player were:

1. The competition is as great for the human as the robot. Should it be?
2. Human scoring was too easy in 1998.
3. Human needs to be there and interact but not control.
4. Human capability of taking off points was not good.
5. Perhaps human should be seated, restricted. This is a safety issue.
6. By using human player, team excitement/membership is augmented because it encourages sportsmen to become involved with science.
7. Human should have less impact.
8. Because of strength requirements, this year's game minimized the use of the female human player.
9. Human involvement made team strategize more and rethink strategies, a good practice.
10. The flukes produced by the human can make a win/lose and was great for the game.
11. Human helps new teams when robot is not working. This can keep a team playing when a robot needs repair.
12. Another comment was that the human introduced more strategies and contributed to making the competition a "microcosm of life" since surprises are a part of life and its game.

Scoring:

1. Scoring should be more self evident. It was too hard to see if ball touched bar, etc.
2. Scoring methodology should be simple
3. Can scoring be more interactive such as scoring on another robot?
4. Can concept of charging for balls, as in Maize Craze, be reinstated?
5. Can scoring be easier? Rookie teams find it hard to make robots reach high.
6. Have a rolling score. This is not possible because of present scoring methods.

Documentation:

Ken asked if there were problems with the documentation.

1. Some mentioned that they struggled with the field drawings and missing dimensions.
2. Woodie asked if anyone knew about a "downloadable" free search engine to help with question searches.
3. Teams could have used supplements earlier, such as motor specs.
4. A question was posed, can you get material information from the web?
5. It would be good to have a "commonly asked question" chapter in the manual.

KIT OF PARTS

Some attendees felt that some of the kit parts were not adequate to be used on the robot. Andy Allen, President of FIRST, mentioned that there are constraints because of the suppliers. What they donate greatly dictates what parts we can use. It was mentioned that Small Parts is very expensive. Some teams would rather give back their Small Parts allotment so they could deal elsewhere. The rationale was that this would teach the students to

deal with vendors as in a real life situation. Ken mentioned that we are trying to get supply houses such as The Home Depot involved.

1. Some suggested a more modular approach to the kit components. The subsystem would reduce engineering time for teams.
2. Can there be some help with drive train directions?
3. Changes to the kit of parts cost teams a lot of money.
4. Changes to control system make trouble shooting tough.
5. Can there be different wheel and caster options?
6. Can we expand the Additional Hardware List?
7. Try to enlist McMaster Carr as well as Small Parts.
8. Can there be more pneumatics? Ken mentioned there will be more in 1999, and they will integrate better.
9. Can there be more supplier stickers?
10. Can we use bi-directional capability, a light back to transmit box? A new radio modem may address this issue.
11. There is a need for a decent battery switch to power off and protect electronics.
12. A terminal junction box is needed.
13. The lugs were a problem.
14. Can teams purchase more potentiometers? Ken mentioned that we restrict quantities to make it even for poorer teams. Teams can use reed switches and limit switches. This keeps technology more fair for teachers and engineers.
15. Can we supply more wire?
16. Can we help with pneumatics safety issues? Woodie-(Fisher Techniques??) Ken mentioned that perhaps SMC Pneumatics can provide help. McGraw Hill "Upgrade"?? (LEGO team)
17. There is a need for a broader "freebie parts list." The robot has grown in size but the Small Parts budget does not support the size.
18. Small Parts turnaround time and backorders was a problem. They also showed up late at events.
19. The balls were hard to get from Sport Fun. They were late and colors not always available. Their customer service was not always friendly.
20. Consistent air pressure in the balls was a problem, especially at Epcot because of the heat.
21. Students are looking for more software language, perhaps C++.
22. Parts should be available locally so the town can get involved with donations.
23. Teams were glad to see a clutch in the drill motor.
24. Teams were also glad to see the van door motors. These were not available on the market, however, unless you purchased the whole assembly. The consensus was that the selection of motors is good.
25. Field parts were expensive. Teams need to know that if you go through Kee Klamp, they will receive a price reduction.
26. Suppliers need to be made aware that they need to be able to supply parts faster. Ken will make suppliers aware that they need to have more parts on hand.
27. Should bike parts be used?
28. Teams want more gears. They are costly from Small Parts.
29. Kit should be complete at Kick Off.
30. Finding insulated spade connectors was a problem.

TOURNAMENT

Changes in the game and tournament structure were discussed at length. The possibility of working up to eliminations through the regionals and Epcot competitions was a topic. The eliminations would provide a good, short version for ESPN. A final, one-day national tournament at Washington, DC, perhaps a month later, was of interest. A portion of the registration fee could be used for the teams traveling to the finals. Timing is critical since proms, AP testing, and graduations occur in May.

