

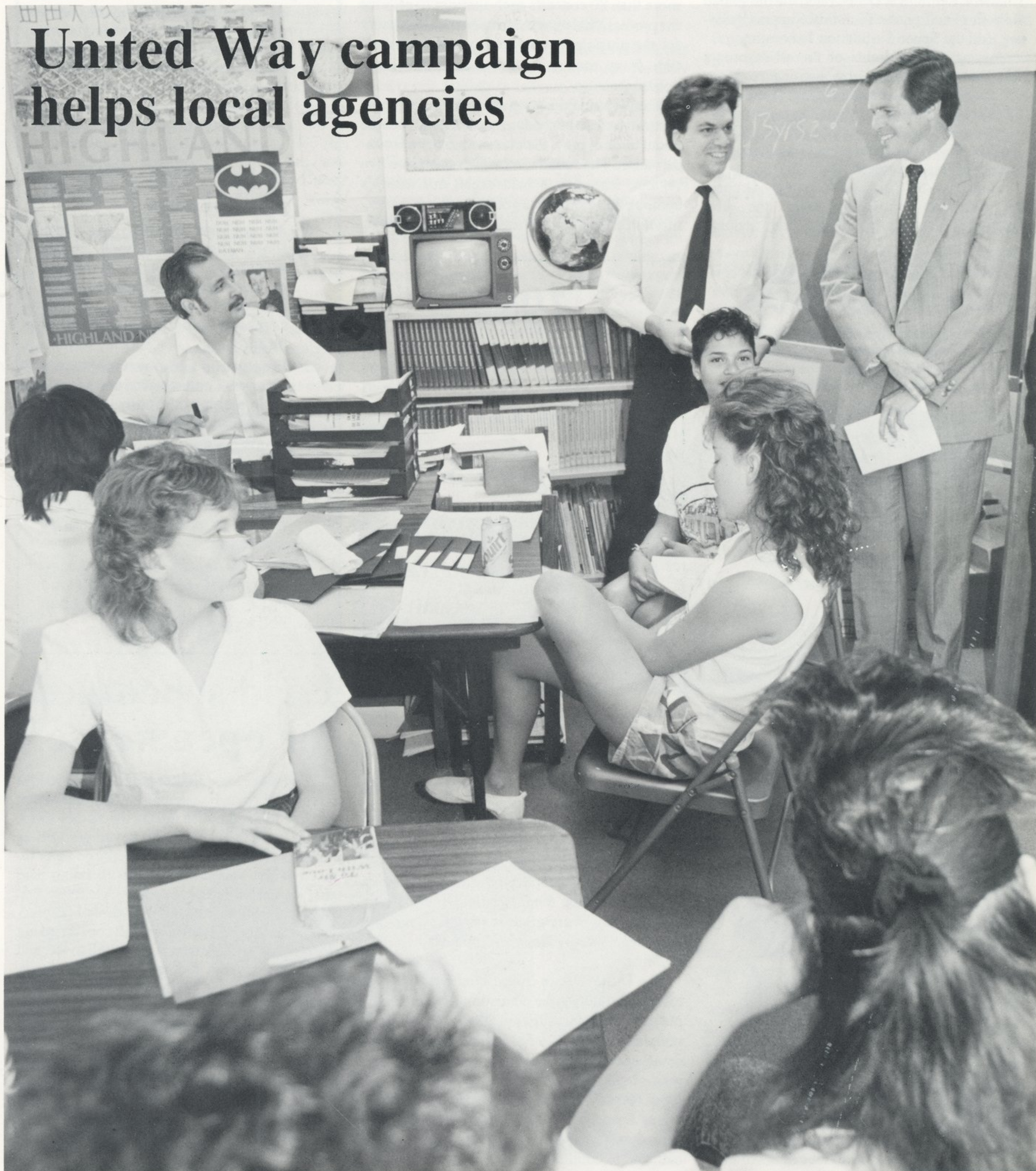
MARTIN MARIETTA

news

ASTRONAUTICS GROUP

July 28, 1989      Number 16

# United Way campaign helps local agencies





# 1989 Family Open House preview

## Entertainment featured at '89 Open House

The 1989 Family Open House will showcase many entertainers, from jugglers to walking, talking robots, and will feature the National Repertory Orchestra at the main plant and smaller ensembles at Deer Creek, the Integrated Robotics Facility, the Technical Support Building, and the Space Simulation Laboratory.

Among the highlights of the all-day tours will be presentations by astronauts Mary Cleave and Mark Lee from the last Space Shuttle mission, which sent Magellan on its radar-mapping mission to Venus. At the Deer Creek Facility, the Raptor Education Foundation will provide a presentation of live birds.

Each year, the National Repertory Orchestra combines musicians from the best conservatories, music schools, and regional

orchestras nationwide. More than 1,000 musicians, ages 18-28, audition annually for the 90-member orchestra, located in Keystone, Colo., for the summer. The orchestra performs more than 80 concerts each summer to provide the professional repertory experience necessary for the musicians to make a successful transition from academia to full-time orchestral positions.

The Raptor Education Foundation is an organization established to educate all people about birds of prey, their habitats, and their conservation. The foundation will present five live raptors, including a bald eagle, our nation's symbol, and a Montana golden eagle, for an exhibition and discussion regarding their survival.

