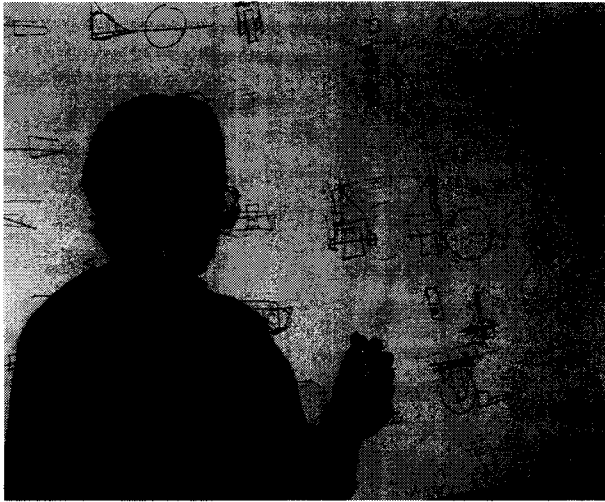
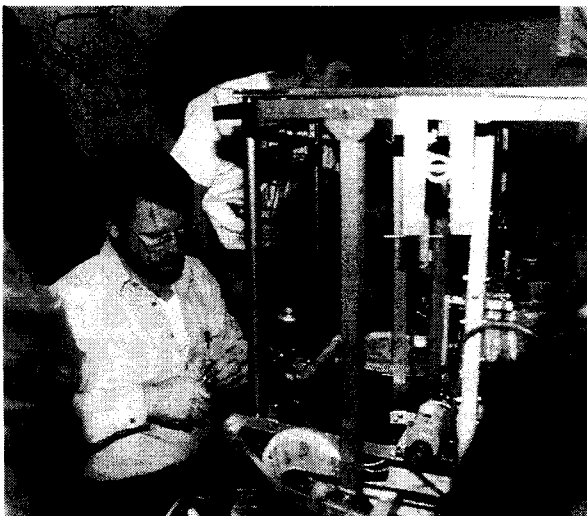
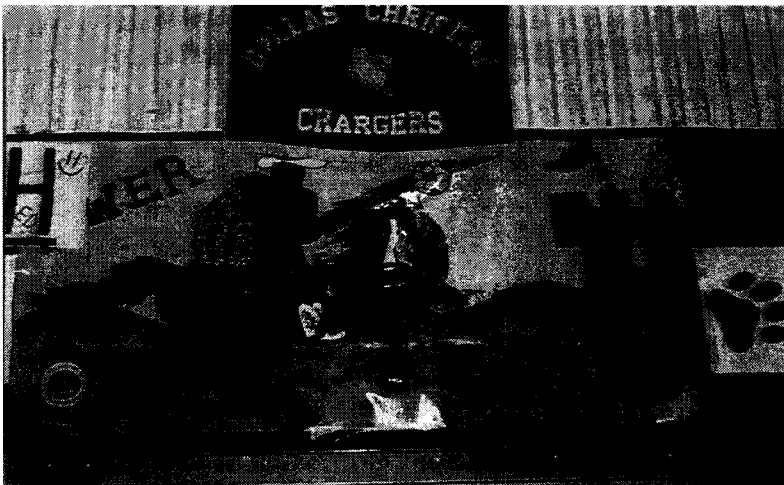


# The Dallas Christian Charger

E-Systems Dallas Christian School  
Mesquite, Texas



E-Systems engineers arrived at competition as sponsors of two rival teams. As sometimes happens when your heart is bigger than your ability to work 24 hours a day, seven days a week, for seven weeks, the machines arrived untested. Both E-Systems/Dallas Christian School and E-Systems/Greenville High School teams experienced serious machine failure. The engineers could have packed up and gone home. However, concern for their young teammates from both schools gave them the strength to dig deeper. Problem solving began in earnest. Evaluate each machine. Work all night. So intent was their effort, they did not realize they were being viewed as never before. Rival students pulled away unseen wanting to lift a tremendous weight from the shoulders of the engineers they shared and truly appreciated. A tap on the broad shoulders of the E-Systems engineers signaled that they had done enough. United, Greenville High and Dallas Christian School students recommended that the one most reliable machine be chosen. Two became one.

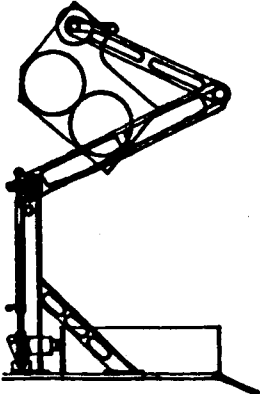
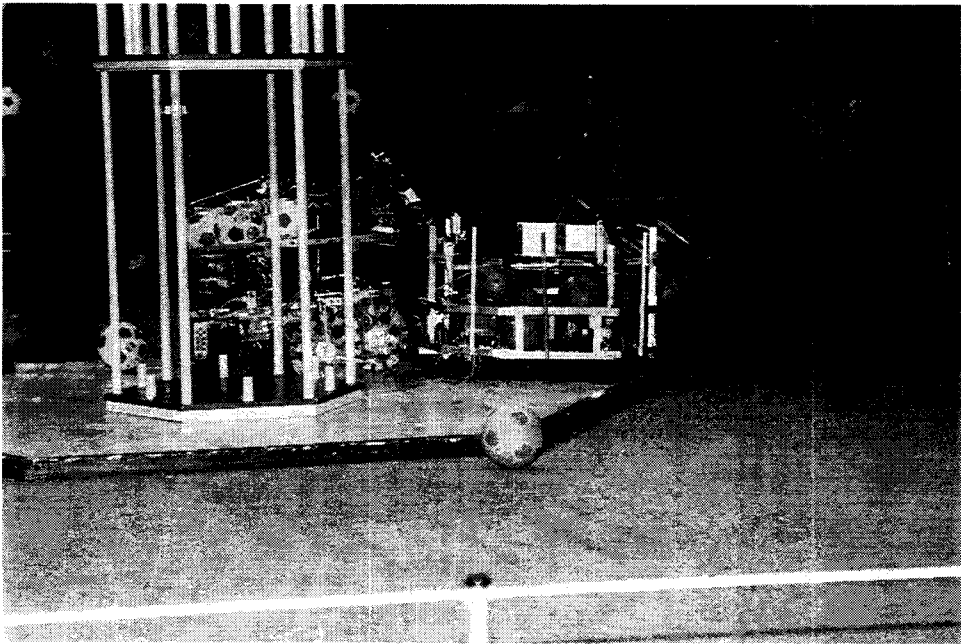


# The Mystery Machine

E-Systems Greenville High School  
Greenville, Texas



## E-Systems Best Play of the Day Award



# Ediak

Eastman Kodak Company Edison Technical and Occupational Education Center  
Rochester, New York

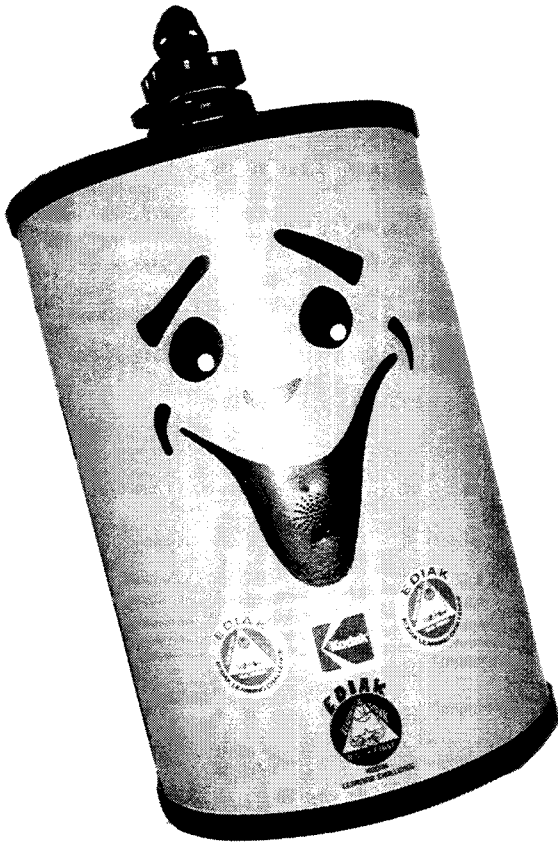


*At any given time during our quest for solutions to this year's challenge, it was often difficult to tell just who was the student and who the teacher.*