1. If the game remains the same, how would rookie teams be affected?
2. Should rookies compete against each other?
3. Should the regionals be used to sort approximate ranks for seeding at nationals?
4. Can there be a practice field set up at nationals?
5. Should the regionals be called "Opens" since you don't move on to a new level as a result of the regionals?
6. Are mascots allowed at Epcot? It is a great part of the game and hype.
7. Can there be a "stuffer" in the National program to credit the regional winners?
8. Are we going international?
9. It was mentioned that teams call the FIRST engineering department until they reach a person that gives them the answer they want. Can we designate specific persons for specific areas?
10. FIRST is not always friendly. We need to ensure that everyone on staff, including volunteers, present a friendly face at all times.
11. Have four locations at Epcot and use them as elimination areas, with final competition at a central area.
12. The party at all events tells kids that they are important.
13. Having the students answer the Inspection Questions was a good learning experience for them. Adults should only answer when necessary.
14. Make the inspection lines shorter. Inspections help teams and protects their robots, as well as helping quality control. Inspection teams may go to the teams to eliminate long lines. Teams would just have to weigh in and size robots at a specific place.
15. Should FIRST cap the number of team members? Do we need to define "team member" for party purposes?
16. Should we do away with seeding? Seeding does ensure that every team plays five times. Would we lose hype with totally random play? If there is no seeding, there could be more practice.
17. Can we post a complete list of placements after competitions?
18. Can we go to an eight week time frame?
19. We need to have a better percentage of return teams. We need to have more teams go for the Animation and Chairman's awards.
20. Can we have a rookie competition or at least seed rookies together?

ADMINISTRATIVE TOPICS

Shipping:

Several team representatives asked if teams are allowed to transport their robots themselves. The answer is yes, **if** special arrangements have been made through **FIRST**. See 1998 Competition Manual, page 62 - section 6.10.3.

There was discussion regarding the cost to ship the robots. Some teams have found it to be less expensive to ship by air. The names of the two companies mentioned are **TEIKO** and **CFI (Consolidated Freight Incorporated)**.

FIRST is also looking into the possibility of using an exclusive shipper.

PROMOTIONAL MATERIALS

With the various requirements, expectations and demands a FIRST team encounters, we at FIRST plan to establish action items, dates and timelines to be posted on the web prior to the design and build phase of your robot. This will ensure that all teams will have, up front, a list of deadlines and requirements for the upcoming season..

Teams expressed a concern for rookie teams, noting that they were especially vulnerable. A "How To" video was proposed. A number of veteran teams expressed an interest in mentoring a rookie team. One team leader in particular has a list of action items and is willing to share them with any interested teams once it's complete. FIRST will post this information as soon as it is available. The ASME Guide will remain posted on the web and is a great source of information for every team to utilize, especially rookies. Some rookie teams were reluctant to consult with veteran teams for fear of not knowing the level of competitiveness of other teams. There were second year team members present. Their *fears* were quickly diminished according to these attendees. The veteran teams went out of their way to assist them. The consensus - **it's OK to trust the veteran teams!**

Another positive suggestion for teams to share with one another was to help establish teaching techniques to help engineers interact more constructively with their students. The teachers on the teams should guide their engineers on *how* to work with their students, etc.

Some team members commented that FIRST is not in the "education loop". What this means is there are a lot of school rules and regulations which teams must adhere to state by state, some being more stringent than others. It was suggested that FIRST become more sensitive to these constraints. Some of these include: the length of time students are away from their studies, advanced travel plans must be in place as soon as schedule dates are released and the underlying subject of liability.

There was a peer to peer discussion among the educators present to design FIRST as an **Academic Sport**. To pull away from the mindset that a FIRST team is an after school club versus a sport would allow teachers to be considered *coaches*. In turn they could be compensated for their time and effort. This would need to be addressed at the school level by the individual teams. The *burnout* rate was also discussed. Andrew Allen is researching a network service provider (such as AOL) to enable teams to share information via Chat Rooms. It will also allow FIRST to become more interactive with the teams. There was an overwhelming concern with policing the use of the Internet in the schools. Andrew assured our attendees that whatever provider is chosen will be strictly monitored by a safety program such as Cyber Cop.

TEAM REGISTRATION

The Registration form will be available on the web (including Team Profile). New to the registration form this year will be the expected number of spectators that will be present at each event. This is a must and is considered mandatory for the registration process for seating in the arenas as well as team party planning and awards ceremony. Deadlines will be strictly adhered to.

