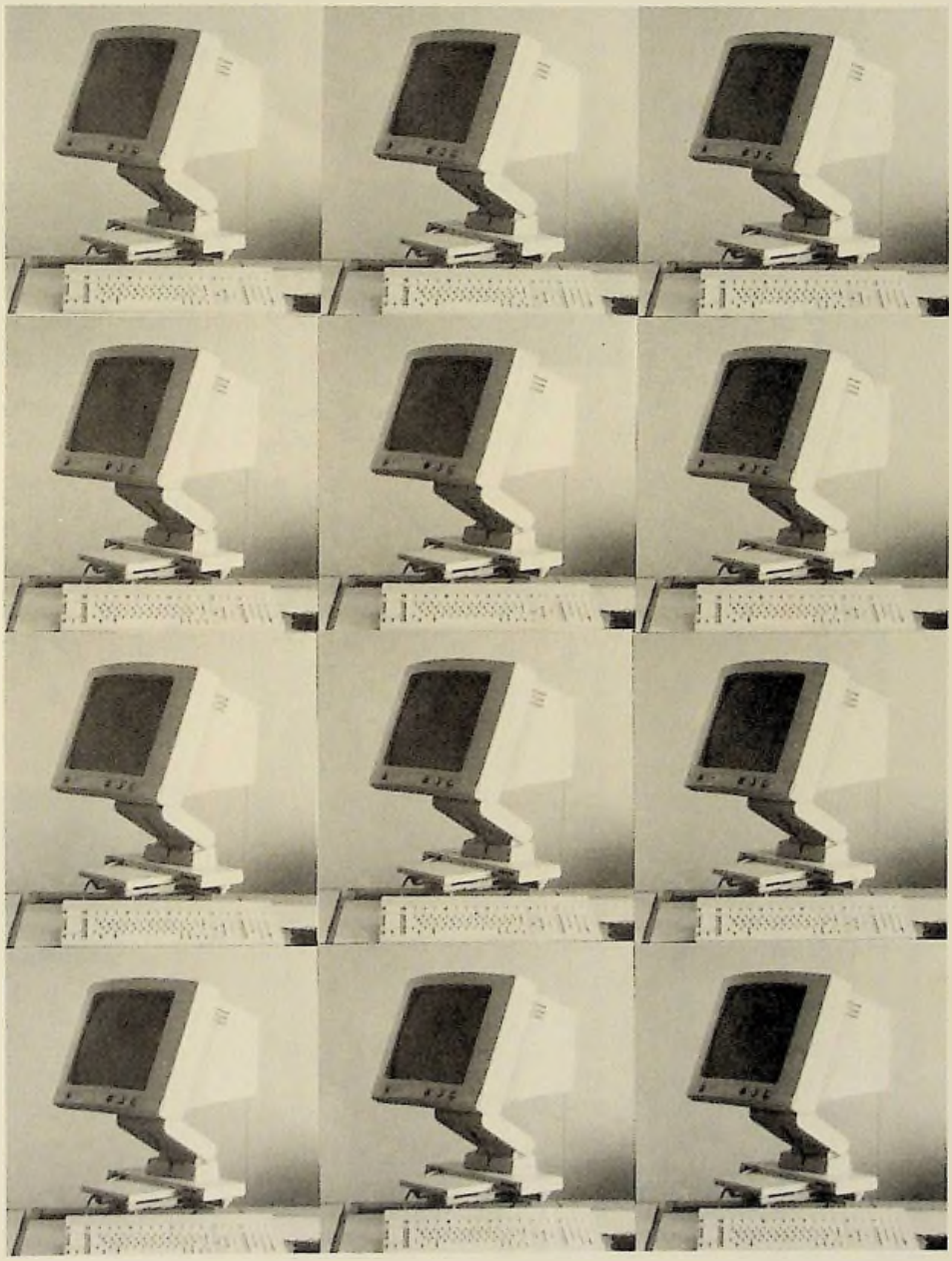
SPERRY

TWIN CITIES NEWS

April 1986



Artificial intelligence knowledge systems products are being donated by Sperry to selected universities, including the Minnesota State University System. *See the story on page 1.*

SPERRY

TWIN CITIES NEWS

April 1986

Sperry awards AI grant to state universities

Students of the Minnesota State University System will soon have the opportunity to gain hands-on experience in an emerging technology that has the potential to fuel the second revolution in the computer industry.

Artificial intelligence (AI), the field of using computers to mimic human reasoning and sensing, is predicted to be one of the major technologies in the next decade with an estimated $5 billion market by 1990. The Minnesota State University System (including Mankato, St. Cloud, Winona, Bemidji, Southwest, Moorhead and Metro state universities) has been awarded an AI grant by Sperry Corporation that includes hardware, software and training valued at over $127,000. The AI grant, which is the first of its kind awarded by Sperry in the state of Minnesota, is part of the company's $1.4 million artificial intelligence grant program aimed at promoting the use of AI systems in diverse university departments where creative applications will be developed. Ten other major universities in the country are also grant recipients.