## Cafeterias, parking lots closed for open house

Four cafeterias and parking lots will be closed starting next week to prepare for the 1989 Family Open House.

Cafeterias affected by the closings:

- Electronic Manufacturing Facility—Closed Thursday and Friday;
- Space Support Building—Closed for seating Friday, but open for carry out;
- Second floor Engineering building—Closed Thursday and Friday;
- Deer Creek Facility—Patio closed for dining Thursday and Friday.

Parking lots affected by the closings:

- Technical Support Building—Closed Thursday and Friday,
- Integrated Robotics Facility—Lower lot closed Wednesday through Friday,
- Electronic Manufacturing Facility—Closed Friday,
- Factory—North door lot closed Wednesday through Friday.

## Education Center focuses on youth clubs

For this year's Family Open House, an Education Center will be set up featuring six different organizations designed to provide interaction between young people and professionals. The six organizations that make up the Education Center are: Junior Achievement, Career Explorers Program, National Space Society, United States Space Foundation, Young Astronauts, and the United States Space Camp.

Junior Achievement (JA) provides economic education to youth from elementary through high school. JA supplements area schools' curriculums with its programs of Business Basics, Project Business, Applied Economics and the Evening JA Company, which enables students to organize their own companies to create and market products.

The Career Explorers Program is a division of the Boy Scouts of America for young men and women ages 14 to 20. Its purpose is to provide students information about careers of their

choice and interaction with professionals involved in those careers.

The National Space Society carries out activities to increase public awareness and support for progress in space. Special programs designed for young people interested in aerospace include designing school curriculums on space education for every grade level and organizing Space Week activities, with emphasis on rocket building.

The United States Space Foundation works toward enhancing the education of young people to prepare them for success in space, computer and technology fields. The Young Astronauts encourages students in elementary and junior high to study science, mathematics, and other technology-related subjects. The United States Space Camp includes a week-long program for young people to play the role of astronaut and to conduct simulated space missions.

## Basic ground rules for upcoming open house

Following are some guidelines for the Aug. 5 Family Open House:

1. Permanently assigned non-employees issued a striped non-employee picture badge are invited to participate in the Family Open House.
2. All visitors must be escorted by an employee or a permanently assigned non-employee.
3. All non-employee visitors and guests must be U.S. citizens or permanent residents.
4. All vehicles entering the Main Plant and Deer Creek facility must have at least one employee or permanently assigned non-employee who must display company identification (picture badge).
5. Employees and permanently assigned non-employee hosts must display company identification while on company premises.
6. Cameras and tape recorders are not permitted.
7. Some areas are not open to visitors. Hosts and visitors should adhere to approved tour routes and areas.
8. Vehicle decals will be provided for guests of employees who must work during the open house.

## 1989 Family Open House

August 5

Tours at Waterton and Deer Creek begin at 8 a.m. Last tours start at 3 p.m.

Littleton Systems Center open from 9 a.m. to noon.

## Food scheduled for open house

With more than 50,000 hot dogs ordered for this year's open house, employees and guests are sure to get their fill during the all-day tours.

All-you-can-eat food and beverages will be served at Waterton under three large tents located at the Technical Support Building near the General Purpose Laboratory, the Integrated Robotics Facility, and the Electronic Manufacturing Facility. Waterton's menu consists of hot dogs, chips, fruit, frozen yogurt, Italian ice, and juice, served from 8 a.m. to 6 p.m. Refreshments will also be available upon exiting the factory.

At the Deer Creek Facility, hot dogs, chips, fruit, cookies and pop will be served from 8 a.m. to 4 p.m. on the patio of the "A" level. Seating will be available around the reflecting pool and on the patio.

Littleton Systems Center will serve beverages, doughnuts, and fruit during its open hours of 9 a.m. to noon.





### Parade time

The Space Systems Advanced Programs office in Houston recently sponsored a float for two parades in the Houston Area. The theme of the float was "Yesterday, Today, and Tomorrow." Featured on the float were models of the Flight Telerobotic Servicer, the Manned Maneuvering Unit, and the Viking Mars Lander. Astronaut Bruce McCandless and two gifted and talented students from the Houston/Clear Lake area ride the float. The first parade, on July 15, was held in conjunction with Space Week activities in the Houston area. The second parade, July 22, at the Johnson Space Flight Center was part of activities celebrating the 20th anniversary of Apollo 11 landing on the Moon.

## Teets responds to erroneous story in *The Denver Post*

In reply to an erroneous page one story by *The Denver Post* last week that said the Astronautics Group was being investigated by the federal government and the Colorado attorney general's office for attempting to cover up environmental crimes, Astronautics Group president Peter Teets said, "Martin Marietta has had no contacts from federal or state authorities asking for records related to our environmental activities."

Teets' letter to the editor of the *Post* went on to say that the company is "... confident that

the South Platte River. Past waste handling and disposal practices, which were perfectly acceptable at the time, in recent years have needed to be improved as we have learned more about hazardous materials.

"We have invested millions of dollars in environmental facilities and programs over the past five years to deal with past problems and prevent them from happening in the future.

"We currently are completing an \$8 million modernization program to create a state-of-the-art wastewater treatment plant, and we are

**"Martin Marietta has had no contacts from federal or state authorities asking for records related to our environmental activities."**

**—Peter B. Teets**

the attorney general's investigation, and any other, will confirm what we have said all along—there has been no deliberate illegal dumping, no coverup, and no contamination of anyone's drinking water as a result of any activities by Martin Marietta.

