

Beautiful Hot Spot

Admin Division Holds Picnic Despite the Heat

Friday, July 14 had to be one of the hottest days of the summer, but over 60 employees and their families still showed up for the Administration Division picnic at Inis Grove Park.

"It was a beautiful spot, but it was hot," says Steve Karsjen, manager for Public Affairs and chief cook for the event. "Liquids were very popular. The main goal of those who attended seemed to be to eat and get back to their air-conditioned vehicles," he adds with a laugh.

Karsjen grilled hamburgers and brats to well-done perfection, purposely trying to avoid a repeat of last year's underdone brat disaster.

Although volleyball was available, no one played — no one that is except little Augie, Kate and Dan Sordelet's miniature dachshund, who, according to Dan, enjoyed the frolicking more than the food. He instantly popped a 10-inch blue rubber ball belonging to four-year-old Katy, daughter of Lynnette and Jeff Witt. However, Dan says, "It took him over five minutes to chew up a small piece of one of Steve's well-done hamburgers." ■



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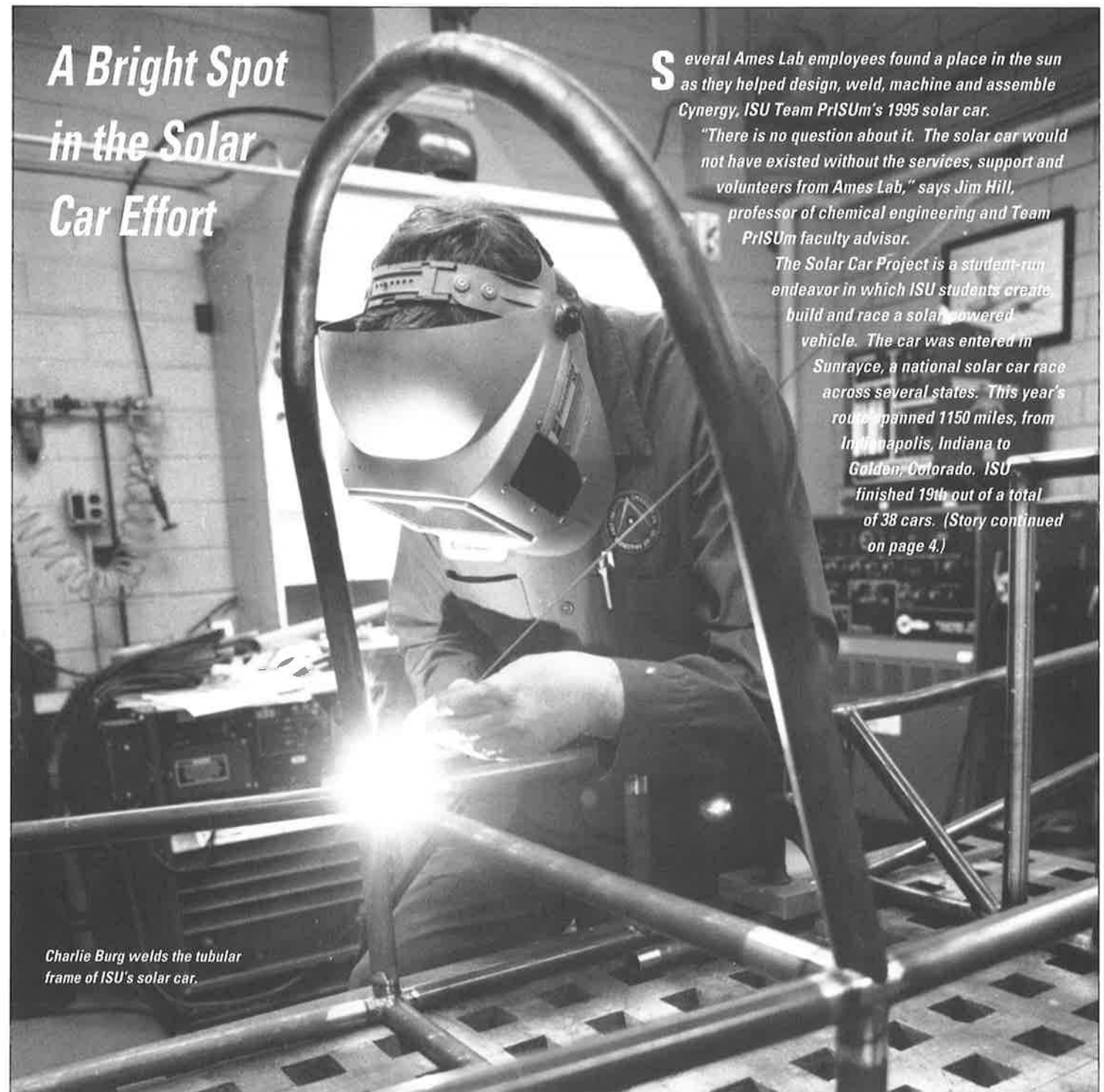
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A Bright Spot in the Solar Car Effort

