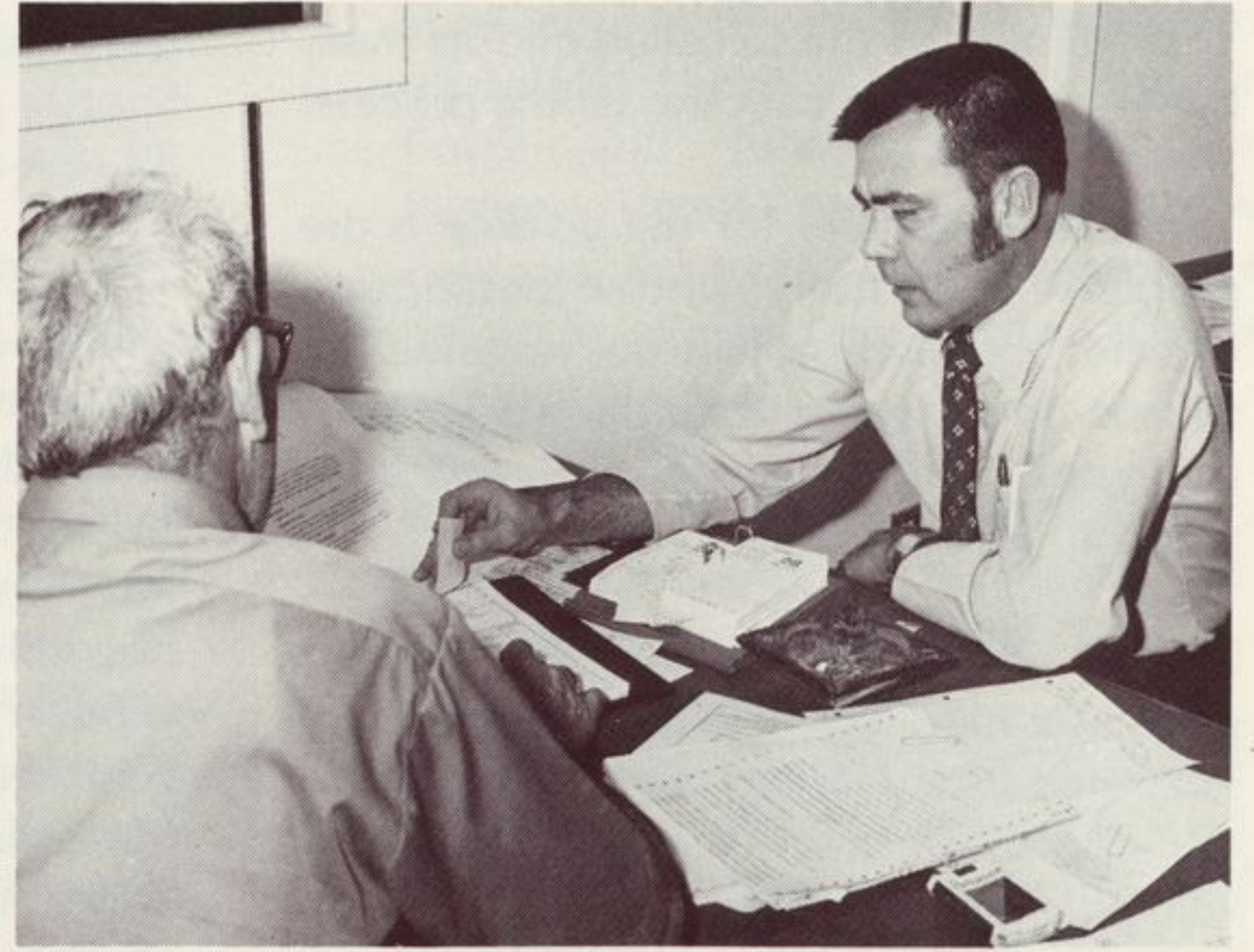
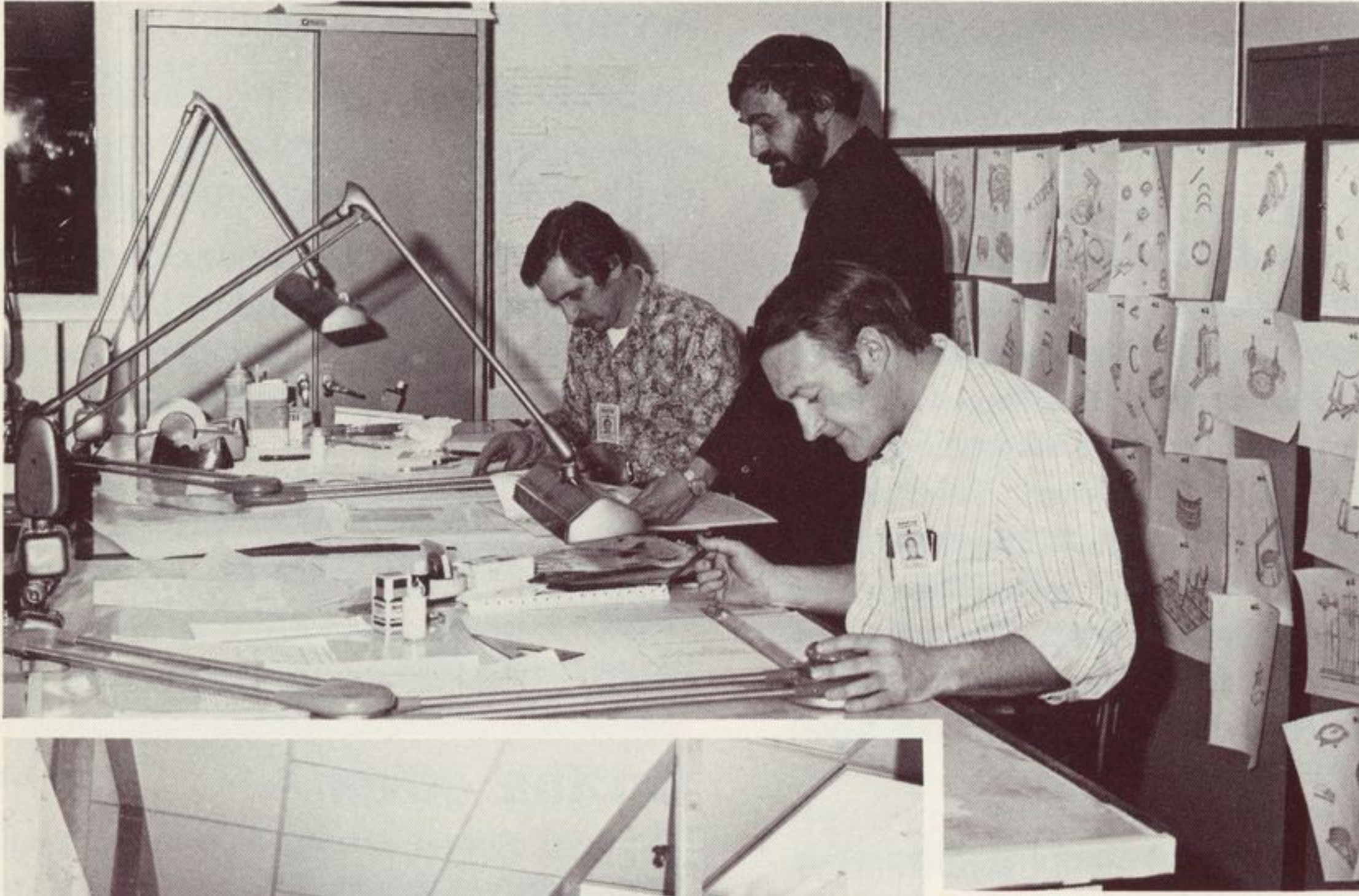