Larry L. Walker, director, Knowledge Systems Center, said, "Artificial intelligence and expert systems are the next echelon in computer evolution and offer dramatic opportunities, especially for universities. By awarding AI tools and training to universities, we are applying our systems integration technology to lift AI from the laboratory environment and bring it into production-level use on a multi-user basis."

Sperry has made a major commitment to developing artificial intelligence systems, and has established a national Knowledge Systems Center in Bloomington, Minn. This AI research center oversees the activities of 225 researchers supporting the development of AI applications in universities as well as industry and government. To support this AI effort, Sperry is committing $250 million over the next five years. Sperry's primary focus in AI research has been the development of expert systems.

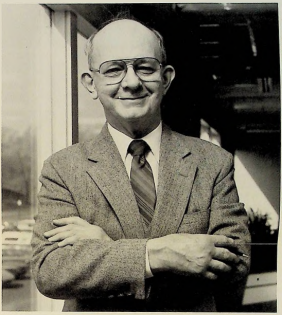
An expert system is a software system that supplements the decision-making processes of human experts. The system uses a knowledge base and a set of rules to solve problems. The knowledge base usually consists of information that is widely shared, publicly available and generally agreed on by experts in the field. The rules are the criteria and procedures that experts in the field use to formulate their recommendations.

This new generation of software can assist decision-making in diagnosing diseases, planning experiments, designing circuits, determining equipment failures, interpreting data and configuring equipment.

Sperry's grant to the state university system includes a Sperry EXPLORER* System workstation and the Knowledge Engineering Environment (KEE)**, state-of-the-art hardware and software tools used in the development of expert systems. In addition, education and system support is included for the EXPLORER/KEE System. The system will be jointly shared by the state universities and will initially be installed at St. Cloud State University.

A mutually beneficial relationship has developed between Sperry and the Minnesota State University System that includes the placement of a large number of graduates with Sperry and Sperry customers, as well as student and faculty internships and scholarships supported by Sperry. The State University System for Administrative Processing and Academic Computer Services uses the Sperry 1100 Series systems developed and manufactured in Minnesota.

*EXPLORER is a trademark of Texas Instruments Incorporated.
**Knowledge Engineering Environment and KEE are trademarks of IntelliCorp.



Art Kotz, principal engineer, Industrial Engineering, Information Systems Products and Technology, began his career the day the doors opened for Engineering Research Associates (ERA).

Employees recall ERA beginnings

The incorporation of Engineering Research Associates (ERA) in St. Paul in 1946 can be pinpointed as the birth of Sperry's computer operations in the Twin Cities. The following two interviews with Art Kotz and Roy Berg tell a little about ERA's early operations at the start of the computer age.

Art Kotz

by Barbara Fischer

Forty years ago the doors of Engineering Research Associates Inc. (ERA) opened to the electronics revolution. What was it like to be at the front end of this era? There are some at Sperry who remember well, such as Art Kotz, principal engineer, Industrial Engineering, Information Systems Products and Technology.

Kotz joined ERA in its infancy. "I met Bill Norris when I was in the Navy and he was a commander in the Navy," recalls Kotz. "He was one of the people organizing Engineering Research Associates at that time. The word was out that a new company was being formed and anybody looking for work should talk to Bill Norris."

At that time, Norris was an officer in the U.S. Navy's cryptology office. (Norris later went on to found Control Data Corporation. He retired from the company as chairman in January.) "I went up to his office and he interviewed me," said Kotz. "After he checked me out, he said I was on the payroll. That's when I came to ERA." But Kotz' first experience with computers had earlier beginnings.

Continued on page 3

Project Business — a 'future' investment

Because tomorrow's business leaders are in today's classrooms, a program aimed at preparing students for the fast-paced, competitive world they'll soon enter has proved to be an invaluable experience. Invaluable for students, teachers and for 14 Sperry employees like Jan Gacke and Sid Tull.

Project Business, a program of Junior Achievement, teams community business people with classroom teachers to give high school students a firsthand introduction to the American business system. The consultant visits the classroom one day a week during a semester to help blend the realities of actual business experience with textbook theory. Topics include the nature of economics, different economic systems, principles of supply and demand, competition, consumerism and career choices.

Jan Gacke is a consultant with teacher Maggie Gillard and Sid Tull team with Stan Brewer, both of Apple Valley High School. Neither Gacke or Tull had any formal teaching experience before becoming Project Business consultants. Both work for Sperry's CSD Quality Education Services at Eagandale.

