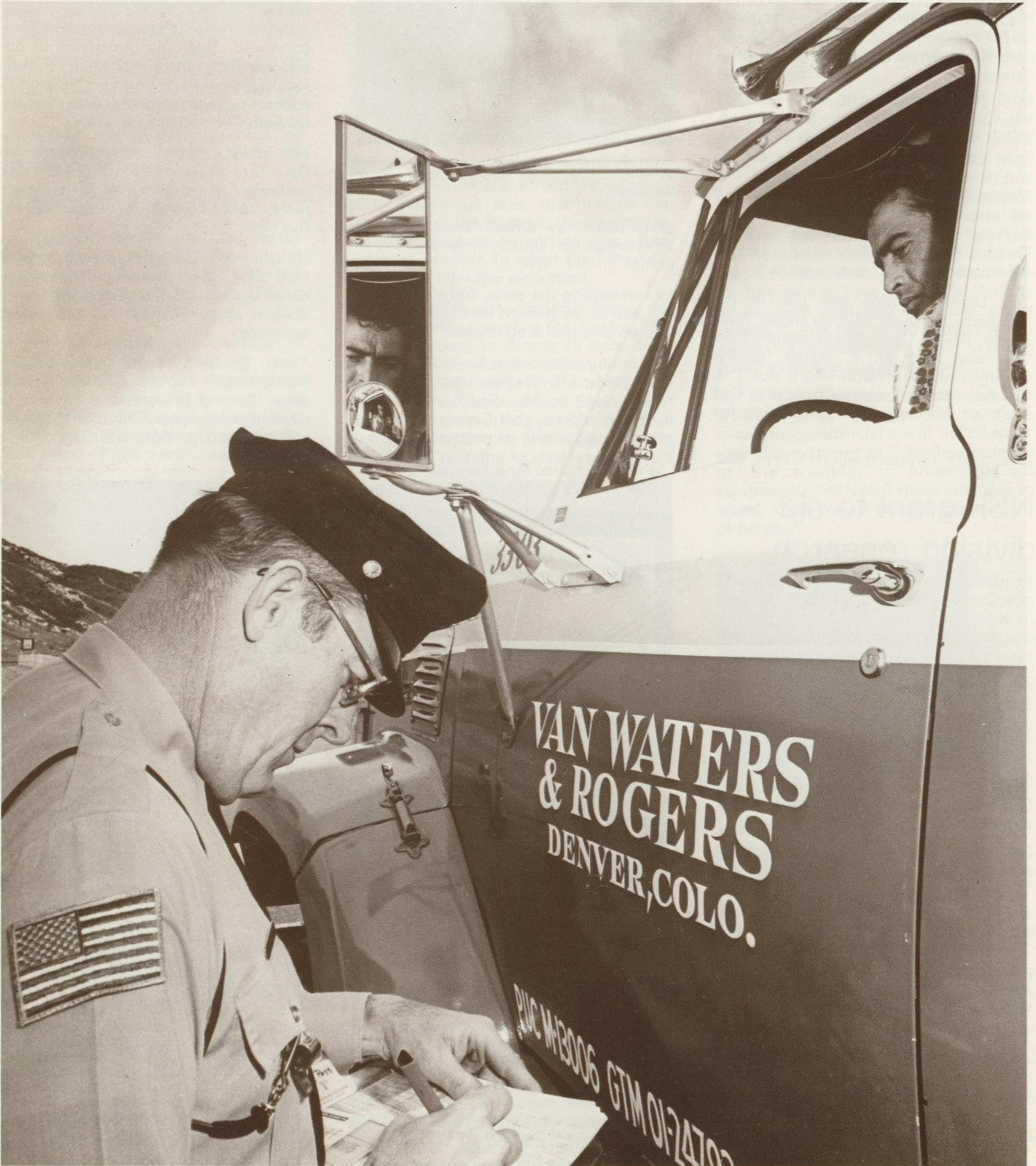


MARTIN MARIETTA

news

DENVER DIVISION

NUMBER 2/1975



Martin Marietta president launches bond campaign

"The purchase of Savings Bonds is one way for the American individual to assert that belief that this country is fundamentally sound, has fundamental integrity, and is fundamentally idealistic."