Several Ames Lab employees found a place in the sun as they helped design, weld, machine and assemble Cynergy, ISU Team PRISUM's 1995 solar car.

"There is no question about it. The solar car would not have existed without the services, support and volunteers from Ames Lab," says Jim Hill, professor of chemical engineering and Team PRISUM faculty advisor.

The Solar Car Project is a student-run endeavor in which ISU students create, build and race a solar powered vehicle. The car was entered in Sunrayce, a national solar car race across several states. This year's route spanned 1150 miles, from Indianapolis, Indiana to Golden, Colorado. ISU finished 19th out of a total of 38 cars. (Story continued on page 4.)



Charlie Burg welds the tubular frame of ISU's solar car.

Story continued on page 4.

An Afternoon of Science

ISU President Jischke Visits Ames Lab

To get a better understanding of Ames Lab's cutting-edge research, ISU President Martin Jischke spent the afternoon of July 25 visiting a number of laboratories. He also met with the Lab's executive council and program directors and toured TASF. At an open forum with Lab employees, Jischke said, "I'd like to express to all of you the importance I attach to the Ames Laboratory and its relationship to Iowa State University. It is difficult and

frankly scary to contemplate what Iowa State would be, particularly in the physical sciences in areas related to materials, were it not for the presence of the Ames Laboratory. Some of the most distinguished scientists on this campus and some of the most esteemed graduates have come through Ames Lab. ... I hope you know how much I and others appreciate the contributions you've made to Iowa State University. Keep up the good work." ■



Inside Scoop Digging Around in Europe

Like a paleontologist chiseling around a half-buried fossil to unearth clues about an earlier time, Kay Hannasch digs through the myriads of books and documents in the libraries of Munster, Germany, searching for leads to her ancestry.

A chemical safety specialist in the Environment, Safety and Health Group, Kay has teamed up with her husband, Dick, to become family paleontologists of sorts. After completing much research together, this investigative team has uncovered fascinating genealogical information about the family tree.

"It has been an incredible experience to discover interesting things about our past and locate documents that describe our ancestors' lifestyles," says Kay.

Equipped with only the names of relatives and the cities where they were rumored to have lived, Kay and Dick traveled to Europe in 1992 and began their genealogical quest in the cozy town of Munster, Germany, excavating some family history from the city archives. "We received excellent help in finding information," says Kay. "Europeans keep detailed records and are really into preserving history and heritage."

With the guidance and advice they received, the amateur detectives were able to dig up a treasure of information from the archives. They found details about their ancestors' birthplaces, churches they attended and family occupations.

"We discovered that Dick's ancestors were once weavers and linenmakers, and my ancestors were responsible for lighting the gas lamps in the streets at night," says Kay.

"It was a huge rush to discover these things. Everyone warned us that it usually takes several trips and a long time to find information, but we found a great deal within 90 minutes. We just



Kay Hannasch

couldn't believe our luck," she says.

These tourists-turned-detectives did not conclude their search with the Munster city archives. They set out on a genealogical scavenger hunt and located the churches, streets and cities mentioned in the records.

"It was amazing to stand in the actual building where our relatives were baptized and went to church many years ago," says Kay. "We even lit some of the church candles in memory of our ancestors."

Kay and her husband spent 10 days in Europe. In addition to fulfilling some genealogical research dreams, they visited Paris, Amsterdam and Belgium.

"Everything is so ornate and beautiful in Europe. We got around fairly easily and had a wonderful time," she says. "We toured museums in Paris and the Anne Frank house in Amsterdam."

Kay says she and Dick will journey back to Europe in April 1996. "We're especially excited about returning to Munster," says Kay. "It felt like we were home when we were in Germany."