"It's really important to be prepared and have more than enough material because things need to move at a quick pace," Gacke said. She added that it's sometimes tough to be in front of a group of teenagers when things aren't going right.

Jan Gacke, who works for Sperry's Quality Education Services, CSD, goes back to school one hour a week to teach business principles to Apple Valley ninth-graders as part of Project Business.

"The first year, I was nervous all the time, but now I'm so confident with the program and all that the curriculum provides, it's much easier," Gacke said. "And a good, flexible teacher like Maggie Gillard really makes the whole program work," she added.

Project Business has made Gacke more aware of business concepts and issues. She said the students ask tough questions and produce good rationales for working out business problems.

"I try to get across how the concepts of economics are applied in the business world," Gacke said. And she uses everything from selling doughnuts to exemplify supply and demand, to setting up a small business complete with product, management and profit plans.

Gacke said the rewards of the 12-week program are both personal and professional. "I've gotten a different perspective that crosses over to my teaching at Sperry," she said. "And the kids have made me feel very special with the appreciation they express."

Sid Tull would agree. In his four years of consulting for Project Business, he's found that "the kids reward you by participating and they show you their appreciation." He added that, "Sometimes we are so mired in our business programs, we don't really get the strokes we need, but the kids do that for you."

Tull, manager of Quality Education Services, relies on spontaneity, informality and humor when dealing with his students. "And I'm always point blank honest because they know when you're dancing," he said. He's found it's okay to say "I don't know, but I'll find out."

Through the various lectures, small group projects and classroom activities, the students learn that business is human and it isn't easy, Tull said. He added that he has an outstanding group of students this year and often feels he learns more from them than they do from him. Whatever the case, Project Business is an excellent way for today's business people to get their message to tomorrow's business leaders.

Fourteen Sperry employees are business consultants this year. For more information on the program, call Linda Miller at 456-4803.

Summer 'camp' explores world of business

Do students view business as a drab world of gray suits, white papers and blue flourescent lights?

If they do, the Business Economics Education Foundation (BEEF) wants to change that view. For the sixth consecutive year, BEEF is conducting Minnesota Business Venture, a week-long summer learning program designed to introduce high school students and teachers to the world of business through the eyes of experienced businessmen and women.

Minnesota Business Venture brings students, teachers and business people together for a week of live-in learning on the St. Olaf College campus in Northfield. Experienced business people will help students and teachers gain an understanding of the daily workings and decision-making process of the business world in a way that cannot be duplicated in a normal classroom situation. The program is offered for two sessions this summer, July 27 - Aug. 2 and Aug. 3-9.

Minnesota Business Venture is designed to provide participants with an opportunity to:

- acquire knowledge concerning the major elements of state, national and global economics,
- become familiar with the role of business as it relates to other segments of society,
- gain insight into career opportunities in business.

At the core of Minnesota Business Venture are simulated companies composed of students and teachers and led by business leaders. The business people, who volunteer a full week of their time as advisors, assist the students and teachers in understanding the workings of the business world. With the aid of computer simulation, each company makes two to three quarterly business decisions every day. The simulation gives participants a picture of the workings, problems, and successes of the business world. It considers the general business climate and the action of competitors in specific marketing areas.

In addition to the computer game, the week consists of general assemblies, small group and panel discussions, quiz bowls, multi-media presentations and field trips. Each day's activities are supplemented by outside speakers addressing topics such as small business operations; labor, government and business relations; the importance of foreign trade; Minnesota's economy; the business of farming and many other aspects of the private enterprise system. Recreational activities round out the program with something for everyone — from swimming, softball and volleyball to movies and dances.

Participation in Minnesota Business Venture is open to all public and private high school students and teachers in the state of Minnesota. Students must have completed their sophomore, junior or senior year in high school to be eligible. Student scholarships are offered through a program administered by BEEF. The scholarships, valued at $250, are contributed by Sperry and other businesses, financial institutions, cooperatives, service clubs and individuals. Each scholarship covers room and board, materials and activities. Students are charged $30 which is applied to their room and board expenses.

Minnesota Business Venture has room for 500 participants this year. Applications must be submitted by May 2. Students interested in applying should contact their principal or counselor or write directly to Minnesota Business Venture, c/o Jeff Lovich, S-297 Griggs Midway Building, 1821 University Ave., St. Paul, MN 55104 or call (612) 645-5561.

ERA

Continued from page 1

Fresh from training at the U.S. Naval Machinist Mate School, Kotz was assigned to the U.S. Naval Computing Machine Laboratory. Machinist mates and electronic technicians were assigned to building electro-mechanical computers, a high security job. "We stayed with those computers 24 hours a day, seven days a week," said Kotz. This exposure prepared him for future work on computers with ERA.