That was the theme of a luncheon address by J. Donald Rauth, president and chief executive officer of the Martin Marietta Corporation, as he helped launch Colorado's statewide 1975 Savings Bond Campaign.

Mr. Rauth was in Denver in early February at the invitation of John A. Love, former Colorado governor, now chief executive of Ideal Basic Industries, and chairman of the state campaign. The Martin Marietta executive was appointed to the 1975 U.S. Industrial Payroll Savings committee by Secretary of Treasury William E. Simon and is serving as aerospace industry chairman.

The Denver division will join in the statewide campaign with its annual drive March 10-28. Department coordinators will meet with R. E. Weber, general chairman of the division effort, and T. J. Rendler, division coordinator, the first week of March to complete campaign plans.

Goal of the campaign will be 100 percent



John A. Love and J. Donald Rauth (standing) at luncheon launching Colorado Savings Bond campaign.

participation by division employees and an increase in employee investment in bonds.

In announcing the goals, Weber said, "We are now at 96 percent participation. The 100 percent goal is attainable."

"In asking employees to increase their investment," Weber said, "We are recognizing, as Mr. Rauth did in his luncheon address, that Savings Bonds 'do offer some measure of protection against the eroding effects of inflation'."

Mr. Rauth commented in his Denver talk, "Some of my friends have advised me that this is the worst of times to be out selling the notion of Savings Bonds. I can understand the comment, but I don't sympathize with it."

"... these are uneasy times and ... in the memory of most of us, they are uniquely uneasy times. Nevertheless, I am convinced that the American is only discontented, not disenchanted ... and is looking for ways to assert his belief in the nation's fundamental integrity and idealism."

Mr. Rauth reported in his talk that Denver division employees have purchased bonds with a maturity value of more than \$25 million during the past five years.

He also reminded his listeners the Minute Man flag, the Treasury Department's honor award, has flown over the Denver division every year of its 17 years of existence.

"... these statistics are personally comforting," he said. "They make it easier for me to commend to you the payroll savings plan," he told those who will conduct the Colorado Savings Bond campaign.

NSF grant to aid division research

Four college or university faculty members will be permitted to participate in three research projects at the Denver division this summer through awards from the National Science Foundation.

As part of the Foundation's Faculty Research Participation program, the yet to be named participants will each work for 10 weeks with division project managers. Project managers for the NSF program and the projects are:

Dr. Jackie O. Bunting, Gas Physics Lab, Fluid Mechanics of Planetary Entry;

Norman A. Osborne, Advanced Guidance and Control Lab, Fine-Pointing and Tracking;

Ralph R. Falce, Mission and Operations Analysis section, Analytic Averaging Trajectory. Falce, who was assisted in the preparation of his request for NSF participation by Dr. E. D. Vogt, will have two faculty members working with him.

The faculty members will submit their qualifications for work on the projects and selection will be made by the Martin Marietta NSF project managers.

More than 150 college and university faculty members will take part in the annual program this summer.



A GROUP ACHIEVEMENT AWARD from the National Aeronautics and Space Administration is accepted by L. J. Adams (left) vice president and division general manager. The award is in recognition of Martin Marietta's team which built the Earth Resources Experiment for the Skylab program. Eugene C. Wood (center) was the team's initial manager, followed by C. G. Stucker (right). The award cited Martin Marietta's outstanding accomplishments in the

design, development, operation and support of the Earth Resources Experiment. The citation said that through the team's exceptional effort experimental information has been obtained on the Skylab missions that is of significant and practical value in providing new methods for the discovery, management, and conservation of Earth's natural resources. The award is signed by James C. Fletcher, NASA Administrator.



THE VIKING II SPACECRAFT, sealed in its specially built shipping container on a trailer truck, moves out of the space center, on its way to the NASA Kennedy Space Center in Florida. Controls automatically regulate the temperature and humidity around the spacecraft and provide a smooth ride on the 2,100 mile four-day journey.