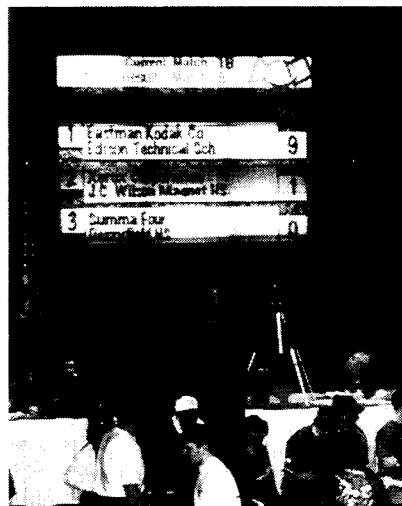
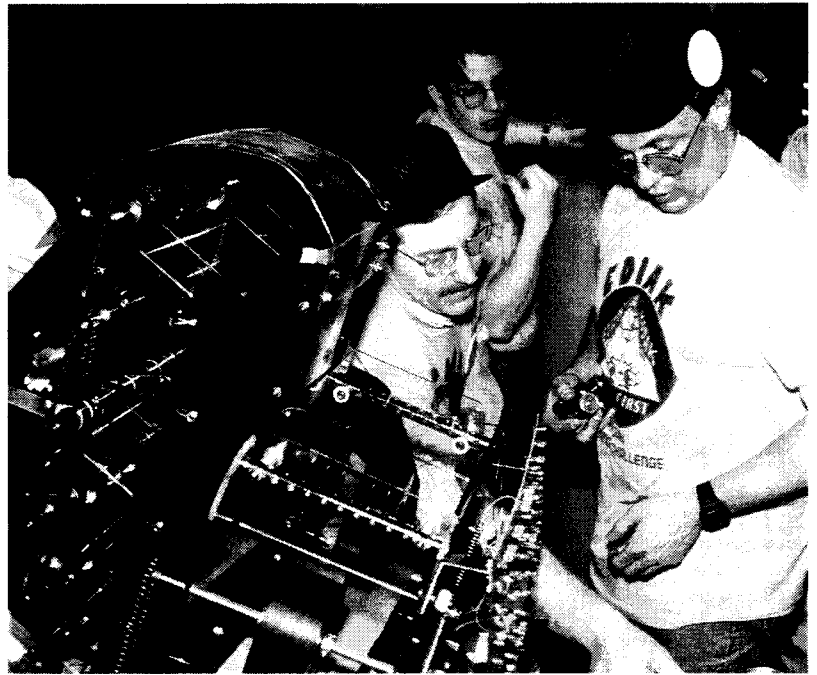
On the journey to inventing a machine that would move soccer balls, we created something that was not included in the original box of parts. We created a wonderful partnership.

During last year's competition one student at Edison Tech. was dangerously close to dropping out of his senior year. His involvement with our team gave him the necessary motivation to finish high school. He is now in college studying to be an engineer.

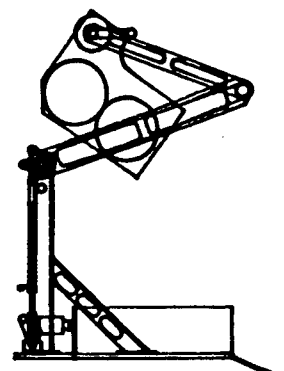




**Most Photogenic Award**



**Neighbors count.**  
 The Eastman Kodak & Edison Tech. team kept their Rochester, New York rivals, from Xerox & Wilson Magnet High School, alive by intentionally scoring for their neighbors back home. 'Ediak' recognized during a shared match that the 'X-Cats' were in trouble after a hard hit. The damage was repairable and so the 'X-Cats' were able to experience one more round.

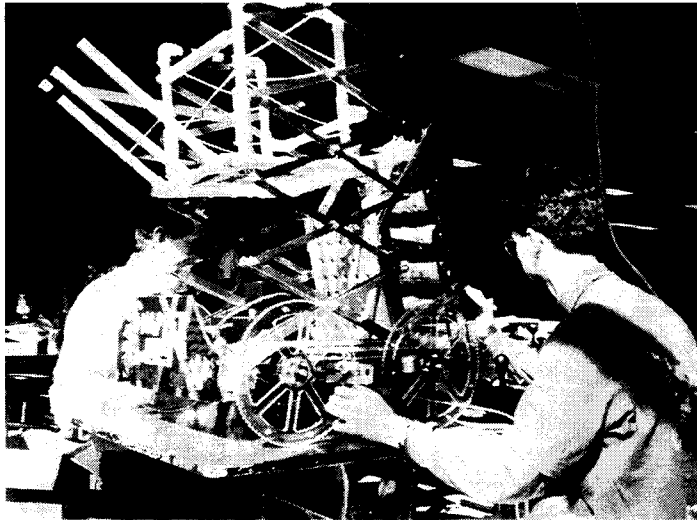


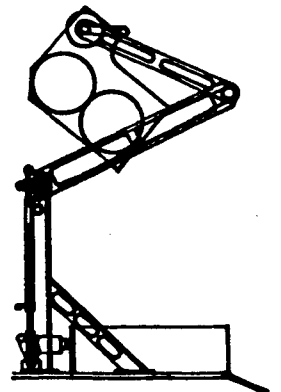
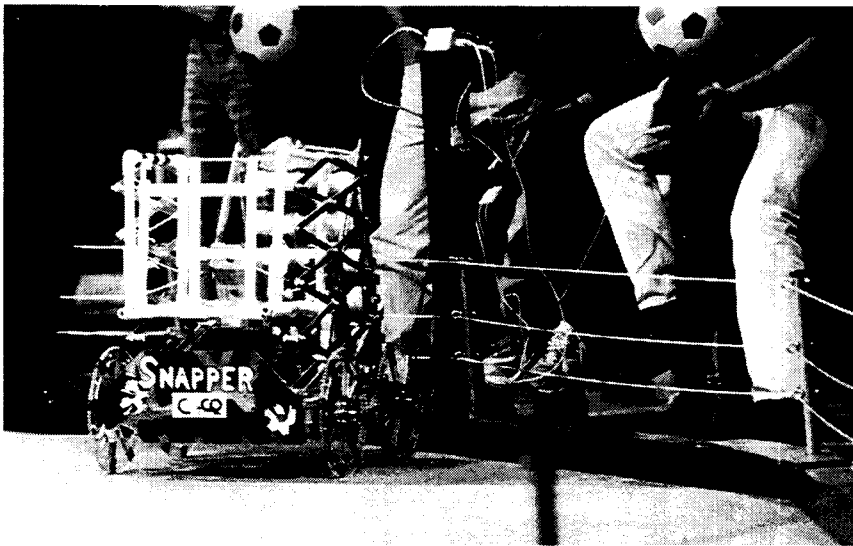
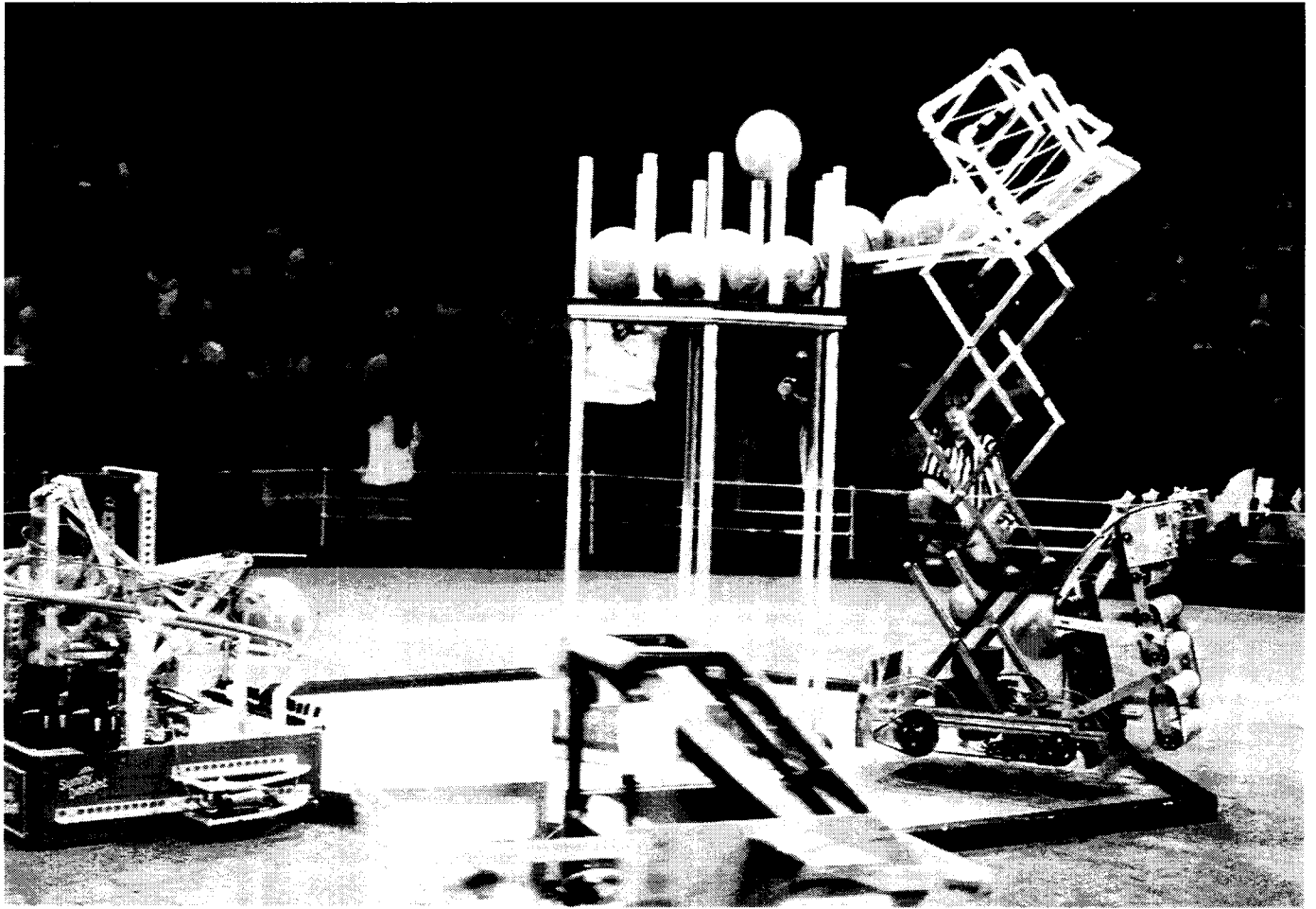
# The Snapper