As a Navy contractor, most of ERA's early work was top secret. Security was strictly enforced. Employees working on projects had specialized assignments and were not allowed to visit from one lab to another. Armed guards were stationed at each lab. Names were posted on the doors and only those listed could get inside. If employees had a problem, they would wait until a coffee break and try to find help with what they were working on. "We didn't feel free to go and talk to anybody else out of the plant," said Kotz. "Most of the other companies were not involved in computers so if we had problems there was no place else to go."

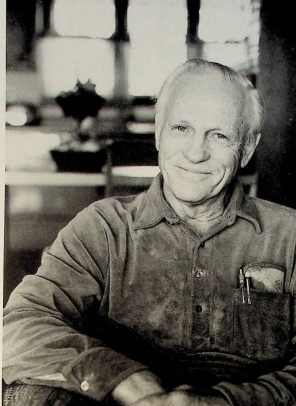
Employees were assigned functions where each had a specific task. Often, they didn't know how these tasks fit together or the purpose of the machines they were building. Unlike today's general purpose computer, ERA's computing equipment was built to perform a specific function.

At the onset, most of ERA's programs were in research and development. "Engineering would tell us to start with a particular wiring," said Kotz. "We would continually vary components and vary voltages or frequencies. From there, we would send out written reports (to the Navy) on how these circuits responded."

Through its research into computer technology for the Navy contracts, ERA developed concepts that were later applied to building its own computers. ERA constantly worked on new storage techniques. One early experiment centered on magnetic drum storage.

In the 1940s, as in the present time, memory storage was very crucial. Kotz remembers filing a piece of cast iron to make shavings. "We had this idea for magnetic drum storage, but didn't know if it would work," he said. The shavings were brought to the lab and glued on to a wooden disk. One spot on the disk was magnetized. As the disk was rotated, an oscilloscope probe was used to take readings. The results were favorable and from there they went on to build a magnetic storage drum. This storage system was eventually used in some of the first general purpose computers manufactured by ERA.

A lot has changed since those first days at ERA. As Kotz remembers, "We never dreamed that we would be where we are today."



Recent retiree Roy Berg compared the beginning of ERA with Sperry today. "Everything has changed. It's the difference between night and day."

Roy Berg

Roy Berg's retirement this month caps a 39-year career that stretches from his start as a young engineer at the fledgling Engineering Research Associates (ERA) to his last position as staff manager, Mechanical Design, Information Systems Products and Technology.

ERA was about a year old in 1947 when Berg graduated from the University of Minnesota with his mechanical engineering degree. He worked for several months at American Hoist and Derrick, but then decided to answer a help wanted ad from ERA. He soon found himself employed by a small firm of 300 employees, working out of a large barn-like building on West Minnehaha Ave. in St. Paul.

"ERA was an unknown at that time. I didn't know too much about what I was getting into," Berg said.

He recalls that ERA operated "kind of hand-to-mouth" in the early years and that sometimes there was doubt whether the new company would be able to meet its payroll at the end of the week. Being young and confident helped him get through those shaky times, he said.

"We viewed ourselves as a small company for about the first 10 years — until the latter part of the '50s when we became a part of the Sperry organization and really expanded," Berg said.

Most of the early work performed by ERA was contract work for the Navy, and secrecy was the rule.

"There was always a lot of mystique in working for ERA. You couldn't even tell your family what you were doing. Basically, we just said, 'It's government work — classified work.' We could say we were working on computers, but that word wasn't meaningful to people. Digital computers were very mysterious to the public — they didn't know what they were, how they were used, who they were for — and we couldn't explain it very well," Berg said.

The secrecy and tight-lipped habits even extended to co-workers.

"We never had much insight into what was going on — even in the next room. There wasn't a lot of communication within the company regarding the technology that we were involved in.

"There weren't many companies like us. We knew we were doing something that was unique, but we didn't realize the importance at that time. We didn't foresee what it would expand into," Berg said.

During the time period that ERA merged with Remington Rand and Sperry (1952 and 1955 respectively), Berg said he realized that this relatively new business that he found himself working in — the computer industry — was coming into its own. Sperry, IBM, Burroughs and other computer companies were growing rapidly and the stage was set for the huge computer boom in the '60s.

"We had a tremendous explosion in the number of employees and in our space requirements. It was the time we also started on several large government programs, the NTDS, Nike-Zeus and Athena programs. Those three put us on pretty solid footing and they really got us into the manufacturing business," Berg said.

The Employee Relations Department of the Computer Systems Division recently produced and presented a video program on the history of ERA. Any Sperry employee or group may check out a copy from CSD's Employee Information Video Library.

Photographers focus on developing skills

If you enjoy taking pictures and like to share your enthusiasm for photography with others, you are like most Sperry Photo Club members.