Contract awarded

The National Aeronautics and Space Administration has issued a definitized contract to the Denver division for the design, development, and test of the Space Shuttle External Tank.

The cost-plus-award-fee type contract is for Increment 1 of the External Tank project, including design, development and test of the tanks; maximum production rate of 24 tanks per year; and delivery of three major ground test articles and six flight model tanks.

The external tanks will be produced by the division at the Michoud Assembly Facility at New Orleans.

Plant protection: It's not 'the soft life'

Crawling into dark, dirty recesses; being splattered with rock salt and slush; or pushing someone free of a snow drift, only to be stuck yourself after all help has left. . . .

The guy who does these jobs is often the same one you see at the main entrance when you drive in—the one you may have accused of having "the soft life."

The job is part of the never ending protection and security task at the Denver division, according to plant protection Captain Dorrall Young, who is one of seven supervisors, who, along with 44 security inspectors, are assigned to the 24-hour-a-day 365-day-a-year task.

Plant protection personnel are most visible in the more routine functions: processing the thousands of visitors to the division; patrolling grounds and facilities on foot and by car; directing and controlling traffic; and responding to emergencies.

They also operate all fire and ambulance equipment and maintain the dispensary after 4 p.m. and on weekends. At night,

Division system on oil-skimming vessels

MARCO of Seattle was awarded a contract this month to build 24 oil-skimming vessels for the Navy.

The oil-water separator system used on the vessels is one developed by the Denver division in an independent research and development program begun in 1970. MARCO was licensed to use the system in 1972.

The Filterbelt that is the heart of the system is a stranded open-cell synthetic foam material chosen for its unique capability to trap oil on its millions of strands while letting water flow through its open cells.

Dr. Jay McGrew, who headed the Denver division research and guided the building of a double-hull boat that proved the feasibility of the concept, used extensive knowledge gained on solving space fuel handing problems to adapt the Filterbelt material to oil-water separation.

When MARCO was granted a license to use and further develop the system, Dr. McGrew moved to Seattle to assist that company in commercial adaptation of the concept. He is now president of his own firm, Applied Science and Engineering, and is continuing research and development work for MARCO.

MARCO—Marine Construction and design Company—was founded in 1952 by Peter G. Schmidt as a small shipyard on the Lake Washington canal in Seattle. Among

its products are crab boats, deck and shipboard equipment for fishing vessels.

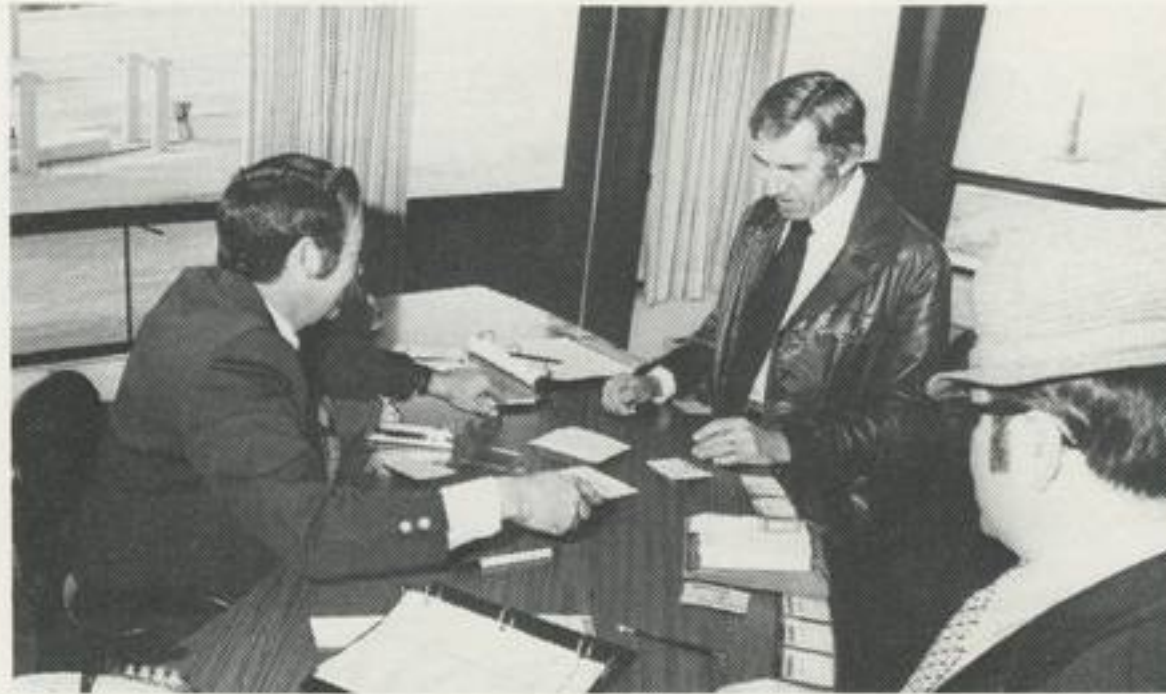
The company's gear for mechanization of fishing is found on 85 percent of all large new tuna purse-seining vessels.