SMC Pneumatics, Inc. Ipswich High School  
Ipswich, Massachusetts



*This is the third year that 'The Snappers' have been a U.S. FIRST team. The team is comprised of two engineers, three teachers and ten students. Of the ten students, seven are Juniors who returned from last year's team.*

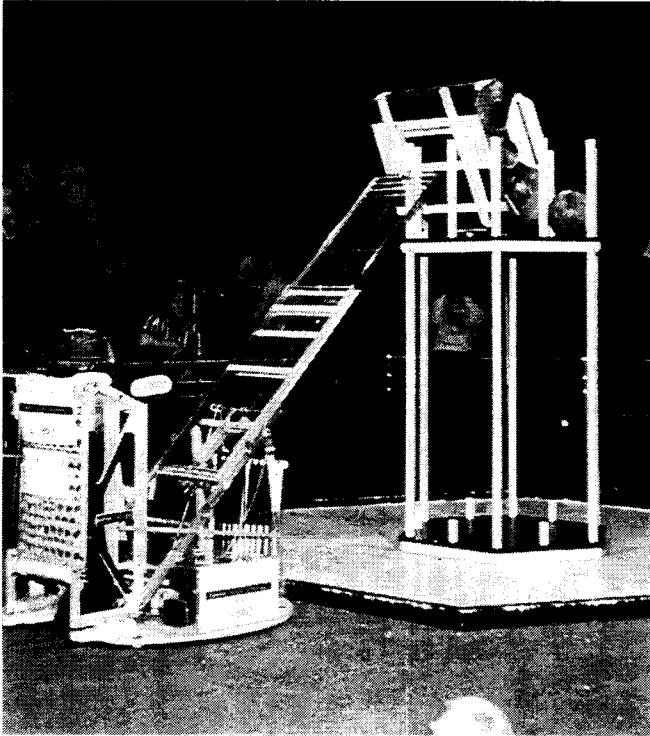




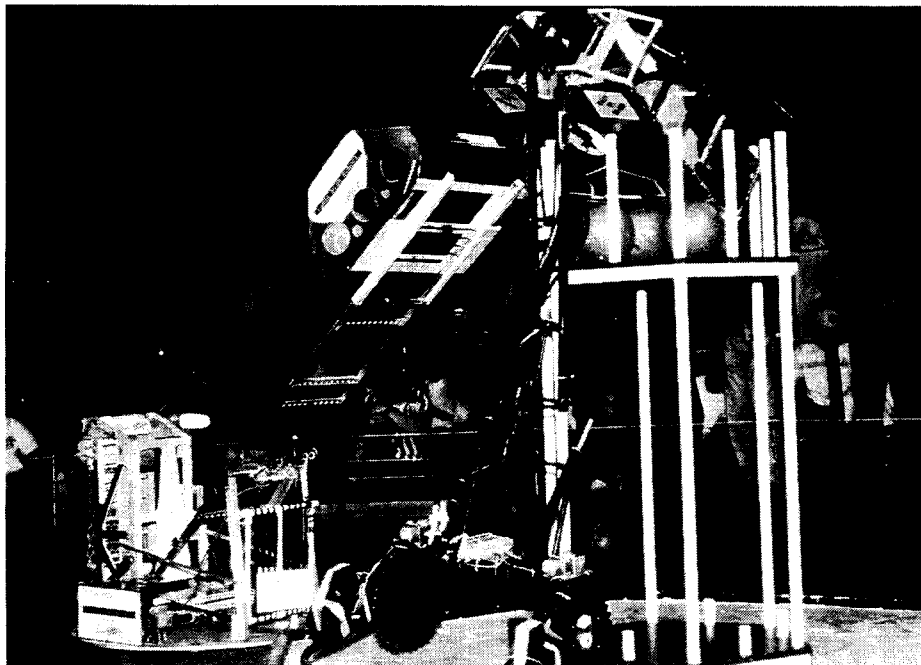
# Son of Beast

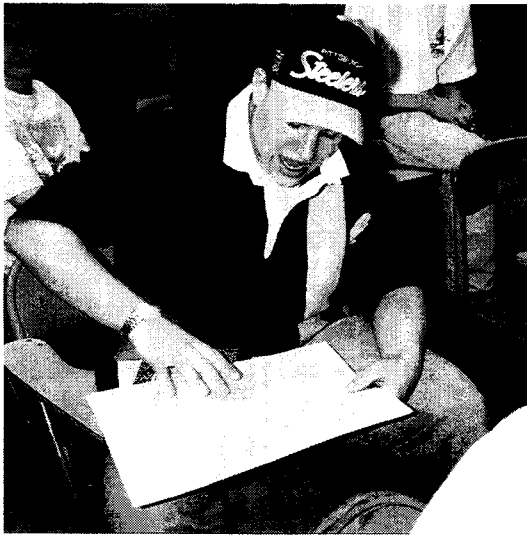
Markem Corporation Keene High School  
Keene, New Hampshire

## Number One Seed



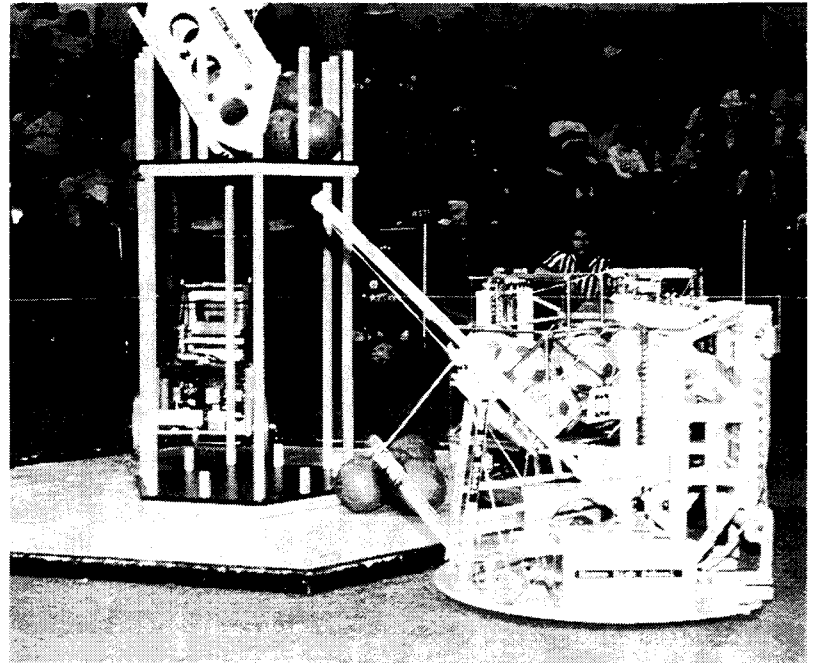
Our U.S. FIRST team consisted of five engineers from Markem Corporation and 60 students from Keene High School. At our first meeting, held before the Kick-off, we discussed the generic aspects of the competition: learning the rules, setting goals, defining a strategy, teamwork, project planning, out performing the opponents, and having fun. We emphasized the many ways students could participate in the project from designing and building the machine to organizing a promotional team and cheering section.