The Photo Club, in its present form since 1968, had 45 members last year and hopes to continue growing. New members are always welcome or if you would just like to visit a meeting to see one of the club's slide shows, the door is open to everyone.

Meetings are held at 7 p.m. on the fourth Tuesday of each month (except July and December) in the Roseville Building 3 Cafeteria, Sperry Park or Shepard Road. Members submit slides and prints to be judged and critiqued by a qualified photographer at each meeting. A photo-related presentation or workshop follows.

Four slide and four print competitions are held each year in addition to a special Scavenger Hunt slide contest. Each of the slide contests has a specific category such as "Four Seasons of Minnesota" and each member may submit a maximum of four slides per competition. Winning slides are made into 8 x 10 prints and displayed at the Roseville facility and in Sperry Park.

The four print competitions are all "open" categories and members may submit a maximum of four black and white prints and four color prints per competition. Commercial processing is permitted.

The annual Scavenger Hunt contest consists of 20 predetermined subjects that must be photographed in a required sequence on one roll of film. Photo Club members who enter this competition don't see their slides until they are judged at the June meeting.

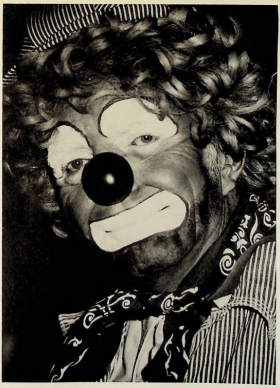
An annual banquet is held in January and all winning entries from the previous year are rejudged to determine "Slide of the Year," "Color Print of the Year," and "Black and White Print of the Year." The 1985 awards were given to Bob Wariakois for "Color Print of the Year," Keith Crook for "Color Slide of the Year," and Andy Shepard for "Black and White Print of the Year." Crook and Shepard were also named "Photographer of the Year" in their respective categories and John Marsden was named "Color Print Photographer of the Year."

Membership dues for 1986 are $4 and every member receives a monthly newsletter that highlights the previous month's meeting and lists the entries that placed in the competition. Pertinent photo-related information is also included. Every member receives an annual information booklet that details the Photo Club rules, lists "Winners of the Year" since 1968 and the last year's top five winners in the slide, black and white print and color print competitions.

To join Sperry's Photo Club, send your check made out to Sperry Photo Club to Ralph Mikkelson, MS CCC18 in Eagan. Include your name, mail station and work phone number. For more information about the club or meeting times, contact Art Charlton at 635-5639.

Andy Shepard's photo, "In The Swing," was named "Black and White Print of the Year."

This photo, titled "N.E. 2nd St.," received the "Color Print of the Year" award from Sperry's Photo Club. It was taken by Bob Wariakos.



"Greasepaint Express," taken by Keith Crook, won "Color Slide of the Year" honors for 1985.

ATC awarded $45.6 million contract

Sperry Corporation's Air Traffic Control (ATC) Systems Division, Mendota Heights, Minn., has been awarded a 945.6 million contract by the Federal Aviation Administration to improve the air traffic control system at the New York Terminal Radar Approach Control (TRACON) center in Westbury, N.Y.

TRACON is the largest automated radar terminal center in the world, and uses a specialized Automated Radar Terminal System, known as ARTS IIIA, developed by Sperry. The upgraded system, to be known as ARTS IIIE, will increase the tracking capabilities and number of radar sensors, allowing the New York airports to serve more aircraft volume.

Initially, Sperry will replace the current display consoles with full digital displays. The new displays with built-in microprocessors will relieve some of the data processing load now handled by the central processing system. This will allow the TRACON system to track up to 1,700 aircraft at one time, rather than the 1,200 which is the current maximum the system can handle. Sperry will also develop a communications network that will serve as an interface between the new displays and the processing system.

A second phase will provide the system with the capacity to track up to 2,800 aircraft simultaneously, with an expansion capability of up to 3,400 tracks. In addition, the system will be equipped with enhanced conflict alert (possible collision) warnings, minimum safe altitude warnings, and an improved capability to separate aircraft. The system will also have a capability to use the new Mode S system, which permits a direct real-time data link between the ground and aircraft.

The enhanced functions will be made possible through the addition of semiconductor memory and the continued distribution of the data processing from the central processor system. The ARTS IIIE will also have a system monitor console and continuous recording system. The improvements are expected to enable the center to handle projected air traffic growth through the year 2000. Expansion of TRACON is expected to begin April 30, 1986 and be completed by December 1988.

Ray Thompson, general manager of ATC, said there is a substantial follow-on potential of over $50 million for the ARTS IIIE program at other high-density airports such as Los Angeles, Chicago and Atlanta. He added that there are also possibilities for international applications of the system.