"There is absolutely no evidence that pollution from our plant ever has caused anyone's drinking water to exceed health standards. Furthermore, studies by the U.S. Environmental Protection Agency and the Colorado Department of Health have not shown any contamination of the drinking water in the Friendly Hills area," Teets' letter continued.

The rest of the letter went on to say: "Our original plant, as early as 1956, had facilities designed to protect water supplies, streams and

intercepting and treating all groundwater to remove any contaminants before it leaves our property.

"We have been members of the community for 33 years. We share the concerns of our friends and neighbors for the environment and its contribution to the Colorado lifestyle we and our families enjoy," Teets' letter concluded.

A story in the *Rocky Mountain News* the following day said that federal authorities had denied there was an investigation of Martin Marietta.

The same article also said that Colorado Gov. Roy Romer had said that "... a current state examination ... is only another routine look at an old issue."

## United Way campaign begins

The Mile High United Way campaign got started on the management level this week, and cranks up for all employees at 3 p.m. Aug. 7, with a pep rally and ice cream social at the Deer Creek Facility.

As a Pacesetter for the 1989 campaign, the Astronautics Group's employee campaign will run through Aug. 31.

Mile High United Way's mission is: "... to help people help themselves and one another by uniting the community's voluntary efforts to raise funds and maximize the use of the community's resources."

The Astronautics Group and its employees each year provide major contributions to the Mile High United Way, enabling them to continue their commitment to agencies that serve the community (see related story on page 5).

## Lost time make-up changes for NES

A new lost-time make-up policy for Non-Exempt Salaried (NES) employees goes into effect July 31.

The new policy will let NES employees make up lost time in the same week in which the lost time occurred. Under the old policy, NES employees could only make up lost time on the same day the lost time occurred.

"I think it (the new policy) is great," said Cheryl Nagy, a secretary in strategic planning.

"I've always wished we could make up lost time this way. Sometimes, under the old policy, you just couldn't make it up the same day," she said.

Under the new policy, working additional hours beyond an employee's normal shift must be done with supervisory approval. But whether those hours are recorded as make-up hours is up to employees.

"We came up with the new policy in response to a write-in item in the employee survey," said Carol Remington, manager of compensation and benefits in Personnel. "It applies to all Astronautics Group operations except those in California and New Mexico.

"Also, because we expect a great many questions about how to administer the new policy, we are putting together a briefing for supervisors," Remington said.

"If people have a question before they see the briefing, they can call their personnel representative."





**SSIB teammates**

*Les Meigs, left, Larry Maddux, center, and Bob Shultz, are all members of the Space Systems "I" Building manufacturing high-performance work team that has been operating on high-performance principles for about a year and a half. The team uses these principles to deliver quality hardware ahead of schedule.*

## Corporate news

### Corporation licenses Reynolds to produce new alloy

The Corporation has licensed Reynolds Metals Company to be the exclusive producer and marketer of a proprietary family of weldable aluminum-lithium sheet and plate products.

The lightweight, high-strength alloys developed by Martin Marietta include Weldalite 049™, which will be the strongest known wrought aluminum alloy in the marketplace. With a 100,000-pounds-per-square-inch yield strength, Weldalite 049 is nearly twice as strong as the leading aluminum alloy currently used for space applications, according to Robert G. Morra, vice president of Technical Operations for the corporation.

Reynolds said it intends to begin producing the materials immediately in the form of sheet,

plate, extrusion, and ingot products.

"Weldalite 049 represents a true breakthrough in the fabrication of welded aluminum structures," Morra said. "We expect the alloy will be used in some of the nation's most important aerospace systems of the 1990s."

Andrew J. Stofan, vice president of Technical Operations/Advanced Launch System for the Astronautics Group, said, "Weldalite has been in our ALS plans since day one. This keeps us in line with all of our efforts to date."

Weldalite 049 is the first aluminum-lithium alloy developed specifically for space launch systems. The alloy combines weldability, light weight, and high strength, and maintains its strength under thermal conditions ranging from cryogenic to elevated temperatures.

### Corporation's second quarter earnings \$1.64 vs. \$1.53

The Corporation reported second quarter earnings of \$86,921,000, or \$1.64 per common share, up from \$81,425,000, or \$1.53 per share, in the corresponding period of 1988. Second quarter sales were \$1,433,488,000 compared to \$1,441,537,000 for the second quarter last year.

Six-month net earnings were \$146,133,000, or \$2.76 per share, compared with \$132,373,000, or \$2.49 for the first half of 1988. Sales for the first half of the year were \$2,749,800,000 versus, \$2,737,340,000 in the

same period last year. Backlog at the end of the second quarter was a record \$12.0 billion, up from \$10.8 billion at the same time a year ago.

Norman R. Augustine, chairman and chief executive officer, said, "Second quarter results were particularly strong in the Astronautics Group reflecting increasing production of Titan IV, the nation's most powerful expendable launch vehicle, which had its successful first flight in June. We remain optimistic for the full year." ■

## SSIB uses principles for quality hardware

Country singer Barbara Mandrel had a hit not long ago called "I Was Country When Country Wasn't Cool."

If she'd written that song about the high-performance work team in Space Systems' "I" Building manufacturing, it might have been called something like "We Were High Performance When High Performance Wasn't Cool."