Basic oil-skimming catamarans built by MARCO range in size from 24 to 58 feet. A 110-foot one is now being designed and Robert F. Allen, general manager of MARCO's Pollution Control division, says the firm expects orders soon for two 86-foot vessels.

MARCO also has developed portable oil-skimming equipment that can be moved by truck or permanently installed as part as production machinery in a refinery.

In a letter to Dr. George W. Morgenthaler, the Denver division's vice president for technical operations, Allen said, "We now feel we are the number one manufacturer in this field. . . throughout the world. We are fortunate to have the Martin Marietta development and also fortunate to be located in that part of the country which appears to be leading the world in taking action to protect the environment."

M. B. Chandler, who coordinates the division's New Ideas program, says the successful commercial use of the oil-water separator system is an "excellent example of the transfer of knowledge and equipment from NASA space programs to broad, earth-bound benefits for millions of people."



Visitors are registered at main gate.

on weekends, and on holidays, the security inspectors also handle all incoming telephone calls. They also monitor all safety systems.

Bad weather quickly dispels the soft life view, Young said. "The most miserable situations usually occur when six inches of new snow falls during the day.

"At 4:30 on such a day, all division employees are trying to get home at the same time," Young commented. "We're doing everything from directing traffic to pushing stuck cars out of the snow. By the time we've gotten everybody else out, we're usually the ones who are stuck here for the night."



Equipment function is checked.

Foot patrolling buildings is another of the less exciting jobs. "The inspectors have to get down and crawl into some areas," Young explained, "to check possible trouble spots or to ensure critical equipment is functioning properly."

"Sure, it's pretty dirty, but it's necessary to keep a constant check on all the protective systems," Young added. "Also, we have bi-hourly checks of all buildings and outside areas are patrolled at least every two hours throughout the night." Fire, Young believes, is the most worrisome emergency.

"We have all the equipment necessary for anything that happens," Young stated.

Search for life

(This is one in a series of articles discussing scientific experiments to be conducted on Mars by the Viking orbiter and lander.)

Life may exist on Mars in higher forms like moss or lichens or in microscopic forms like viruses or bacteria. Or a rich variety of life may have existed but disappeared later in the planet's history.

The two regions on Mars chosen for landings are areas where conditions could be conducive to Earth-like life forms.

Higher forms of life and fossils, surface burrows or trails, and artifacts could be identified in the lander camera photos of the surface adjacent to the landers.

The search for microscopic plant or animal life will be made in Martian soil samples. The samples will be scooped up by the 10-foot lander boom and fed into automated biology test chambers where they will be observed for signs of photosynthesis or metabolism.

Chemistry of the organic compounds in the soil will be analyzed for indications of whether they were produced by animal or plant life, or could evolve life.

The Viking spacecraft will be sterilized before launch to prevent contamination of Mars or the life-seeking experiments by Earth microorganisms.