The N.Y. TRACON center on Long Island has been operating since 1979. It controls arrivals and departures from five major airports in the New York City area, including Kennedy, LaGuardia, Newark, Islip-MacArthur Field and Westchester County airports. It also handles traffic for 15 smaller, general aviation airports in the area. The TRACON center controls as many as 5,000 flights a day.

From 1966 to 1979, air traffic was controlled from the New York Common Instrument Flight Rules Room at Kennedy airport, using an early Sperry automated radar system called the Sperry ARTS IA.

Sperry is a pioneer and leading developer of automated air traffic control systems. The company installed 64 ARTS IIIA systems at major airports throughout the U.S. between 1971 and 1973. The first system was installed at Chicago's O'Hare Airport.

Rid your house of hazardous waste — safely

Industries are not alone in producing hazardous waste. If you change the oil in your car, develop your own photographs or paint and refinish furniture, you're probably contributing to a widespread environmental problem — unsafe disposal of household hazardous waste.

Common household products contain many of the same chemicals as industrial hazardous waste. When disposed of improperly — in trash, down the drain or on the ground — these chemicals can contribute to the pollution of ground water, lakes and streams. When stored at home these wastes also can result in residential fires or accidental poisonings.

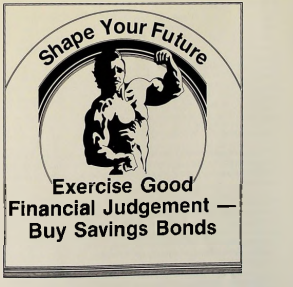
The main problem of household hazardous waste is what to do with it. To help solve that problem, Sperry's Facilities Department at Roseville is holding a household hazardous waste collection day on May 2. The project is a combined effort by Sperry, the City of Roseville and the North Suburban League of Women Voters.

All Twin Cities Sperry employees can bring their household hazardous wastes to the Chemical Storage Building addition on the north end of Building #1 at Roseville, between the hours of 7 a.m. and 5 p.m. on Friday, May 2. The City of Roseville will be offering the same service to Roseville residents on Saturday, May 3, 7 a.m. to 5 p.m., at the municipal garage behind City Hall. Staff from the Minnesota Pollution Control Agency (MPCA) will check wastes brought to the collection sites to determine whether the material can be recycled, incinerated or disposed of at federally permitted hazardous waste facilities.

Household wastes that you are encouraged to bring in include: used motor oil; banned or unwanted pesticides and gardening chemicals; strong cleaning solvents (carbon tetrachloride); automotive chemicals (carburetor cleaner, brake fluid); photographic and other hobby chemicals; painting supplies (turpentine, paint thinner); and wood preservatives.

Wastes that cannot be accepted include: unidentified wastes; compressed gases; the pesticides 2,4,5-T, 2,4,5-TP and Pentachlorophenol; and radioactive wastes.

The household hazardous waste collection days are part of a study funded by the Legislative Commission on Minnesota Resources to evaluate and find solutions to the problem of household hazardous waste.



When severe weather strikes...

Along with warmer weather comes a greater chance of severe weather to occur in Minnesota. Twin Cities Sperry employees should observe the following procedures if severe weather worsens during working hours.

Severe weather procedures at Sperry facilities are triggered by announcements from the National Weather Service (NWS). Upon receipt of an official NWS tornado/severe weather warning, Facilities Protection personnel will make an announcement over the emergency public address system at those facilities affected. The announcement will advise employees that if the severe weather signal is sounded, they should immediately seek the best cover available and remain protected until an "all clear" notification is made.

Between the time of the public address announcement and the actual sounding of warning signals, employees should give advance consideration to storage of government classified material and where the best areas of personal protection are located. Generally, stay away from windows and move to inner hallways or under desks or heavy tables. Do not go outside.

During the week of April 21-25, the Facilities Protection departments in the Twin Cities will be conducting tests of the emergency notification system in order to familiarize employees with the different alarm signals and public address announcements.

Speaking about quality

More than 300 CSD Material Management Center (MMC) employees gathered at Corporate Square B for a kickoff presentation on the Quality Improvement Process (QIP). Myron Lecy (pictured above), director, MMC, gave a brief overview on QIP and informed employees that quality education would begin soon. The Eagan MMC operation is the fourth Computer Systems Division (CSD) team to initiate QIP. The other three CSD areas include the Shepard Road manufacturing facility, CSD at Eagan (Sperry Park) and CSD's Clearwater, Fla. manufacturing site.