With a title like that it would probably never have become a hit. The words just don't fit the tune. But the SSIB manufacturing/assembly high-performance work team doesn't really need a hit tune to make its point.

Delivering quality hardware ahead of schedule and at half the budgeted cost says all that needs to be said.

The 40-person SSIB core team has been operating on high-performance principles for about a year and a half.

According to members of the team, people from other organizations in Astronautics Group had trouble understanding what the SSIB group meant until recently when high-performance work teams began to be a buzz word.

"Other people couldn't believe we were talking about the same company," says Bob Shultz, a missile mechanic.

"Here, it's 'us all together,' not 'us' against 'them.' We're part of something important. It's good to work here," he said.

Recently the team finished a piece of hardware under budget and ahead of schedule. This piece of hardware—for which they received a team commendation—had only one MARS and four liaison calls.

MARS stands for Martin Marietta Automatic Reporting System. A MARS is a report of nonconformance. It relates to produced materials that don't meet engineering requirements.

"The one MARS wasn't even a workmanship item," said Larry Maddux, the group engineer for the program. "It was for flaking plating on a fastener."

In producing this "first-build" part, the SSIB core team drilled more than 7,800 precision fastener holes and installed numerous detail parts.

They believe their team approach is improving their products.

"We saw a lot of things planners couldn't foresee. We got them changed, so the next build is going more smoothly," Shultz said.

Spacecraft welder Les Meigs said several team members are putting together a lessons-learned book. Organized by part number, it provides detailed "how to" knowledge for welding spacecraft structures.

"It's like having the guy [who did the job before you] sitting next to you telling you what to do next," Meigs said. "It's great for when there's a long time between builds."

"The Scanticon thing [high-performance work team training at Scanticon] was wonderful," said Maddux. "It has been a great reinforcement of what we were trying to do without knowing what to call it."

"The training helped fire a lot of people up," said Alex Prescott, the group's manager. "It's helped us develop a sense of pride and job ownership." ■





### Arapahoe Cardinals win state tournament

Marv Vander Weg, manager of contracts for Strategic Systems and coach of the Arapahoe Cardinals, talks to his players at the Willie Mays 9-10 year-old division Colorado state tournament. The Cardinals won the July 13-16 tournament and went on to take third at the July 19-21 regional tournament in Farmington, N.M. Vander Weg has coached competitive baseball for five years. Players from left to right are Greg Siez, Britt Autry, Luke Field, and Ben Gusmus.

## New head of ALS named in organizational changes

Richard W. Vandekoppel has been named the director of the Advanced Launch System (ALS) program, reporting to Andrew J. Stofan, vice president of Technical Operations/ALS. Dr. John C. Stevens will take Vandekoppel's position as program manager of the Space-Based Interceptor System Concept and Integrated Technology study (SABIR) program in Space Systems, reporting to Morry Thorson, vice president of Military Space Systems. Both appointments are effective immediately.

Vandekoppel joined the company in 1958 and was head of the SABIR program for the last four years.

Stevens joined the company in 1984 and has since been involved in strategic defense-related programs. Most recently, he was technical director of the SABIR effort. ■

## Astronautics families survive Flight 232

No employees were on board United Air Lines Flight 232 last week when it crashed in Sioux City, Iowa. However, Space Systems vice president Grover Hall's parents, Mr. and Mrs. Wilbur Eley, survived the crash with minor injuries. Also, Ron Crain's wife, Margo, survived the plane crash. Crain is a member of the Security department.

# Servicios uses United Way to serve the community

The organization's Spanish title, Servicios de La Raza, holds true in its translation: "Services for the People." More than 32,000 needy Denver residents received assistance from the holistic organization in 1988 alone, and United Way, as a major contributor, helps make it possible.

Servicios de La Raza began in 1972 as a specialty clinic for citizens with Spanish as their primary language but, over the years, the agency has been called on to provide new and expanded services to the general disadvantaged population. The organization boasts a complete service arranged primarily through its different components concerned with mental health, job training, alcohol and drug abuse, youth programs, social services, and domestic violence.

Jose Mondragon, Servicios' executive director, backs their complete care method with documented information.

"The strategy of a comprehensive service," he said, "has been supported by published research which identifies such an approach as the most effective for addressing multiple problems affecting disadvantaged citizens."

Servicios distinguishes itself from other assistance programs not only by being a full-service group, but also by being the only organization in Denver to work with the monolingual Spanish community.

Les Trujillo, manager of Adult Services, said that 75 percent of those using the agency's programs have Spanish as their primary language.

"With the immigration problem we have in this country, we're seeing an increasing necessity for bilingual agencies," Trujillo said. "But other agencies are realizing the great expense of hiring a bilingual staff, therefore, they end up not serving that community."

Trujillo said that their main emphasis when helping disadvantaged people is keeping the family together. When the family structure begins to deteriorate, the battle for recovery and self-sufficiency is harder to fight, Trujillo said.

"We try to maximize the United Way funds toward keeping strong bonds within the families," he said. "We've seen it so many times where our caseloads multiply when the family support is broken."

For 1988, Servicios garnered more than \$210,000 in support money from the United Way, or 12 percent of its operating monies.

"Without United Way, we would have no choice but to curtail a number of our key operations," Trujillo said.