I can't wait to go back," she adds. "In the meantime, I'll continue doing genealogical research here until we visit Germany again next year." ■

Going After the Big Boys

When Marek Pruski got married in his hometown of Torun, Poland, his parents gave him the choice of a new suit or a kayak for his wedding gift. He took the kayak.

The choice was easy to make because Marek and his wife, Beata, are kayaking enthusiasts and had included the canoe-like craft on their wedding wish list.

The kayak allowed Marek and Beata to investigate many isolated river regions, and it also provided Marek the best means to indulge his passion for fishing in nature's more difficult to reach places, a passion that grew even stronger when he came to the United States in 1985 to join the Lab and Bernie Gerstein's research group.

At the Lab, Marek, physicist and head of the nuclear magnetic resonance group, found that Gerstein and Fritz Franzen shared his enthusiasm for fishing in secluded places. Before long the three of them and a close friend of Marek's, David Shogren, were paddling and portaging the wedding-gift kayak through the swamps of the remote Boundary Waters territory between the United States and Canada.

"Portaging and paddling are good exercises for the body, but they are also very refreshing for the mind," says Marek. "Everyday problems are replaced by thoughts of weather, bears and big fish," he adds with a laugh.

"It was Fritz who first told me about the Boundary Waters," says Marek, who has since taken yearly fishing trips with his son, Jacek, to Quetico, on the Canadian side of the Boundary Waters. It's a tradition that also includes David Shogren and his son, Fisk.

The fathers and sons fish for northern, walleye and bass. "We're really going for the big boys, as we call them, which means they weigh in the teens or twenties in pounds," says Marek. "We keep only what we need to



Marek Pruski

eat, and we never keep big fish. We release them as soon as possible without hurting them."

Marek, David and their sons have caught their share of big fish. On their first trip to Quetico, when the boys were both 10, the fathers caught 18-pound pike within minutes of one another. The next day their sons each caught 12-pound pike. "They were so happy," recalls Marek, whose largest catch was a 23-pound northern, which he was able to release unharmed. The best year for the fishing foursome was 1994, when they caught 22 fish over 10 pounds and three fish over 20 pounds.

It's not unusual to catch big fish in the Boundary Waters. The territory is protected and accessible only by canoe. Not many people make the rugged journey to some of the lakes, which allows the fish to flourish. Marek says in some places it's possible to get 50 a day.

Although fishing is exceptional in the Boundary Waters, Marek says it's the total wilderness experience that draws him back each year. "The territory has been left the way it always was. Moose, wolves, eagles, bears—we see or hear them all. The nature is astonishing. And what can be better than experiencing it with close friends and members of your family." ■

UNUSED PROPERTY/EQUIPMENT

Unutilized Ames Lab government property/equipment is being stored in the Warehouse pool area. A list of these items is posted outside the Storeroom window, 160 Spedding. For more information about available property, call 4-5678.

POLO SHIRTS FOR SALE

Friday, September 1, is the deadline for buying Ames Lab polo shirts. If you are interested in placing an order, please contact the Public Affairs Office in 111 TASF. Several colors are available.

DON'T TOSS THE TUBES

Used fluorescent tubes are no longer to be disposed of in waste containers or dumpsters. Please contact the custodian in your area or call Facilities Services at 4-3756 for proper disposal.

TRAINING SCHEDULE

NEW EMPLOYEE TRAINING
 September 7, 14, 21, 28
 8:15-11:45 a.m.
 Held in 305 TASF
 September 11, 18, 25
 1:15-4:45 p.m.
 Held in 305 TASF

HAZARDOUS WASTE MANAGEMENT
 (Call Beth Lott (4-9972) to reserve)
 September 20
 10-11:15 a.m.
 Instructor: Kay Lampe
 Hannasch
 Held in 305 Spedding

SEXUAL HARASSMENT AWARENESS
 (If your program is identified on two separate training dates below, please be aware that a session may be full because your Program's size exceeds the capacity of the training facility.)

Processes and Techniques Program
 August 23
 10-11:30 a.m.

Processes and Techniques Program & Environment, Safety and Health Group
 August 29
 2-3:30 p.m.

Ames Laboratory Directors' Office, Information Systems, Environmental Sciences Program, & Occupational Medicine
 September 6
 2-3:30 p.m.

Metallurgy and Ceramics Program, Travel and Project Management Office, & Scientific Computer Services
 September 12
 1:30-3 p.m.