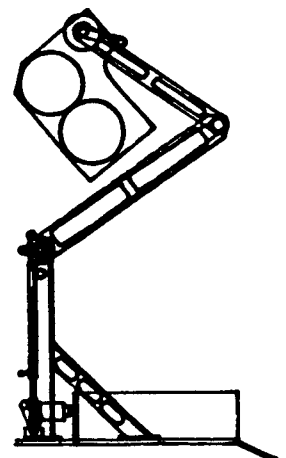


Mike Scholl is one of the 60 students who helped the Markem/Keene 'Son of Beast' team achieve the Number One Seed Position after an intense day of seeding competition.

Mike was a 'Beast' on the 1993 'Rug Rage' team. Things were a little different before that. Lack of direction for a student can make school seem pointless at times and he'd experienced that. When asked about his U.S. FIRST experiences, he said. "I really liked it. Hands-on engineering is something I found really interesting. It gave me something to aim for."



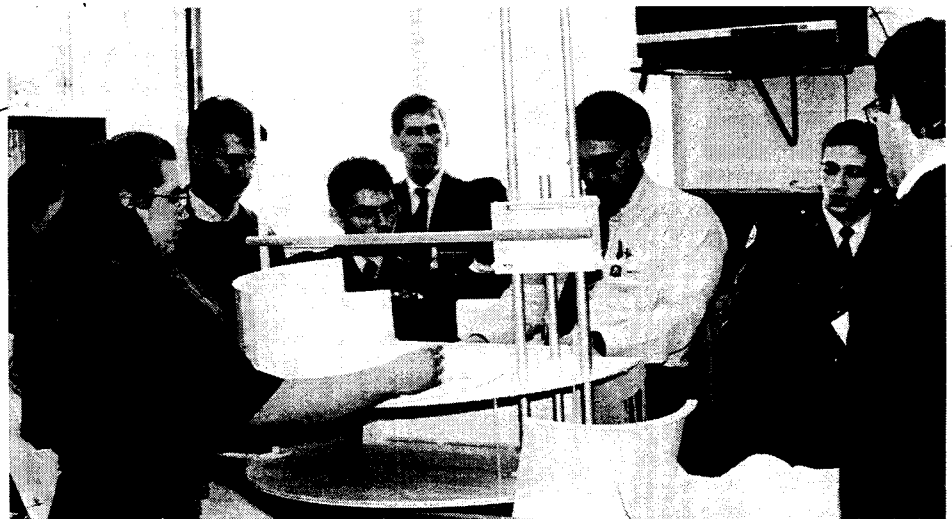
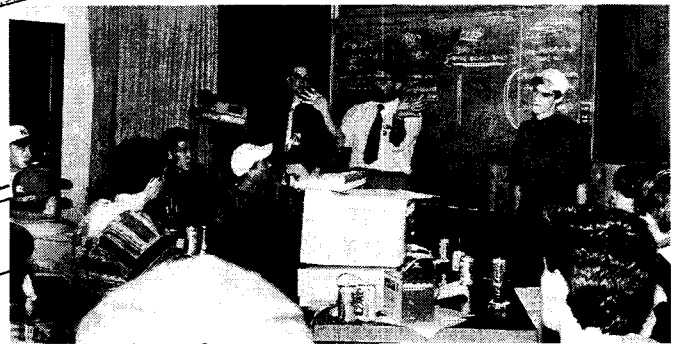
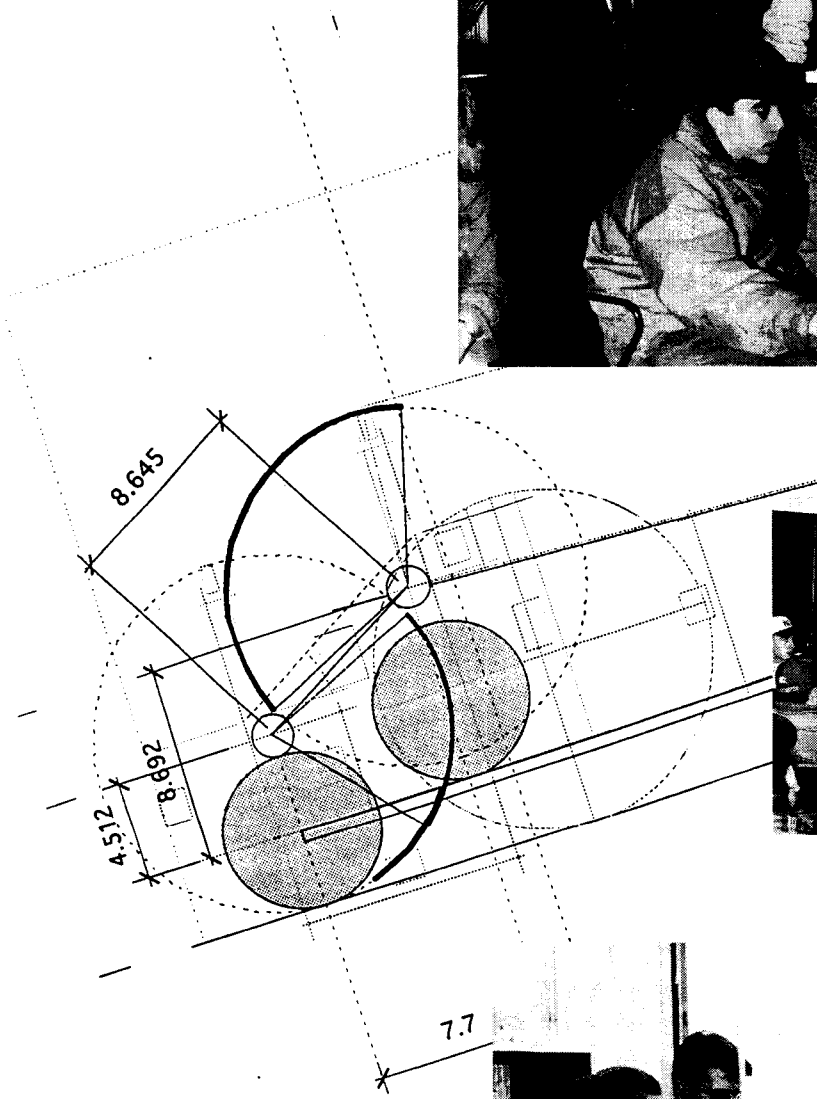
Mike's Mom says it all...  
"It was unbelievable. I felt so proud seeing Mike and the other Keene kids competing."