When listening to the staff at Servicios, they always mention their vision for the future. One way they work toward success with their vision is by placing great importance on helping Denver's youth. Approximately 50 percent of their funds are channeled toward youth programs.

"We have a progressive project operating now called transformative leadership," Trujillo said. "We're taking the young peer group leaders and refocusing their leadership abilities toward influencing other youth. We truly feel that the future of our community is in the hands of

our youth, and if we don't spend more time and money on their behalf, we're not making a better future."

And success within their programs, like their mental health component, is well documented at Servicios. Out of 18 patients who were diagnosed as chronically mentally ill and told that they would never function independently, four are near finishing their bachelors' degrees, five are starting college and seven are completing their job placement programs. Only two are still in need of constant care.

Trujillo pointed out one guideline that Servicios will always follow. "We will never turn anyone away who is in need of our help."

by K.C. Ingraham

## On the cover

Francis X. McKenna, vice president of Business Management and chairman of the Mile High United Way's 1887 Club, far right, visits a summer school classroom at Servicios de La Raza, Inc. Students take classes to supplement their normal school activities. The program is part of an effort to assist students in completing their high school education. Last year, more than 600 freshman reportedly dropped out of a Denver area high school by the end of the school year. Servicios is a Mile High United Way agency.



# The Prophets of Quality

*"The Prophets of Quality," by Robert Chapman Wood, is reprinted here with the permission of The Quality Review, where it appeared in the Winter 1988 issue. Copyright © 1988 by the American Society for Quality Control. This is the third and final installment.*

## Quality College Teaches Four Absolutes

Philip Crosby Associates teaches the Crosby gospel through videotapes, seminars, and Quality College, now headquartered in Winter Park, Fla., with three campuses in the United States and eight overseas. The organization promotes a relatively simple four "absolutes" of quality management:

- Quality is defined as conformance to requirements (which a company should clearly specify in writing).
- The quality system is prevention.
- The performance standard is zero defects.
- The measurement of quality is the price of nonconformance.

Crosby is not an intellectual in the mold of Deming or Juran, who both criticize him for approaches they believe are simplistic and for lack of a sophisticated methodology. Crosby himself makes an analogy between his quality promotion and Christian evangelism. "It's like making a Christian out of somebody. You don't just start saying, 'Here's the truth and you're going to hell so you'd better accept Christ.' You get them to say, 'Why are you smiling all the time?' Then you tell them." Crosby believes that quality is relatively easy to achieve once people care about it, measure it, and believe that defects are not inevitable.

## Ishikawa Casts a Long Shadow

To some extent all the U.S. quality experts labor in the shadow of Kaoru Ishikawa, who has been the No. 1 leader of Japan's quality renaissance since 1950. Unlike all the leading practitioners in the United States, Ishikawa was born into his nation's establishment. His father was

## *From the beginning, then, Japan's quality movement differed sharply from American.*

an industrialist who served as the first president of Japan's Keidanren, the powerful Federation of Economic Organizations that is the center of "Japan Inc." Ishikawa took a degree in applied chemistry from the University of Tokyo in 1939, then worked in war industries and in the Navy during World War II. Returning to the University of Tokyo after the war, he became involved in 1949 with the Japan Union of Scientists and Engineers' (JUSE) quality promotion activities.

From the beginning, then, Japan's quality movement differed sharply from American. Ishikawa and other leaders of JUSE were able to talk to the nation's establishment as equals and recruit them to the cause relatively easily.

According to Ishikawa, Japan began learning a highly statistical understanding of quality control from U.S. telecommunications advisors who introduced Shewhart control charts to Nippon Telephone and Telegraph in 1946. The statistical focus continued in the first Deming seminar. But Ishikawa and other leaders of JUSE moved away from sophisticated statistical methods because they found these methods often made the understanding of quality problems more difficult than necessary.

Their new emphasis was on quality as a sort of mass movement within corporations. They

1930s, sought to guarantee quality through industrial engineering inspired by Frederick Taylor's "scientific management" and by the production methods of Henry Ford. Y. K. Chang, a partner in the Massachusetts consulting firm ODI and a key management consultant in his native South Korea, notes that Taylor, who taught managers to study the processes in their organizations before World War I, is in many respects a grandfather of the U.S. quality movement. "The whole work improvement process in the United States was founded by Taylor," he says. Ohno and Shingo have

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## *A key part of Taguchi's influence in the United States has been to emphasize to companies that any departure from a part's optimal size will result in costs to the company, less customer satisfaction, and higher service costs.*

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adopted the designation "total quality control," but Ishikawa notes in his book *What Is Total Quality Control?* that "the Japanese approach has differed from Dr. Feigenbaum's approach. (His) quality control is conducted essentially by specialists," says Ishikawa. Few Japanese make careers as quality specialist in corporations; instead, companies rotate general managers into leadership of the "QC Promotion Department," and that job is often a step on the ladder of a manager who will one day serve as company president.

## Quality Achieved through Seven Tools

Japan's central techniques for solving problems have been the so-called Seven Tools, as taught by Ishikawa. These tools incorporate many of the ideas taught by Juran, Deming, Feigenbaum, and Crosby but distill them into techniques simple enough for factory workers to teach to other factory workers. The Seven Tools are Pareto charts, cause-and-effect diagrams, stratification, the check sheet, the histogram, the scatter diagram, and Shewhart control charts. "From my past experience, as much as 95 percent of all problems within a company can be solved by means of these tools. These seven indispensable tools are sometimes likened to the seven tools of Binkei, the twelfth-century warrior. Unless a person is trained to use these simple and elementary tools, he cannot expect to master more difficult methods," says Ishikawa.