Metallurgy and Ceramics Program, Materials Preparation Center, Internal Auditor, & Office of Assurance and Assessment
 September 19
 10-11:30 a.m.

Engineering Services
 September 27
 10-11:30 a.m.

MARLOK KEYS

For some unknown reason, about one percent of the Marlok keys are failing to function properly. This is usually the result of the key reader not recognizing the original key code. When this happens, Facilities receives an "Unknown Key" message, and they have no way of tracking whose key went bad.

If you enter your key into a Marlok on a door for which you are authorized and the red LED does not turn green, try inserting the key the other way — sometimes only one side of the key goes bad. Whether this works or not, please contact Facilities Services as soon as possible and another key will be issued to you.

SERVICE WORK IN ISU RENTED SPACE

Because ISU owns the rented space occupied by Ames Lab, there are limits to the amount of facilities support the Lab can provide employees housed in those areas. University support and response time is also limited due to budget restrictions.

In the past, ISU has been responsible for the building structure and utilities going into the rented space. Ames Lab's Facilities Services Group has been responsible for research utilities and equipment within the space. In some cases, circumstances may shift responsibility from one group to the other. To provide a single point of contact and simplify the service request process, Facilities will route all repair requests and Service Order Requisitions as follows:

1. Requestor contacts Facilities for all repair requests and service order requisitions for rented space.
2. Facilities will help determine whether the Lab or ISU will be responsible for the work to be done.
3. If ISU is responsible for the work to be done, Facilities will notify the requestor and forward the request to ISU. Facilities will follow up on ISU progress.
4. If Ames Lab is responsible for the work to be done, the request will follow existing Facilities procedures, and the work will be scheduled.

If you have any questions, please contact Facilities at 4-3756.

In the Spotlight



David Jiles, senior physicist, was elected a Fellow of the United Kingdom's Institution of Electrical Engineers (IEE). Jiles, who was elected Fellow of the UK Institute of Physics in 1988 and the U.S. Institute of Electrical and Electronics Engineers in 1993, was cited for his work in magnetism and magnetic materials. Fellow is the highest professional honor that the institution confers on its members.

"It was particularly good to be elected Fellow of IEE, which counts among its former members physicist Michael Faraday, one of the founding fathers of the science of electromagnetism," says Jiles.



George Burnet, associate of Ames Lab and interim dean of the College of Engineering, retired on July 1 after working at Ames Lab and ISU for 39 years. Burnet was a senior engineer at Ames Lab and did research on solid waste management and the recovery of metals from coal fly ash. "I plan to stay in Ames," he says. "I'm looking forward to traveling to see my six children as well as spending more time boating. I also have some grandsons who are anxious for fishing trips," he adds with a smile.

The Best Around

Iowa Teens Take Top Supercomputing Honors in D.C.

They were the big winners at Ames Lab's Adventures in Supercomputing (AiS) Expo in April, but that wasn't enough for an all-girl team from North Polk High School in Alleman, Iowa. In June, the girls proved they were the best in the nation when they captured first place for their supercomputing project on particle physics at DOE's National AiS Expo in Washington, D.C. Competing in their second National AiS Expo, the North Polk girls won over student teams from Alabama, Colorado, New Mexico and Tennessee.

Another team from North Polk added to the school's supercomputing victory by taking third place at the national competition with their project on a hypothetical asteroid planet. Both North

Polk teams will receive hardware and software prizes for their school. The first-place winners and their coach will also attend Supercomputing '95 in San Diego, California.

Barbara Helland, acting program director for Applied Mathematical Sciences and the 1995 AiS national coordinator, says the North Polk teams went to Washington, D.C., well prepared for the competition. "It was a very close competition, but the students worked hard and did well, gaining a much greater awareness of computational science in the process. Through their participation in the AiS program, they have become more technically and scientifically literate and so are better prepared for the future."



Winner of the National AiS Expo, the North Polk High School team includes, front row, left to right: Angel Sheriff and Jessica Greubel, and back row, left to right: Anna Keyte, Bruce Bennett (teacher and team coach) and Kellan Brumback.

A HINT™ of Things to Come

Lab Receives R&D 100 Award

A new computer benchmark developed by John Gustafson, computational scientist, and Quinn Snell, research assistant, has received a 1995 R&D 100 Award. The award is presented by Research and Development Magazine to the 100 most significant new technologies introduced into the world market each year.