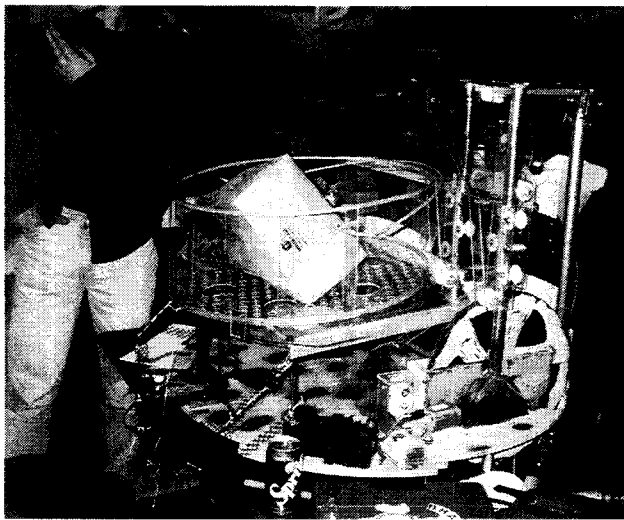
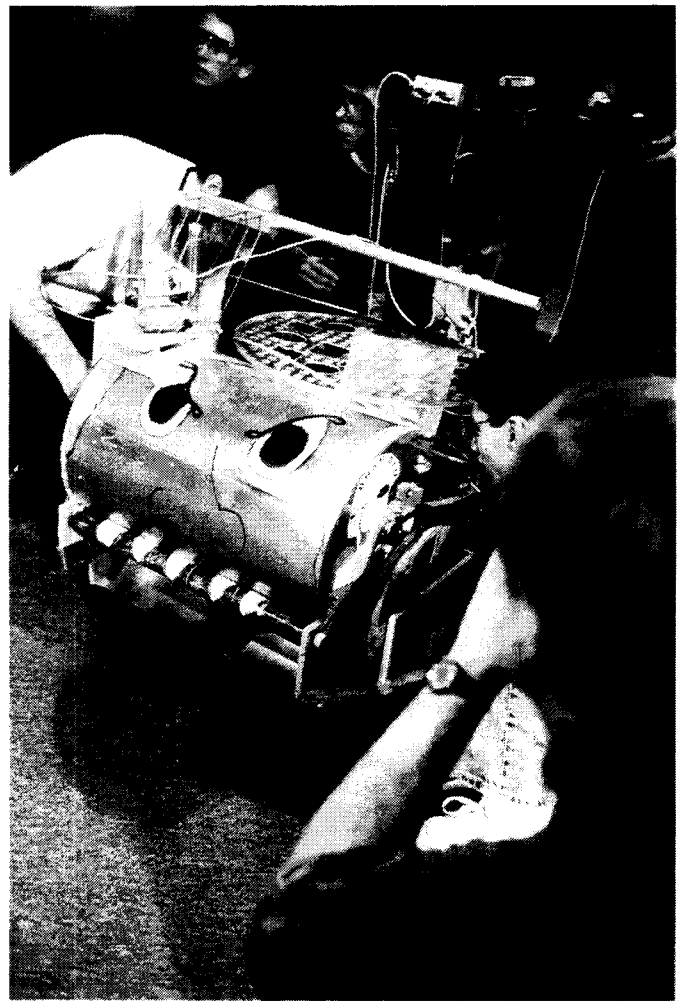
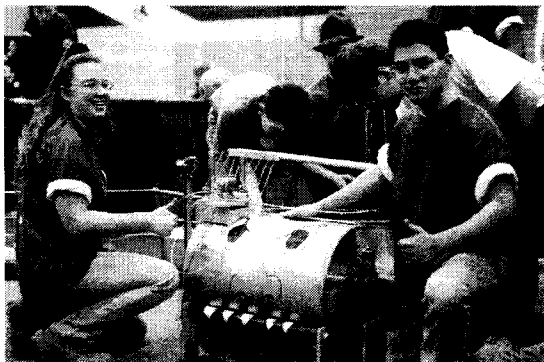


# BHAM-BAM (Bedford, Hanscom, and Mitre—Ball Attacking Machine)

The MITRE Corporation    Hanscom Air Force Base    Bedford High School  
Bedford, Massachusetts

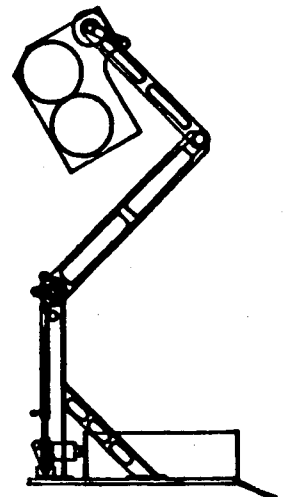


An overwhelming response by the students to participate in U.S. FIRST brought together this unique team from a high school, an air force base and a corporation. The team combines 60 eager students from Bedford's high school and middle school, seven faculty advisors, and seven engineers. A three week late start did not hamper the enthusiasm of the team.



**Bedford,  
Hanscom,  
And  
MITRE —  
Ball-  
Attacking  
Machine**

Whether working on the technical or team spirit areas, enthusiasm grew to a high peak. As one student put it, "Wow!...When I saw U.S. FIRST on TV last year, I never dreamed I'd get a chance to actually participate!" In BHAM-BAM, the dream is alive.



# Parents Get Involved...

Freeport-MIC



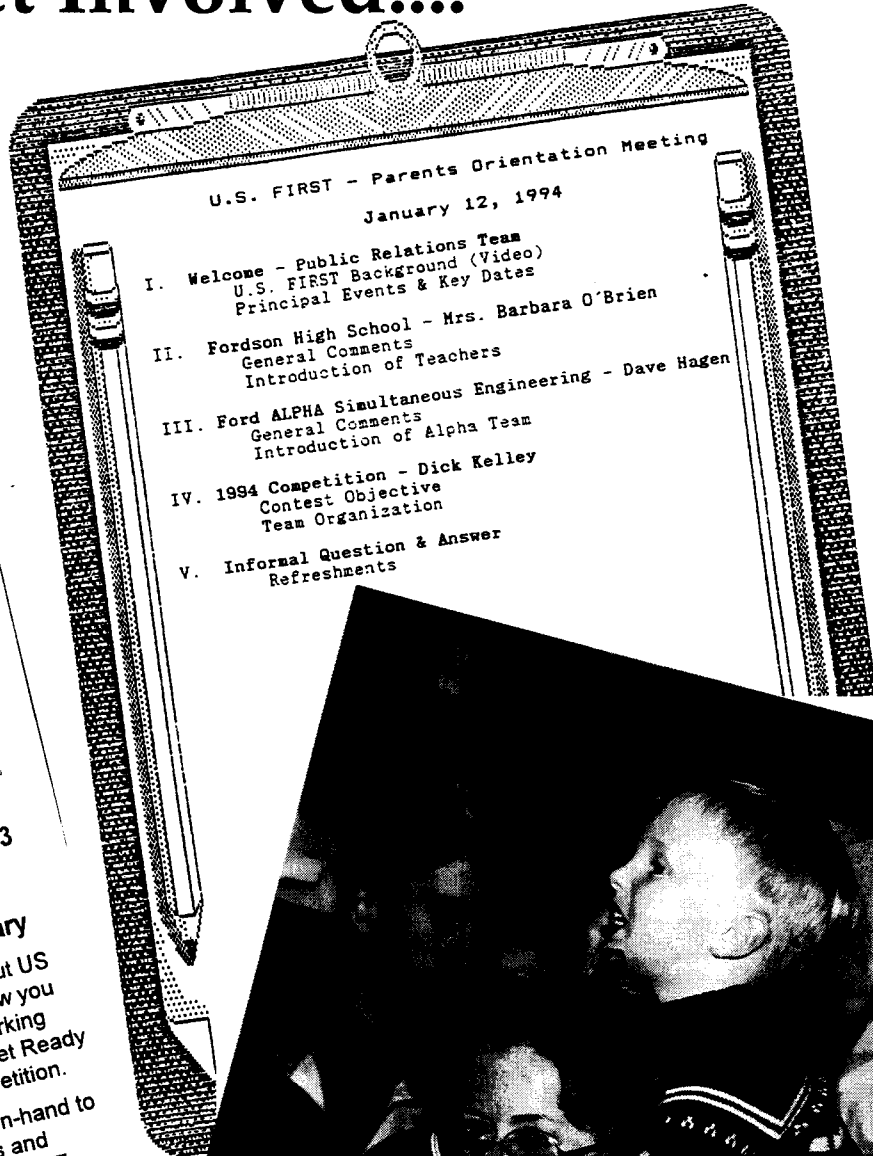
When: Thurs. Feb. 3  
6:30-8:30 PM

Where: FHS Library

Come and learn about US FIRST! We will show you how we've been working since October to Get Ready for the 1994 Competition.

Students will be on-hand to answer questions and explain what US FIRST means to them. You'll see a video of last year's competition - our team will be part of the 1994 video which will be aired on ESPN! See concept models being demonstrated and watch students use computer-aided design to try out ideas. US FIRST is all about inspiring students to take advantage of the educational opportunities that are available - and we share our excitement with you at the Open House!

*Everyone's Welcome!!*



## One Parents' Perspective Mirrors Many.

This is my first year working with U.S. FIRST through Nypro and Clinton High School.