Ishikawa's works were originally translated into English so that Japanese foreign-aid organizations could use them in countries like Malaysia and India. But many U.S. companies have found them more useful for basic quality training than materials written in the United States. An Asian Productivity Organization text, *Guide to Quality Control*, is particularly popular.

Other Japanese management leaders also influence U.S. quality. Taiichi Ohno and Shigeo Shingo, engineers who collaborated in creating Toyota's production system starting in the

recently been traveling in the United States to consult and promote translations of their books.

## Taguchi Rethinks Specification Methods

Genichi Taguchi, a former Nippon Telephone and Telegraph engineer who teaches quality control for the Japan Standards Association, has encouraged a rethinking of key areas of quality theory in the United States, including the very ways in which quality should be specified. When engineers set specifications for a part or a process, they usually set them in terms of acceptable upper and lower limits. Statisticians have always recognized that this approach does not serve the objectives of quality. Usually one precisely optimal size for a part exists, and all deviations can result in problems such as increased noise, more failures in the field, or other less-than-optimal performance. But the engineer drawing specifications may have only an approximate idea of the precisely optimal size, and when he sets the specification limits as "plus or minus 20 microns," that is often a more or less random choice.

A key part of Taguchi's influence in the United States has been to emphasize to companies that any departure from a part's optimal size will result in costs to the company, less customer satisfaction, and higher service costs. Taguchi offers methods for better determining the optimal size of the part and the optimal design of the processes that will manufacture it. His methods are now taught especially at the American Supplier Institute in Dearborn, Mich.

Recently some Japanese consultants have introduced into the United States "quality function deployment" (QFD), a group of product development techniques that emphasize listing the functions consumers want in products and ensuring that those functions will be provided efficiently. Some Japanese say, however, that QFD in Japan was essentially an effort to adapt the techniques of American and Japanese "value analysis" to the Japanese quality movement.

*(Continued on page 7)*



# Prophets *(continued from page 6)*

## Miles Develops Value Analysis

Larry Miles, a General Electric engineer who worked in Pittsfield, Mass., with Donald Feigenbaum, developed value analysis in the United States in the 1940s to examine the functions of products and services so those functions could be provided better at lower cost. Teams define the functions needed in a product and then determine how to provide them inexpensively. After the 1950s, value analysis failed to increase in popularity in the United States. But Ichiro Ueno, another Japanese aristocrat whose father had been influential in bringing Taylor's "scientific management" to Japan in the 1920s, imported value analysis in the 1960s. Its influence grew rapidly, and since 1983 the Japanese value analysis movement has presented an annual Miles Award, named after Larry Miles, to companies that have transformed themselves using value analysis. The award is analogous to the Deming Prize.

Quality function deployment was created by scholars associated with the Japan Union of Scientists and Engineers in 1979. And some U.S. companies have found it extremely useful. But in the United States QFD may lack some of the power of a well-managed value analysis. For example, one of the strongest aspects of value analysis in the United States is that every

function is normally defined in only two words, a verb and a noun. By achieving consensus on only two words, a good value analysis can break sloppy thinking. Unfortunately, the Japanese language doesn't have well-defined verbs and nouns, so this special virtue of value analysis doesn't pass readily into Japanese practice. Thus, it isn't present in quality function deployment, nor does it exist when the techniques of quality function deployment are translated back into English.

## Toward a Consensus on Quality

The U.S. quality movement lacks aristocrats like Ishikawa and Ueno and, perhaps partially as a result, it tends to fall into unseemly bickering more readily than its Japanese counterpart. The U.S. quality teachers sometimes openly conflict with each other.