The benchmark, called HINT™ (Hierarchical INTEgration), cuts through different computer languages, precisions, speeds and designs to provide a more accurate measure of a computer's full range of performance. Using a work measure called QUIPS, or QUality Improvement Per Second, also developed by Gustafson, HINT determines the amount of work a computer can perform

over time. Gustafson says this is a more realistic method than those that use misleading specifications such as the megahertz rating to measure total computer performance. HINT can be ported to a variety of computer architectures, and therefore has applications for all types of computers, ranging from personal computers to sophisticated supercomputers.

This year's award marks the third time Gustafson has been recognized by R&D Magazine. His previous awards came in 1989 for demonstrating parallel processing in a practical problem and in 1991 for developing the SLALOM bench-mark, a precursor to HINT. ■



John Gustafson, left, and Quinn Snell are the developers of HINT™, a new award-winning computer benchmark.

Ames Lab Employees: A Bright Spot in the Solar Car Effort

Continued from page 1

Students are responsible for finding technical expertise and collaborating with people who can help them build a cutting-edge vehicle. This year, as in previous years, Ames Lab provided essential technical support and talent.

Ames Lab machinists, engineers, electronic technicians and administrators provided design skills, technical advice, shop time and enthusiastic support to help create a Team PrISUM solar car. Hundreds of hours were spent planning, designing, welding and assembling this unique vehicle for the July race.

"We really pulled together," says Charlie Burg, Ames Lab welder. "It was wonderful to collaborate with the students and help them out. I think Ames Lab really made a difference that we can be proud of."

"We consider Ames Lab part of our team," says Hill. "The Lab has been involved since 1989 when the first solar car became a university-wide project."

A Bright History

ISU's first solar car was the idea of a group of students in the Tau Beta Pi engineering honor

society. With the help of some faculty members, the students began discussing the feasibility of entering a solar car in Sunrayce 1990. The group was hungry for technical expertise and sought direction and advice from Ames Lab.

Rollie Struss, division director for Operations, organized some of the Lab's talented people around the project and obtained funding for PrISUM.

"Rollie Struss was instrumental in getting Ames Lab people involved," Hill emphasizes. "He supported the solar car and created a lot of enthusiasm for the project within Ames Lab."

"Since the first car, Ames Lab has continued to contribute money, and more importantly, the Lab's engineers, electronic technicians, welders and machinists have donated their time and talent," says Struss. "And each year additional Ames Lab employees have become involved and interested in this project. Many of these people came in on their own time on nights and weekends and helped with the solar car."

Today, Struss continues to serve as an important liaison



Ames Lab members of Team PrISUM include, front row: Terry Herrman and Jeff Osborne; middle row: John Hjortshoj, Jerry Hand, Lee Harker and Bill Wing; back row: Kent Mogard, Charlie Burg and Jim Berninghaus. Not pictured: Steve Lee.

between the PrISUM team and Ames Lab.

Engineering Sparks Some Creative Ideas

ISU students working on the 1995 solar car needed the guidance and expertise of engineers, such as those at Ames Lab, who could transform the solar-car concept into a real-world, cutting-edge creation.

"I was involved with the first solar car when I was an ISU student working at Ames Lab," says Terry Herrman, Ames Lab mechanical engineer and non-faculty advisor to the solar car team. "Now I work full-time for Ames Lab, and I've stayed very involved."

Herrman helped design the car's frame and mechanical systems using Autocad, a computer program that assists engineering design. "I put the car together on Autocad, and after obtaining most of the parts from the Lab's machine shop, the students put the real car together."

Herrman spent many weekend and evening hours working on the solar car, and even spent his vacation following the Sunrayce

team through several states. "This really became a full-time hobby," he says. "It was something I just could not put down." Herrman recalls dreaming about the car and coming up with some ideas in his sleep. "You know a project has really affected you when you start dreaming about it," he says with a chuckle.

Jeff Osborne, co-director of the ISU Solar Car Project and an Ames Lab design engineering aide, also made significant contributions of time and talent. Osborne designed the suspension system, secured crucial corporate sponsorship and worked on the car's mechanical systems. "Jeff worked many long hours and connected with companies that donated their time and services to the project," says Herrman.