Photosynthesis is the basic life-sustaining process by which Earth plant life uses light energy to combine basic compounds like carbon dioxide, water, and salts—forming carbohydrates.

Steps in the Viking photosynthesis test are:

- Inoculate three soil samples with carbon monoxide and carbon dioxide that bear radioactive tracers.
- Inoculate soil and gases under a lamp that simulates Martian sunlight.
- Evacuate any remaining free gas.
- Heat samples to 1,100 degrees Fahrenheit to vaporize organic materials.
- Measure and analyze the vaporized materials.

Liberation of a substantial amount of tracer gas from the samples will be taken as strong evidence that plant-like organisms in the soil consumed the carbon monoxide and carbon dioxide in photosynthesis.

To test for metabolic activity, the lander biology unit will feed to three soil

On the cover --

Plant protection inspector Claude Potter carefully registers a driver and truck making a delivery to the Denver division.

Executive Management Profiles

[One in a series of sketches of division executive management.]

K. P. "Ken" Timmons sits quietly in an arm chair. And so does his visitor.

The office of the man who is heading the Phase B study for the Space Shuttle Large Space Telescope is different. But it takes a while to discern why it is different.

There is no desk!

"I haven't had a desk in my office for five years," Timmons explains. "I've found that desks are just a place to pile stuff or to hide stuff. I believe they get in the way of good communication."

And to Ken Timmons, good communication, with nothing hidden away, is essential to successful management.

Communication and participation are frequently used words as Timmons

samples a nutrient of organic compounds like sugar which bear trace chemicals. Instruments will monitor gases given off by the samples over a period of about two weeks.

Steady production of gases by soil samples will be taken as evidence that organisms in the soil consumed the nutrient; steadily increasing production of gases will be taken as evidence of growth by the organisms.

In a test for respiration, soil samples will be moistened with nutrients and surrounded in the test chamber with air from outside, principally carbon dioxide. Constituents of the atmospheric sample will be monitored over a period of about two weeks.

Changes in composition of the atmospheric sample will be taken as evidence of respiration from metabolism of organisms in the soil.

In parallel, a soil sample will be sterilized and subjected to the same tests as further validation of any positive test results.

The lander biology unit, in one cubic foot contains: three automated chemical labs, a computer, tiny ovens, counters for radioactive tracers, filters, sun lamp, gas chromatograph, 18,000 other electronic parts, and 43 miniature valves.



K. P. Timmons

describes the Large Space Telescope (LST) program. Those who are on the program with him "participate in the program" rather than the more familiar "work on the program."

"I believe in getting the right people in the organization," Timmons said. "They are the people who can be trusted to get the work done."

Timmons sees his role as study manager as one of "knowing where just a pinch of supervision will keep everything going."

Responsiveness is a third word often used in a conversation with Timmons.

"We must be responsive to the customer's needs, wants, desires," he says. "I spend about a third of my time with the customer. I carefully listen to determine these needs, wants, and desires."

"To me, a simple request from the customer becomes an internal milestone for the program. We are not, however, 'reacting' to the customer, we are being responsive. And there is a big difference between those two words."

The Phase B study will be complete in March 1976. Its purpose is to produce conceptual designs and to establish pricing. The goal is to earn for the Denver division the Phase C/D program—the design and build phase—for the Large Space Telescope.

Timmons, who admits to skiing when he can and playing a little golf, joined the Denver division 11 years ago.

A native of Indianapolis, he moved north in Indiana and served a three-year toolmaker apprenticeship in South Bend before going to college.

He holds a degree in mechanical engineering from the University of Washington at Seattle with advance work at Stanford and Notre Dame.

Although he and his family live on a golf course, Timmons devotes most of his spare time handcrafting Indian jewelry.

Timmons is a quiet man, but behind that quietness lies a fierce competitor—one whose personal goal is winning through competence a major space hardware program for the Denver division.

MARTIN MARIETTA NEWS

Published by Public Relations
MARTIN MARIETTA AEROSPACE
Denver Division
P. O. Box 179
Denver, Colorado 80201
February 1975