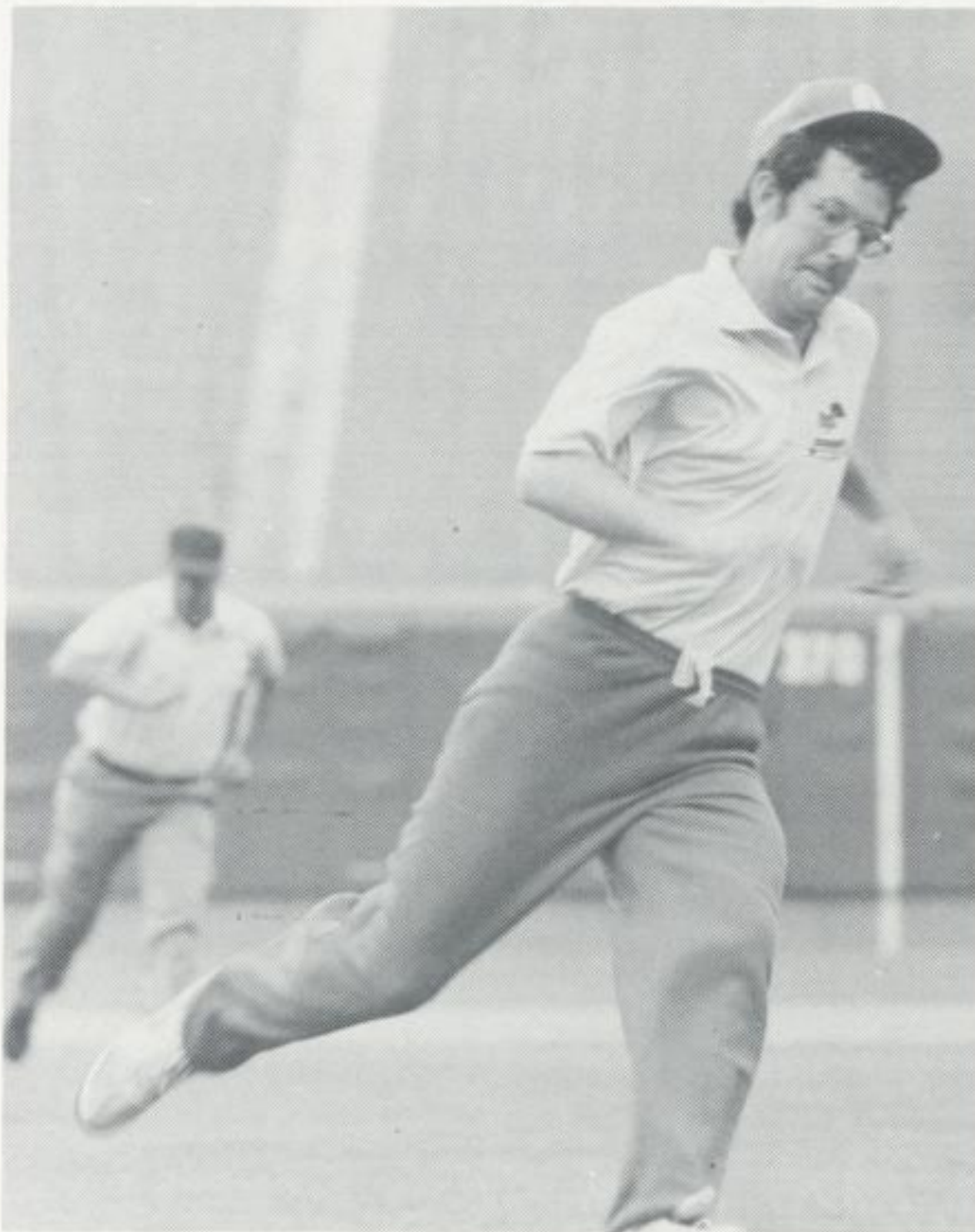
But most followers who've explored the teachings of more than one U.S. leader say that they see few substantial contradictions. For example, one manager from a drug company committed to a Philip Crosby Associates quality improvement program was paying Deming the ultimate compliment at the Valley Forge seminar. He was attending a Deming seminar for the second time; he had listened to an essentially identical four days of lectures four years earlier. He said that Deming disciples in his company worked well with the Crosby staff, and noted that the Crosby group's superior salesmanship

had probably produced a better overall quality effort in his company than the study of Deming alone would have been likely to create.

Clearly, the U.S. quality movement needs opportunities for followers of different schools to talk and to explore what they can learn from each other. Then groups could perhaps develop the same kind of consensus on the contents of a good quality program that exists in Japan.

For example, Deming advocates that bankers analyze whether their potential borrowers are progressing with his Fourteen Points. Bankers urgently need to study clients' quality programs, since an organization that can produce products or services of quality is ultimately a far better risk than one that merely achieves high sales through clever advertising. But neither Deming's Fourteen Points nor other quality manifestoes currently take a form that enables bankers to determine easily how well companies are doing.

Better communications within the quality movement need to reflect on their own experiences of what works in producing true quality and to *act* on quality rather than just listening to seminars and videotapes. America is only beginning to feel the benefit of managers' new commitment to quality. To truly achieve constancy of purpose in American industry, followers of all the leading quality missionaries must work energetically together. ■



## Family night at Mile High Stadium

*More than 22,000 employees and their families recently attended the Denver Zephyrs vs. Pawtucket Red Sox Family Night game at Mile High Stadium. Before the Zs beat the Red Sox, 4-3, the Martin Marietta all-star softball game saw the National League beat the American League 6-5.*





## Waterton Ethics Office opens

For the convenience of employees in the Waterton area, a second Ethics Office has been opened in the Engineering Building, second floor, Room 201F, which is adjacent to the Plant Operations executive area.

Employees desiring to meet with an ethics representative at that location may make an appointment any time during the week by calling Ext. 1-9959.

The Ethics Office at Deer Creek will continue to operate, and may be contact by telephone at Ext. 7-4530. The mail stop for all ethics correspondence is DC 1005. ■

## Junior Achievement seeks business consultants

Employees with business savvy are needed for a variety of Junior Achievement (JA) education programs.

Project business and applied economic consultants teach the concepts of free enterprise in the schools one day a week for 10-12 weeks.

Advisors to the JA company program volunteer one evening a week for a semester to guide high school students through the steps of forming a company and making and selling a product.