RECREATION NOTES

CSD EMPLOYEE PROGRAMS

League championship results for the 1985-86 Sperry CSD basketball program are as follows:
A League — Off-Ta-Mas
B League — Nads
C League — Sixers

Tickets for the Minnesota Twins are on sale at CSD ticket locations for the following games:

April 26	California Angels	Cap Night
May 11	Detroit Tigers	Glove Day
May 25	Milwaukee Brewers	Jacket Day
May 31	Boston Red Sox	Helmet Day
June 9	Texas Rangers	
June 28	Kansas City Royals	
July 13	New York Yankees	Jersey Day
July 28	Seattle Mariners	Tube Sock Day
Aug. 2	Oakland A's	Old Timers Game
Aug. 23	Toronto Bluejays	
Sept. 22	Kansas City Royals	

Regular price: $7 Employee price: $6

Fishing and sportsman licenses are available through the Employee Programs ticket office at Sperry Park and will be available at other CSD facilities this month. Please check bulletin boards for times and locations.

A representative from the Department of Motor Vehicles will be located in the Shepard Road S.E.M. Training Room on the second Wednesday of each month and in the Sperry Park atrium on the fourth Wednesday of each month from 10:30 a.m. to 1:30 p.m. to transfer titles or renew licenses for cars, boats, trailers, trucks, RV's, motorcycles, mopeds, bicycles, snowmobiles, three-wheelers and off-road vehicles.

Celebrate Mother's Day at Sperry's Mother's Day Brunch held Sunday, May 11 from 9:30 a.m. to 2:30 p.m. in the Sperry Park cafeteria. Cost is $2.75 for adults and $2.25 for children. Reservations are required and can be made through Employee Programs, 456-4182, beginning April 16.

ROSEVILLE EMPLOYEE SERVICES

Sperry Roseville employees can purchase discount tickets to the following Minnesota Twins games:

April 26	California Angels	Cap Night
May 6	Baltimore Orioles	Family Night
May 25	Milwaukee Brewers	Jacket Day
June 9	Texas Rangers	
June 28	Kansas City Royals	
July 12	New York Yankees	Kool-Aid Bike Bag
July 28	Seattle Mariners	Family Night
Aug. 1	Oakland A's	Old Timers Night
Aug. 23	Toronto Bluejays	
Sept. 14	Texas Rangers	Family Night

League championship results for the 1985-86 Sperry Roseville basketball program are as follows:
A League — Rockies
B League — Slammers

The Mother's Day Brunch will be held in Roseville on Sunday, May 11. Watch bulletin boards for further details.

Mark your calendar! Roseville's employee picnic is set for July 27 at Valleyfair. Watch for further details.

CSD AND ROSEVILLE REC NOTES

Valleyfair good-any-day tickets will be available May 14 at all CSD and Roseville ticket locations. Regular price: $11.95. Employee price: $9.75. Children under 3 are admitted free.

All entries for the first period of the 1986 Sperry Summer Fishing Contest must be received by Friday, May 23. Second period begins June 17 and runs through Aug. 11.

League and playoff championship results for the 1985-86 Sperry volleyball program are as follows:

Thursday League Champions
A League — Free Agents
B League — Bump & Grind
C League — Clawmasters
D League — Eagles
E League — Road Trippers
F League — Metros

Tuesday League Champions
A League — Bumper To Bumper
B League — Rodneys
C League — Latvian Connection
D League — Competiors

Thursday Playoff Champions
A League — Skiers
B League — Bump & Grind
C League — Clawmasters
D League — Eagles
E League — Road Trippers
F League — Metros

Tuesday Playoff Champions
A League — Challengers
B League — Rodneys
C League — Latvian Connection
D League — Salt Shakers

Results of the Sperry Singles bowling tournament held Feb. 15 show the following winners:

1. Theodore Swenson
2. Connie Hoseid
3. Scott Manning
4. Mike Young
5. Clark Williams
6. Janice Ehmke
7. Ken Tschetter
8. Jack Harra
9. Ken Simmons
10. Al Davis
11. Connie Hoseid*
12. Scott Manning*

*No more than one prize awarded in the top ten for any individual.

SERVICE AWARDS

TWIN CITIES DPG

35 Years

Tom Doukas

30 Years

Robert Arnold
Montague Callender
Theodore Cardenas
Roger De Well
William Eiden
Gerald Erickson
Eileen Gallant
Gordon Grannes
Gene Gullord
Charles Harkness
Lorraine Heatherston

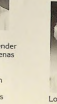
Robert Helmueller
Donald Hinze
Paul Ives
William Jackson
Frank Jaspersen
Clayton Kulsrud

Edward Maas

Roger Mark
Mary Mason
Dennis Mott

Harvey Nelson
John O'Brien

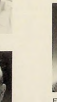
Kenneth Olson



Loraine Padelford
Patricia Ratajack

Walter Shadick

Vernel Swanson
Donald Thorkildson



Earl Vanderheiden
Calvin Wachter

25 Years
Duane Berdt
Merlin Bursaw
Donald Erikkila
Robert Kirby
Robert Luck
John Macosek
John Miles
Marvin Nickell
Dale Phelps
Richard Trudell