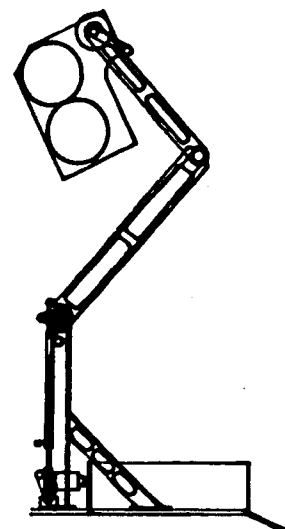
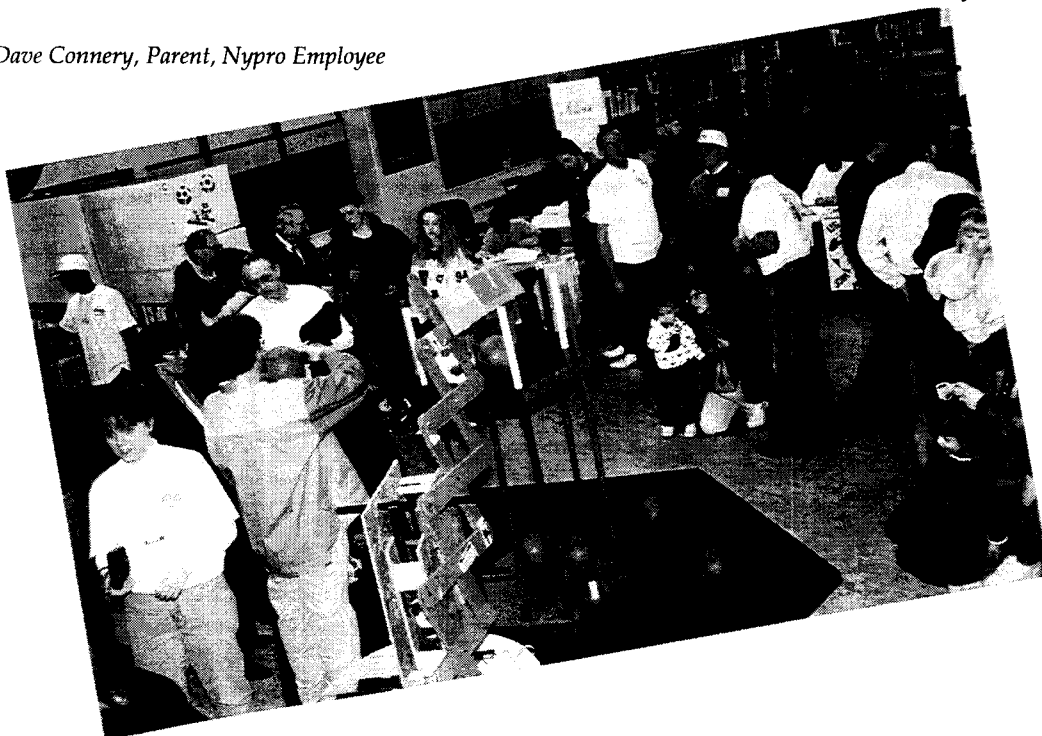
As a Nypro employee for the past 16 years, I was impressed with the way that the professional staff of both Clinton High School and Nypro were able to bring about a viably working team with the eighty students as center point.

I watched bored, disinterested kids turn into energetic, totally involved MEMBERS of the various working teams. This was a remarkably contagious experience for all. I have more at interest in this project than the "WIN." I graduated from Clinton High School in 1969. This type of involvement was not available to me and I am somewhat envious of the eager group that have been able to be involved. I am also a life long resident of the town of Clinton, as is my father, so the pride already bestowed on this town and my work place is tremendous.

My most important reason for becoming involved with the U.S. FIRST project is totally selfish. My sixteen year old son is a participant this year. I am not the only person on the team working with their child; several members have this great distinction. I have had the great opportunity of seeing my son, who is usually consumed with sports or girls, be deeply involved in something totally different, and I can help and understand his thoughts. I watched him and other students make presentations to our Town Leaders, and all town members via the local television network, expressing their feelings toward this competition,

The U.S. FIRST competition helped families become part of the TEAM here in Nypro and Clinton High School; mothers and sons, fathers and sons, mothers and daughters are working side by side with teachers, engineers and friends. We are all reaching out into the community for support and pride in our efforts-win or lose. Even long after the event is over, there will be a group in Clinton that can be on a one to one basis because of this effort. This is a real TEAM, and we feel that we have already won.

*Dave Connery, Parent, Nypro Employee*



# NEMESIS

(Neophyte Engineers Mechanical Elevation System Involving Students)

Northeast Utilities Company U.S. Coast Guard Academy

New London High School Waterford High School

Hartford, Connecticut



“I learned how to use machines that I never used before. I learned to have patience, but more importantly, I learned to work with others.”

*LaShanda Brown, Student*

U.S. FIRST “is a program that can elevate the minds of young adults today and cause them to think more about their future. I hope next year, the program will continue because it made a difference for me..”

*An Huynh, Student*

“The U.S. FIRST Competition was one of the most interesting experiences I have ever had. It was great being able to work with other people from start to finish on a project. ...If we competed again we would be highly successful. I am proud to be part of the team.

*Zachary Grazen, Student*



“The most wonderful aspect about this was how people thought of ways to get the balls up there. There robot designs were not only successful, but were also unique in there ways of going about this task. The fact that I could talk to other teams and learn about their designs and construction, without them thinking of me as a rival, but as a friend, was what I most enjoyed from this experience.

*Student*



This team of 30 students from two high schools, four teachers, 12 engineers and three technicians were structured by major design categories. The weather had a significant impact on the project for the first three weeks.

The team worked as three separate groups struggling to build the drive, lift, and the retrieval components. The Coast Guard Academy worked directly with three students to design a top for the vehicle to hold a minimum of 6 balls and also have the capability to block the goal.

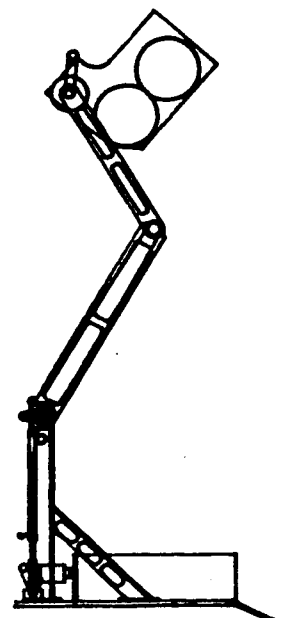
The drive team successfully designed and built a vehicle capable of traveling 15 mph with the lift and top.

The lift team designed a chain drive to lift the vehicle. Due to time constraints, lack of fine tuning prevented lifting more than two balls at a time.

The retrieval team decided on a fork lift design that would give the team the option to lift other vehicles.

When the three sub assemblies were integrated only three days before the shipment deadline, the vehicle was forty pounds over-weight. ...A team decision was made to remove the lift section which weighed forty-five pounds, therefore making it a totally defensive machine.

The beauty of competing though, was evaluating how others solved the problem. We learned how we could have made things lighter by using less rigid components. We look forward to future competitions.



# SummaCat

Summa Four Derryfield High School  
Manchester, New Hampshire



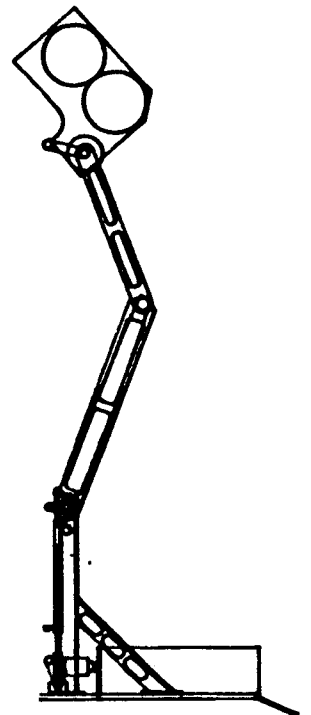
*In December of 1993 we started out as two entities, Summa Four and Derryfield School. Now there is no doubt that certain aspects of our communities are one.*

The bond was built from the turning of raw materials into a machine. The strongest bond in our experience is not from bolts, glue, or welds. The strongest bond is from the interchange of ideas and knowledge to accomplish our goal. It was (and is) wonderful and amazing.