Training is provided for all the programs. Interested employees should contact Lori Sharp, Ext. 7-6605, by Aug. 7. ■

## SIP

Unit values for the Savings and Investment Plan (SIP) for United Aerospace Workers (UAW) and United Plan Guard Workers of America (UPGWA) represented employees in June 1989 (May 1989 values in parentheses) are:

Fund A	1.1511989718
Indexed Equity	(1.1598335089)
Fund B	1.1386168950
Fixed Income	(1.1314760683)
Fund C	0.9457074614
Company Stock	(0.9284188833)

## PSP

Unit values for the Performance Shareings Plan (PSP) for Salaried Employees in June 1989 (May 1989 values in parentheses) are:

Fund A	5.5399103302
Indexed Equity	(5.5659120052)
Fund B	3.2768582628
Fixed Income	(3.2509576398)
Fund C	5.0103696332
Company Stock	(4.9123998197)

## Wellness Fair scheduled for employees next month

The Employee Services and Recreation department is sponsoring the 5th Annual Martin Marietta Wellness Fair August 16-18 and 21-25.

The Wellness Fair will be located at the Deer Creek Facility, August 16-17; Waterton, Engineering building, August 18 and 21; Waterton, Space Support Building, August 22-23; and Littleton Systems Center, August 24-25.

By attending the fair's health tests and screenings, luncheon seminars, and evening fitness clinics, employees will learn how to achieve overall wellness.

The health tests and screenings will be offered from 10 a.m.-2 p.m. and will include cholesterol, blood pressure, health counseling, percent body fat, posture care, lung function, skin cancer, diabetes, audiology and optometry.

Lunchtime seminars from 11-11:45 a.m., and noon to 12:45 p.m., will focus on topics such as osteoporosis, Alzheimers disease, snoring, teen-age intervention, arthritis, stress-management, workaholism, and cancer of the reproductive organs.

Also, the identification CareCard will be available for purchase at all locations. The CareCard includes a photograph, emergency contact names and phone numbers, physician's name and number, and more. This card is a potential lifesaver.

For further information, employees may pick up a Wellness Fair schedule from the Employee Services information racks in early August. ■

## Employee services/recreation

**Deer Creek Employee Service office relocated**—The Deer Creek Employee Service office has been moved from the third floor to the "A" level, far south end (south of the Wellness Center). The hours remain the same, 10:30 a.m. to 4 p.m.

**Saddle Club**—Ridge Riders club members will meet at 7 p.m., Tuesday, Aug. 1, in the recreation area clubhouse. The group invites all employees and their guests to participate in the annual Open O-MOK-SEE on Saturday, Aug. 12 at the club's arena. Registration is at 10 a.m., and events start at 11 a.m. The rain date is Sept. 9. For details, contact Mary Smith, Ext. 1-8154 or Irene Woodzell, 688-9676.

**Motorcycle Club**—Aerorider club members will meet at 5 p.m., Thursday, Aug. 3, in the recreation area clubhouse. For details, contact Paul Betthausen, Ext. 1-5574.

**Mile-High L5 Space Society**—The group will meet at 7 p.m., Monday, Aug. 7, at the Public Service Building (northwest corner of Kipling and Hampden). This month's meeting will feature Mark Schloesslin, who will give a presentation on the Apollo 11 lunar landing in observance of its 20th anniversary. The presentation will cover how the U.S. manned space effort in the 1960s led up to the landing and also will detail the Apollo 11 mission itself. For further information,

contact Mark Schloesslin, Ext. 1-9057.

**Radio Club**—The Waterton Amateur Radio Society will meet at 5 p.m., Tuesday, Aug. 8, in the hamshack at the recreation area. For further information, call Jeff Owings, Ext. 7-3629 or 7-6898.

**Red Rock Bowmen**—Archery club members will meet at 4:45 p.m., Tuesday, Aug. 8, in the clubhouse at the recreation area. This meeting will feature the last security briefing. All members are required to attend. For further information, call Dave Unruh, Ext. 7-0477.

**Hunting and Fishing Club**—The group will meet at 5 p.m., Monday, Aug. 14, in the clubhouse at the recreation area. For more information, contact Mel Smith, Ext. 1-8655.

**Toastmasters Clubs**—LSC Toastmasters meets at 4:30 p.m., Wednesdays, at Littleton Systems Center, Room 209G. The contacts are Jim Harrer, Ext. 7-6509, or Alex Hubert, Ext. 7-6527. Titan Toastmasters meets at 6 p.m., Mondays, at Mission Trujillo Restaurant, 181 Ridge Road (Broadway and Ridge Road). Contact Mark Willey, Ext. 1-6183.

**Computer Bulletin Board System**—The Waterton Canyon computerized Remote Bulletin Board System (RBBS) is back online after a short disruption resulting from hardware problems. The RBBS has two 40-megabyte hard disks packed with public

domain and shareware games, utilities, word processors, and source code for Turbo Pascal, Turbo and Microsoft C, Turbo and Quick BASIC DBase, 80x86 Assembler, code published in PC Magazine, and others. There is a want ads section where employees may advertise anything and may leave messages for other users. The system runs continuously and can respond to 1200 or 2400 baud. Call 977-7353. Set your modem to 8 data bits (no parity) and 1 stop bit. Most common communications protocols are supported.

**Career Women's Association (CWA)**—Members and guests are invited to attend an historical fashion show/luncheon at 11:30 a.m., Saturday, Aug. 19, at the Brown Palace Hotel Grand Ballroom. The event is sponsored by Executive Women International as a fundraiser for Women in Transition. Cost is \$25.00

### MARTIN MARIETTA NEWS

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R. Christopher Talley Editor

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