NUMBER 3/1975



The Proposal: Key division sales tool

Unlike many manufacturers who sell products in large quantities to dealers who in turn sell the products to the users, the Denver division sells direct to the user and in small quantities, often one, two, or three of a kind.

That eliminates the so-called middle man, but it does complicate the selling process.

The main sales tool for the division is the proposal—a carefully written description of what the division will do, how the job will be done, who will do the work, when the work will be completed, and how much all this will cost.

Sounds simple, but it really isn't. Major proposals may have 1,000 to 5,000 pages separated into volumes covering a specific topic—management volume, technical volume, cost volume, and so on.

There are small proposals, perhaps with less than 10 pages. These may also be small in dollar return initially to the division, but that doesn't mean they are not important. These small proposals can—and do—lead to major business.

Since January 1, the division has submitted more than 160 proposals classed as small—only because of their size.

In the same period, four major proposals were initiated. Two of them have been delivered: Check Out, Control, and Monitor subsystem for the Space Shuttle Launch Processing System, and the Integrated Electronics subsystem for the Shuttle Solid Rocket Booster.

Proposals for the Shuttle Solid Rocket Boosters structures and for a Heat Capacity Mapping Mission are in the final stages of preparation. They are to be submitted this month.

The Checkout, Control and Monitor subsystem (CCMS) is one of the major elements of the overall Space Shuttle Launch Processing System (LPS). The LPS is the major electrical/electronic ground support equipment system for the total checkout of the Shuttle at Kennedy Space Center during launch and landing operations. Winner of the contract will provide a large quantity of checkout hardware between mid-1975 and mid-1978.