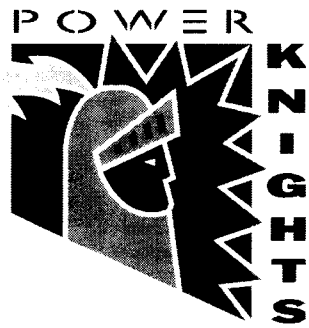
*Looking back, there are many moments that mark our growth as a team. Brief conversations, work done at home, the crystalization of an idea..., but as a team it began in early December. We met at the offices of Summa Four. Our initial meeting took place in a conference room full of mahogany and stuffed leather furniture... That was the last time this group would be so polarized.*





# Power Knights

Public Service of New Hampshire West High School  
Manchester, New Hampshire



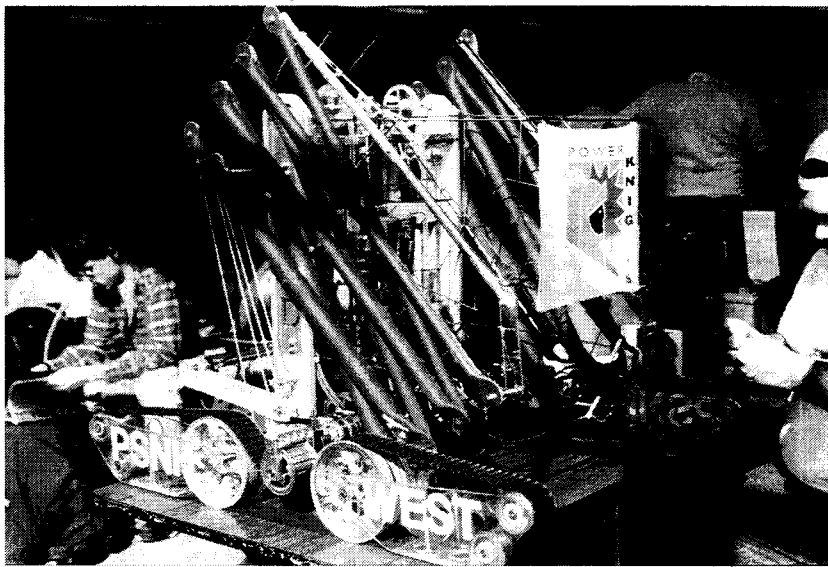
*Our team's goal at the outset was to build an effective team—one in which everyone cooperated, showed sportsmanship, took responsibility, and learned project management skills. In this respect, the 'Power Knights' are indeed champions.*



# INSIGHTER

Published for the Employees of Public Service of New Hampshire

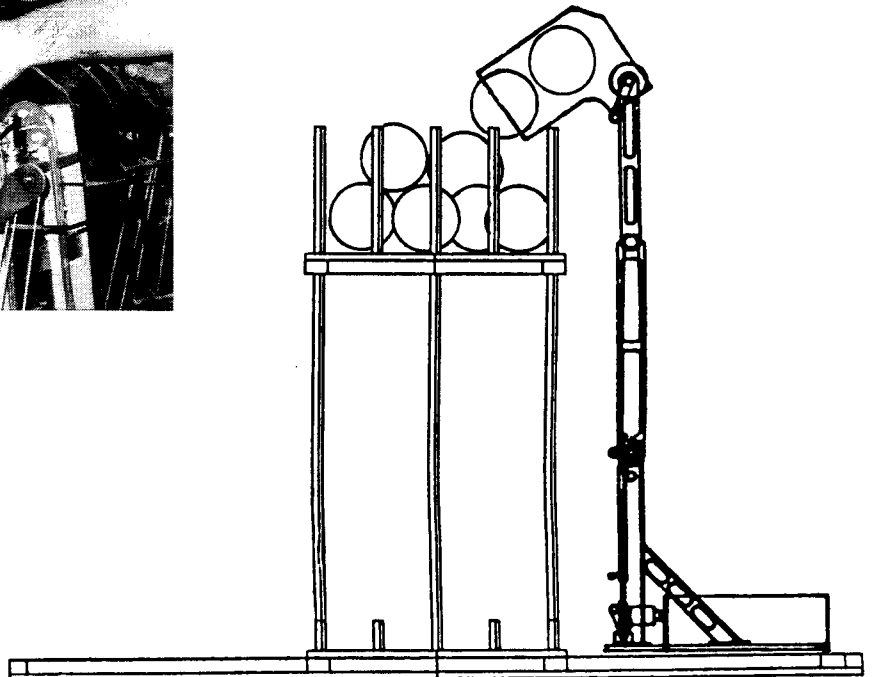
March 11, 1994 • Vol. VIII - No. 5



Com-  
service has been a  
PSNH for many  
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**“We feel it is essential  
that we nurture  
mutually beneficial  
partnerships in the  
communities where  
we do business.”**



# People

A publication for PSNH  
employees and retirees.

## Around The Circuit

MARCH 1994

"We had a very respectable showing for a first-year team," said Jeff Lander, PSNH production administrator-environmental/results. "Our team just kept improving with every match. We hadn't had much practice on carpeting and hadn't anticipated the effect of the rug's traction on our vehicle. But, bit by bit, we solved the mechanical problems that slowed us down."

The PSNH/West vehicle's overall design, with its roller ball pick-up mechanism and scissor-jack design for lifting the ball basket up to the tower's opening, was not particularly unique. It was very strong however, and was the only vehicle that could hold and lift all 12 balls at once and drop them into the upper goal at picking

up balls, it was able to climb over obstacles very easily, and its ball basket could be placed right in the upper goal to prevent other teams from scoring. This last feature was responsible for one of the team's victories.

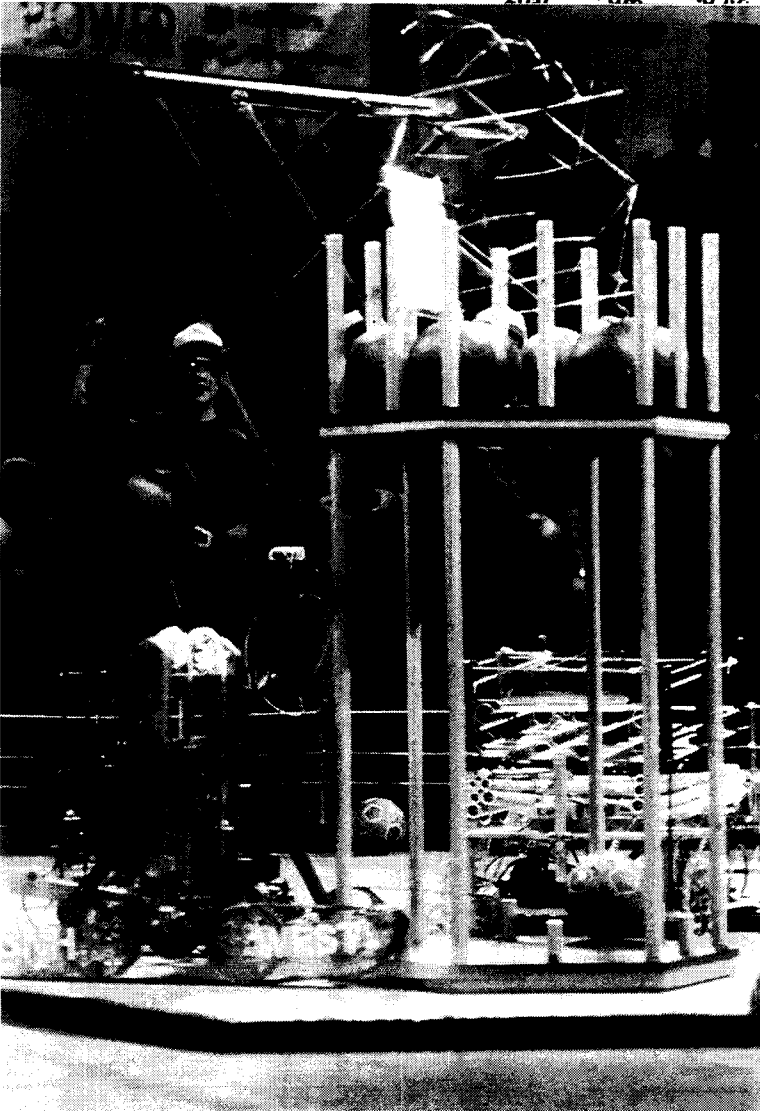
Although this year's competition is over, the PSNH/West team are looking forward to an exhibition match in April with other teams from the area and may include GE Air/Central High, Freudenberg-NOK/Memorial High and Summa Four/Derryfield School.