The consensus was the web is the key to checks and balances with communication between teams and FIRST. It provides continual communication and is a great source for quick answers and support. FIRST will continue to supply more information via the web.

The Disney liability release form will be included in the 1999 Competition Manual.

Veteran team numbers will remain the same as last year. Team Leaders that were present were very happy with this decision. This will enable teams to cut some costs by keeping buttons, T-shirts and other paraphernalia from year to year.

The question of a multi-regional discount was brought up. This request will be discussed at FIRST for future consideration.

An attendee suggested FIRST become more proactive with booking competitions and sites 2-3 years in advance. FIRST has discussed this topic extensively and we are working towards implementing this plan of action.

KICK OFF

Teams like the idea of remote sites for the Kick Off (via web simulcast) and expressed the importance of the entire team viewing it at the same time. FIRST is investigating the cost and feasibility of doing a web simulcast. The majority of attendees stated they would still send a representative to the Kick Off.

THE PIT AREA

A major concern among the team leaders was not hearing the PA (public announcement) system in the Pit area. One team missed their round because they couldn't hear the announcement that there was a protest in place. They lost their round by default. It was suggested that the teams assign a team runner for the Pit area or FIRST will assign a volunteer for that job. It was also suggested that a protest should result with some type of physical notification (such as a yellow card).

It was strongly suggested that FIRST institute a more technology based scoreboard. There was general consensus with regards to the viewing monitors in the pit needing to be placed away from the entrance and exit. These areas were over crowded and it was difficult for the teams to move their robots out to the playing fields. There was a concern with the *lack* of policing. Some teams had their equipment coming out into the aisles beyond the 10 x 10 space provided in the Pit area in Florida. It is necessary for teams to adhere to the boundaries that FIRST sets in order to keep it fair for all teams.

There was concern over the length of time inspection took. FIRST agreed and the inspection process will be broken into two categories.

1. Teams will go to the inspection station for weigh in and measurement.
2. Teams will remain in their pit area for the engineering inspection. The engineers will go to each pit station and inspect the robots there. This will ensure that the teams will not have to spend long periods of time in line, but be working on their robots instead.

THE PLAYING FIELD

Several team leaders suggested that Disney build a football arena as a new type of playing field for the nationals. The spectator seating would surround the 3 stages, thus permitting one

large crowd to view all simultaneously (comparable to a gymnastics event). This type of venue would preserve the intimacy that is felt at the regionals. One team member stated that the regionals are cohesive and maintain a strong sense of continuity. There was a large number of participants who felt it would be detrimental to the FIRST experience if the regionals became *too* large.

Another topic of discussion was the lack of shade at Disney. All agreed that being exposed to the Florida sun all day needs to be addressed; especially the teams that are used to more snow than sun!

TRAVEL NOTES

Overview:

During the travel section of the forum, regional and national travel issues were discussed. There was an overall consensus that the team representatives need the overnight accommodations / hotel package information sooner than the kick-off in January. It would also be beneficial to the teams if there was an outline of suggestions regarding travel packages available to the teams. Examples are as follows:

- Group Discounts
- Airlines offering the best packages
- Chartered flights
- Ground transportation discounts or bulk purchasing
- Specific policies and procedures regarding travel arrangements

Team representatives shared the need for one person from each team specifically assigned to coordinate travel. It was also noted that the teams requested a bulletin or web posting of the teams participating in each regional event prior to arriving at The Competition.

Ann Williams from Walt Disney World, Epcot attended the forum and addressed hotel accommodations and ground transportation issues. Ann expressed that FIRST is one of the largest youth events Epcot hosts. Our mission statement is important to Epcot and Walt Disney World and as an organization believes in the program and our teams. Ann wants teams to take note of the fact that we hold our event in one of peak travel times of the year and this is one of the reasons we have a split between on and off property packages. Team

representatives voiced opinions and concerns regarding early check-in procedures, team package pick-up and room reservation policies.

Action Items for FIRST:

1. The overnight accommodation and hotel package information will be released to the teams via our web site in the fall of 1998.
2. Assemble a travel information package to include: airline discount information, group rates, chartered flight opportunities and ground transportation. This information will be available via our web site.
3. Once registration has closed, FIRST will post a list of teams competing by regional event on our web site.

Action Items for Disney

1. Steps are being taken to improve the ground transportation to and from The Competition site.
2. Check-in and reservation procedures will be addressed.

Conclusion

FIRST recognizes the effort and dollars teams put into travel arrangements. We will work with airlines closely to pursue the best possible discount packages for our teams. Upcoming information will be available via our web site. Charter flight information and team partnerships will also be researched and shared on our web site. Our goal is to not become a travel agency but to provide our teams with knowledge and information necessary to save time, money and frustration.