20 Years
Donald Anderson
Mary Aveldson
Maynard Buetow
Marvin Burns
James Howe
Allan Isaacs
Peggy Juneau
Marcellus Kalthoff
Oscar Kappes
Carol MacLeod
Julie Newburry
Richard Peterson
Jackie Schaubert

15 Years
Sylvia Bacon
Martha Burton
Karen Hanson
Louaine La Fountaine
Patricia O'Bannon
Neil Speer

10 Years
Kirk Anderson
Cheryl Bakke
Doyle Cameron
David Gilletti
John Lemkins
Raphael Mechtel
Stanley Noraine
Carole Phipps

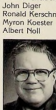
5 Years
Wesley Collver
Alan Frush
Daniel Hawley
Lynn Kitzrow
Mark Miller
Scott Pasket
Kathleen Ritter
Patricia Smith
James Streuber
Joseph Talbert
Robert Thomson
Leila Tillman

TWIN CITIES INFORMATION SYSTEMS

30 Years
Gordon Atchison

Pat Casey

Ronald Chelberg
John Diger
Ronald Kerschner
Myron Koester
Albert Noll



Don "Putts" Putnam
Lorraine Quast

Stewart Rankin
William Robinson
John Saccoman

Yale Sherman

James Small
Bessie Smetak
Wallace Stenholm
Henry Stokvis

25 Years
James Bedell
Leo Carrigan
George Coons
Anthony Dagostino
Malcolm Inmen
Ronald Jasicki
Michael Nutter
Allen Peterson
Leslie Tanner

20 Years
Doris Carroll
Delores Christensen
Robert Ehalt
John Hayes
Loretta Kreating
Joan Sanders
John Travalent
Diane Ware

15 Years
Mary Jo Hunt
Bruce Peters
Richard Petschauer
Norma Simmons
Donald Stone
Allon Zachow

10 Years
Scott Fjerstad
James Keady
Charles Kelly
Kimberly Larkin
Richard Lindsay
Joyce Schaefer
Martha Warner

5 Years
Michael Barton
Dianne Bruggman
Douglas Chapman
Ross Cook
Lee Corella
Rebecca Cornwall
John Fisher
Erich Florentine
Judith Fuller
Dean Gerber
Kathleen Hain
Patricia Hessler
Maurice Holder
John Jackson
Kathryn Korf
Robert Krack
Ann McCool
Steven Paulson
Jack Peterson
Anthony Rinta
Paul Schaeffer
Jane Sellberg
Vickie Stanford
Steve Stennett

TWIN CITIES SMG

20 Years
Jerry Thibideau

10 Years
Wayne Schmieg

CLEAR LAKE

5 Years
Jane Marshall

JACKSON

15 Years
Caroline Dunn
Susan Epps
Lucille Gunlz
Judith Kleine
Irene Wedeking

10 Years
Catherine Larson
Linda Miller
Faye Peters

RETIREES

Alden Allan

Roy Berg
Robert Bednar

Myrtle Bjerkebek
John Diger

Mildred Cignac
Robert Hoffman
William Jefferies
Adelyn Kleyman
Adeline Lawrence
Mary McCue
Bernie Moffett
Richard Prochniak
Dallas Rien
Fred Schmuggr
Patricia Streck
Gerard Sullivan
Wesley Swanson
William Taft
Marjorie Von Bramer

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COMMUNITY INVOLVEMENT

Child Abuse Workers — Children's Home Crisis Nurseries of St. Paul helps parents who fear they might abuse their children. A safe place is provided for children to stay while their parents get the help they need. This non-threatening resource for parents is provided in Washington, Dakota and Ramsey counties. Training and insight is provided in dealing with and learning about stressed children. Volunteers are needed on four shifts covering 24 hours.

Photographer — Enhance your camera skills and have a lot of fun photographing examples of residential architectural lifestyles (historical) for bulletin board displays. Possibility of a second project involving commercial architecture. Training provided. Flexible hours.

Broadcaster — Train to prepare tapes for statewide closed-circuit radio reading network (Radio Talking Book). Broadcast newspapers live; recording may be done at home. Must pass oral reading audition. Excellent opportunity to improve presentation and communication skills.

Friend-To-Friend — Invest some time each week to build a friendship with a person who is mentally retarded. Socializing and friendship are ways to help your friend gain an understanding of himself/herself as well as learning about the community. You could be instrumental in helping your friend feel confident about abilities to cope with a complicated environment.

FOR MORE INFORMATION, CONTACT THE REGIONAL COMMUNITY RELATIONS DEPARTMENT AT 456-4803 (SPERRY PARK) OR ROSEVILLE PUBLIC RELATIONS AT 635-7775.

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