The exhibition is only one of the ways students can practice for another U.S. FIRST competition. Lander says he sees opportunities to work with teachers in including some of the important concepts, such as acceleration and force, into their math and science curricula.

"The most important goal of U.S. FIRST is to get the message out to as many people as possible that science and technology are fun and interesting, in order to help ensure an adequate supply of technically skilled people for the future," Lander says.

"It's a great experience for the students, but it is also valuable for PSNH and the employees who participated. For young New Hampshire people to look at PSNH in a different way, to have close interaction with employees and actually come into our facilities and see what we do, is extremely important." ●

- Audrey Lund





# Soccer Stalker

Lockheed Sanders, Inc. Nashua High School  
Nashua, New Hampshire

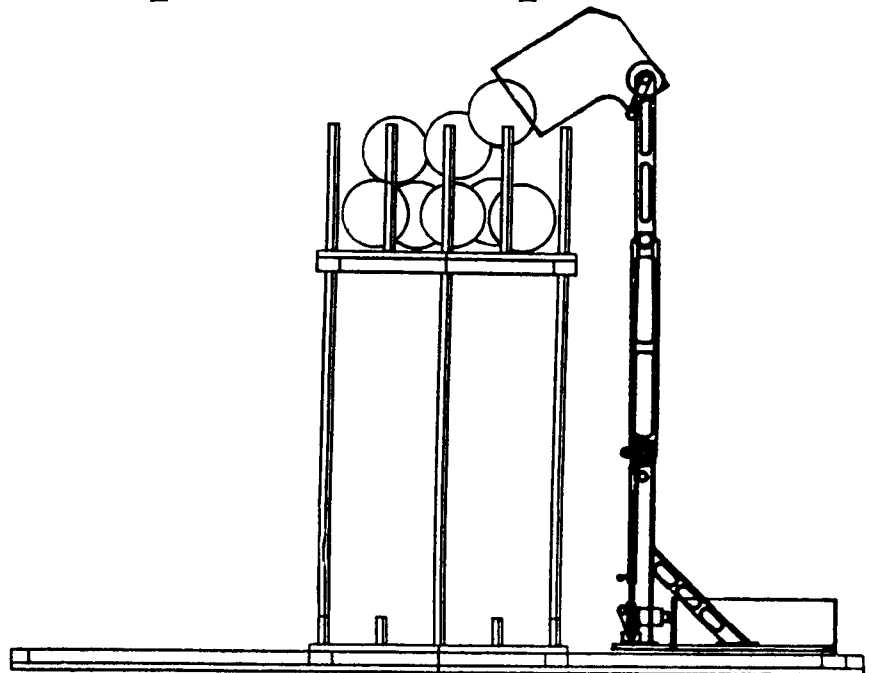
"What we have allowed the students is a taste of reality. Not only do they have a voice on the team, they also get dirty. They have to do just what the 'Sanders' people do. They get to see what it's really like to prepare for a design review, to answer questions of our executive review panel rather than tell the review panel what they feel like telling them.

*Fred Dehner, Engineer*

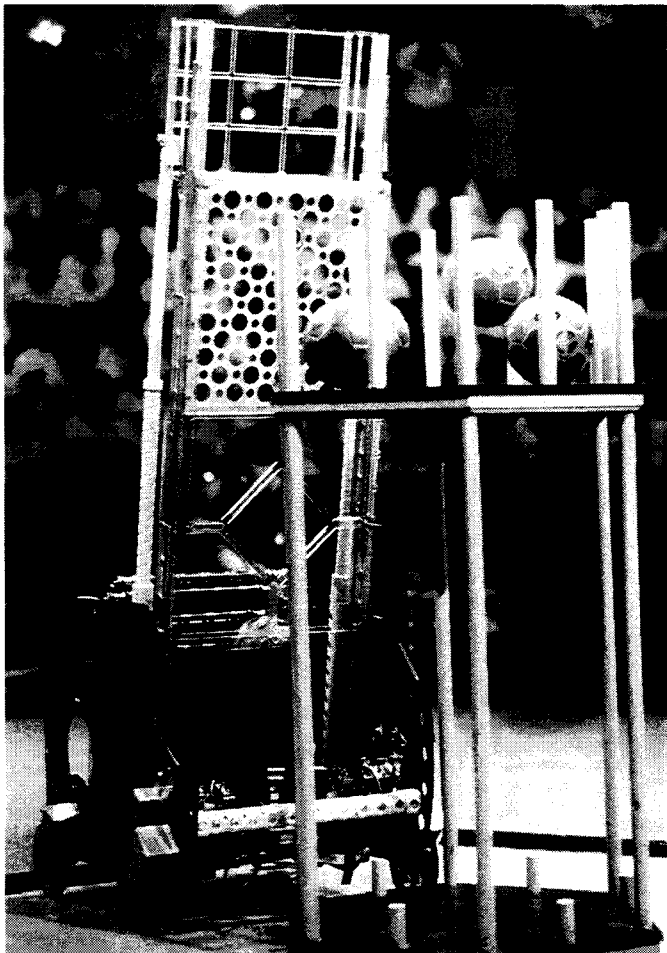
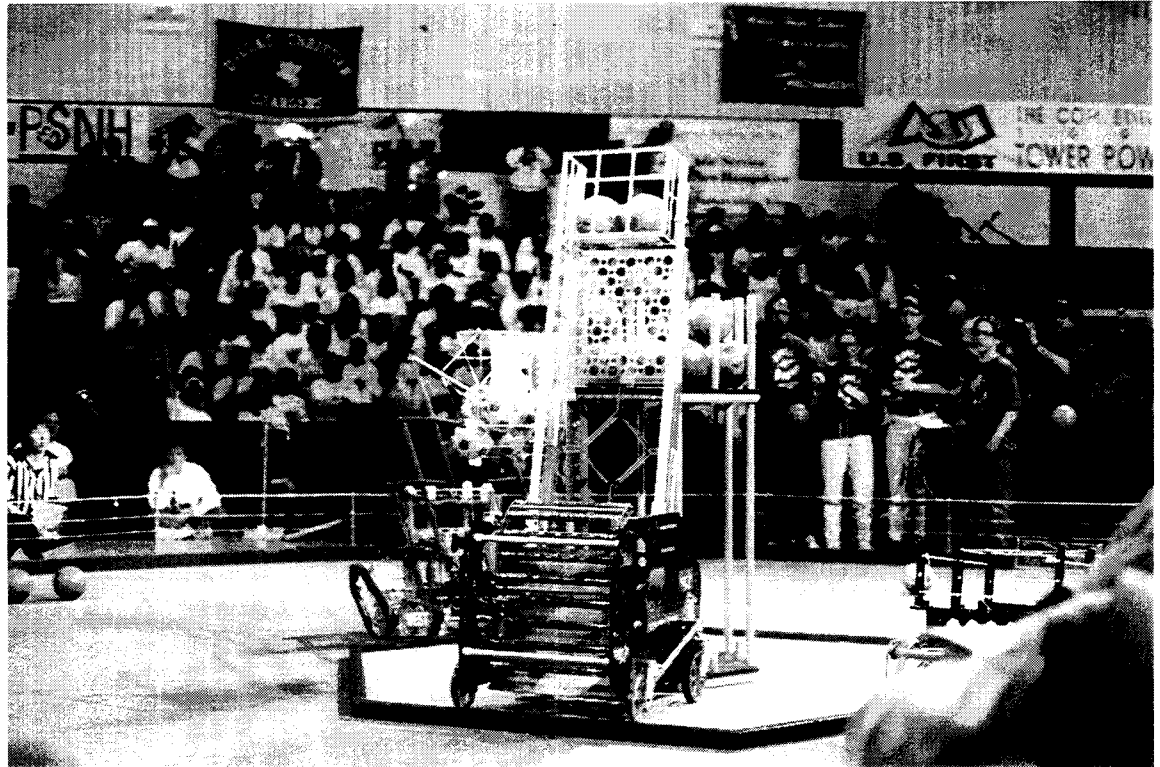


**"This prepares you  
for the future."**  
*Vikas Sood, Student*

## Best Sportsmanship Award







"The students experience how people work together, how they don't work together, the pressures of time and stress. It really reflects what happens in the real world."  
*Dan Velasco, Engineer*

"Some of the Sanders Engineers are Nashua High School graduates, and we are awfully proud of them to begin with, but it makes us happy that they came back to the high school to contribute. This is total education at work."  
*Ronald Jean, Principal, Nashua H.S.*