Ames Lab electronic technicians helped assemble the solar car's electrical systems and gave the students advice and information regarding the solar cells. "Lee Harker and I worked with the students and helped them design and build the car's electrical components, such as the turn signals, brake lights and battery monitors," said John

Hjortshoj, electronics technician. "We enjoyed spending time with the students and had a great time being involved with the project."

"This truly was a group effort and a team project," Herrman says. "Although I was involved with both the design and the mechanical systems, my part was only one piece of this big, big project."

Machine Shop Talent

A state-of-the-art solar car not only needs the creativity of skilled engineers, it also needs the talents of machinists and experienced technicians who make the parts specified by the engineers.

"We put a car together in six months, and it was only possible because of the hard work of Ames Lab machinists," says Herrman. "They are very skilled and put in a lot of hours on this project. When we asked for something, they completed it very quickly and accurately and were always willing to help."

Charlie Burg contributed many nights and weekends working with Iowa State students, piecing together the car's tubular frame. Burg says his desire to provide engineering students with essential hands-on experience kept him motivated.

"I came in after work and on weekends because I feel it's important that tomorrow's engineers get some good hands-on experience today," says Burg. "It really is the best way to learn."

"Besides," quips Kent Mogard, senior lead machinist, "Charlie is just a really good guy."

For Mogard, this was like every other job. "This was all in a day's work. Terry Herrman brought us the drawings, and we made the parts just like we would for any other job. It was a good project to be involved with. This year's solar car was the best design so far," he notes.

Jerry Hand, machine shop



Team PrISUM's slick solar car glides toward the Sunrayce starting line.

supervisor, and senior machinists, including Steve Lee, Bill Wing and Jim Berninghaus, also created essential parts for the solar car. "This really was a team effort," says Lee. "We were glad to be a part of something so exciting. We really worked together to make it happen."

"We also had help with the batteries, frame and painting from Facilities Services staff members Ron Foderberg, Ralph Appelgate and Dan Eyanson," adds Herrman.

A Sunny Future

Team PrISUM will spend this year organizing and gathering support for the 1997 Sunrayce. Team PrISUM members, project advisors and ISU faculty, hope that Ames Lab will continue playing a pivotal role in the Solar Car Project.

"We look forward to working with Ames Lab again on the next solar car," says Hill. "We hope they will continue their much-appreciated support."

Jeff Osborne adds, "We couldn't have done it without Ames Lab, and we thank them for the talent, time and commitment they have contributed to the Solar Car Project."

The Ames Lab employees who worked on the solar car also look forward to being involved in the years to come. "I'm sure Ames Lab will continue to support the solar car," says Struss. "There are so many employees involved now, and I'm sure their involvement will continue." ■

Long Past Due

Emergency Equipment is Put to Use After 30 Years

They were purchased in the early 1960s as part of the Lab's civil defense preparedness effort during the Cold War era. There were 626 of them, but the stackable, aluminum emergency cots, boxed in pairs and stored in the void ceiling space above the vault in 201 Spedding, remained in their unopened boxes for over three decades.

Then early this year, Mark Godar, former manager for Facilities Services, now working at Grinnell College, and Ralph Appelgate, supervisor for mechanical services, decided it was time to clean house. Through Godar's contacts as a member of the Story County Local Emergency Planning Committee, he and Appelgate arranged and coordinated the transfer of the cots to the Story County Emergency Management Agency. That

agency, in turn, placed the cots with the American Red Cross and other agencies in and around Story County to be used in shelter systems for disaster-relief purposes.

In a thank-you letter to Ames Laboratory, Lori Morrissey, Story County emergency management coordinator, said, "The Story County Emergency Management Agency extends its utmost thanks for the donation of the 626 aluminum stackable cots received from Ames Laboratory. The communities of Story County and surrounding counties have benefited from this donation and are much more prepared for disasters due to your thoughtfulness." ■



Ames Lab's solar truck made its acting debut June 14 when the Department of Natural Resources (DNR) featured the Sun Ranger in a Fox 17 Kid's Club commercial. The DNR filmed the spot for Fox's Planet Patrol segments. The commercial is designed to spark children's interest in environmental issues and increase awareness of

environmentally sound inventions and practices. The brightly colored solar truck was the perfect example of Earth-friendly transportation. The spot airs in Kid's Club segments on Saturday mornings.



ISU students conduct routine maintenance on the solar car in St. Francis, Kansas.