AWARDS

Overview:

Discussion about awards centered primarily on **The Chairman's Award** and its criteria. Team leaders were asked what they perceive the award to be about. Responses were: partnership efforts, community involvement, spreading the word about FIRST, impact on school/students, fundraising, and student involvement. Some team contacts expressed concern over the ambiguity of this judging criteria, and a request was made for more definition. After much debate, including comments from both team contacts, FIRST staff and Judge Advisors (Ceci and Vince), the consensus was to add a little more definition to the judging criteria. However, it's important to leave some ambiguity in order not to restrict a team's inventiveness. It was mentioned that judges also take into consideration the on-site informal discussions they

conduct with the teams throughout the competition. The importance of having the students behave naturally with the judges was noted.

A team contact expressed concern that the Chairman's Award winner is chosen for political reasons more than anything else. FIRST solicited suggestions on how to overcome the misperception that the award winners are chosen for political reasons (see action steps below). Additional comments followed about how difficult it is for rookies to grasp what the award is all about, let alone win it. FIRST acknowledged that, while it may be difficult for a rookie team to be the Chairman's Award Winner, there have been rookie teams who were award finalists. It was also noted that the Rookie All-Star Award, much like the Chairman's Award, recognizes a rookie team's over all efforts-not just their robot construction. In some respects, it can be considered a rookie version of the Chairman's Award. Some of the benefits for a team to work on a submission were discussed: creates a more well-rounded team, opportunity for non-engineering team members to participate, team can use their submission for their own "marketing" purposes.

It was discussed that this was the first year teams received feedback from the judging panel on their Chairman's Award submission. While the majority of the team contacts liked the feedback they received, some contacts wished the feedback was more specific. Some team contacts felt that the award needs to have a scoring matrix/specific points assigned for each component of the criteria as part of the feedback form. FIRST explained that the intent of the judges' feedback was to be constructive and to offer commentary as to whether or not a team's overall effort was on the right track, make possible suggestions for next year (if applicable), etc. They were as specific as they could be; to be any more specific would mislead a team into thinking that they could automatically win the award next year if they followed the suggestions made.

Much of the discussion centered on the challenges and uniqueness of the Chairman's Award criteria. It was discussed that, except for rookie teams, most teams know that their Chairman's Award submission is really a year round effort (in fact, some teams even have a 2 or 3 year plan/strategy in effect outlining the steps they think they need to take in order to win the award!). Although the deadline for the submissions can't be extended, it was discussed that teams don't need to wait until the kickoff to start working on their submission. Discussion also included the possible necessity of having two Chairman's Award winners in future years.

Many felt that would dilute the prestige of the award. One suggestion was to add more finalists rather than having two winners.

Medallions/Trophies:

Comments were shared about the award medallions and trophies. A suggestion was made to differentiate the medallions for the regional and the national competition. FIRST made note of this suggestion. Presently, the medallions given at the national have a wider ribbon than the ones presented at the regional events. The medallions can be engraved by the recipients. To date, FIRST has not engraved medallions and will not do so in the future due to the large quantity. FIRST will, however, check into producing separate molds for the two types of events. Please keep in mind that each mold is quite costly and to produce molds each year that can not be re-used will be a significant expense. For the last two years FIRST has sent each participating team (who have not received gold or silver medallions) twenty five complimentary bronze medallions. Another suggestion was made to have the trophies specific to the awards. It was noted that the trophies currently bear a plaque that is specific to the award, regional or national, and the competition year.

Proposed Awards-Related Action Steps:

1. Post the award script from 1998's Chairman Award finalists & winner on the FIRST web site. This will give teams a better idea of why the judges selected these teams, and help to correct the misperception of teams winning for "political" reasons.
2. Incorporate the team nickname and team # into all award scripts (national and regional); don't just use the team's official name.
3. Find a way to expose/enlighten rookie teams about the Chairman's Award **before** the Kick-off in January. One possible solution is to post the Competition Manual on the FIRST web-site.
4. The Chairman's Award Winner should write a one page summary about their unique submission for potential posting on the FIRST web site after the championship.
5. Have a couple of previous winning Chairman's Award submissions on display at the Kick-off for rookie teams to view. (FIRST cautions that teams should NOT attempt to mimic prior award winning submissions. To paraphrase Mike Bastoni, the Chairman's Award exercise **itself** is the most rewarding experience; teams should invent and create their own interpretation of the FIRST criteria and just go for it!