Shuttle Solid Rocket Booster (SRB)

Integrated Electronic Assembly subsystem incorporates all the electrical system of the SRB—except batteries, cables, sensors, and actuators. Boxes designed to house this equipment must withstand sea impact and 72-hour immersion in 80 feet of water. They must be refurbishable and reusable on about 30 Shuttle flights. The contract will call for 33 IEA units and support equipment.

The SRB structures contract, if won, would call for the division to build the following hardware: aft skirt, aft ring, forward skirt, nose cap assembly, nose frustum, forward ordnance ring and attachments, systems tunnel, data capsule assembly, and associated mechanical support equipment. The hardware will be combined with the solid rocket motors to form the Shuttle SRB stage. Two of these stages will be used for each launch. Most of the hardware is to be recoverable, refurbishable, and reusable.

The Heat Capacity Mapping Mission is expected to provide information for rock type mapping, soil moisture detection,

plant canopy temperature studies, thermal effluents mapping, and snow cover mapping. The division is bidding on the base module which contains the data handling, power, communications, command, and attitude control subsystems to support the instrument module.

Proposal teams, with membership size depending on the complexity and scope of the task, are formed for each effort.

Publication services is always a part of the team. The technical editors, illustrators, photographers, typists, and the pressmen who print the proposal are in this organization.

The effort to gain new business means long days and long weeks for the proposal team.

It also means jobs.

On the cover --

The Solid Rocket Booster Structures proposal team, shown in various activities on our cover, is an example of the effort going on in the division to win new business.

Second Titan III E leaves for launch site

The first and second stages of a Titan III E, along with a van of spare parts, left the Denver division in late February for the Kennedy Space Center.

At KSC it will be assembled, solid rocket motors will be strapped to either side,

and the Centaur upper stage will be mounted on top.

It joins another Titan III E delivered earlier this year. They will be used to launch the two Viking spacecrafts in August.



Albert L. Sustrick, right, a senior buyer in central procurement, was recently presented his Professional Contract Managers Certificate by D.A. Linn, left, director of plant operations and

material. The certification is awarded by the National Contract Management Association based on proven skills and experience in contract management.

Coffee maker use to be limited

Private coffee makers are safety and housekeeping hazards and can contribute to higher cafeteria food costs in the Denver division.

For these reasons, a Standard Procedure is being issued limiting the use of these coffee makers.

Hot-beverage vending machines are maintained in all primary division buildings. These machines meet all safety requirements and housekeeping standards. Revenues from them subsidize the cafeteria food operation.

It is estimated cafeteria food prices would be 15 percent higher without vending machine support. Anticipated food and labor costs will probably increase meal costs this year, but to a lesser extent because of vending machine revenues, according to F. J. Haberl, manager of plant services.

As proposed, the Standard Procedure would limit small coffee makers to resident customer main headquarters office areas and to buildings not serviced by vending machines.

All installations of the small coffee makers will be under the direction and supervision of Plant Safety. The housekeeping coordinator will see that housekeeping and safety standards are maintained.

Managers and supervisors are responsible for the removal of private coffee makers from their areas and for assuring that none are returned or used in their areas.

Kierein's essay earns top award

John W. Kierein, a staff engineer on Skylab, has been awarded first place in a national essay contest.

The annual contest was sponsored for the tenth year by the Association for Pushing Gravity Research.

Kierein wrote on the "Implications of the Compton Effect Interpretations of the Red Shift."

He has been at the division for six years and has taught the anti-gravity course in the Martin Marietta Continuing Education program.

Executive Management Profiles

(One in a series of sketches of division executive management.)

Once a circuit design engineer always a circuit design engineer.

That's the philosophy Reid H. Clausen says he will adhere to as the newly named director of electronics for the Denver division.

"The same discipline I learned becoming a circuit design engineer is the discipline I hope to apply in this job," Clausen said. "I will use it to build a solid base for electronic manufacturing."

The Electronic Manufacturing Facility, along with the payloads and sensors organization, was added to Clausen's responsibilities when he assumed his new position.

He retains management of the organizations he had supervised as manager of electronics engineering, research and development. They are



Reid H. Clausen

product design; RF systems, communications and radar; digital data systems; guidance and control; and power systems.

Clausen, who has been with Martin Marietta and the division 16 years, is spending more than half his time working to develop new business.

"We have developed a tremendous capability in design, packaging, and fabrication of high-technology electronic hardware," Clausen said. "I intend to see that we use this capability to win new business."

Areas in which Clausen believes there can be opportunity for new business include:

- Electronic warfare, including simulation of electronic warfare environments, locating and identifying hostile electronic systems,

and providing electronic countermeasures.

- Payload instruments for NASA and Department of Defense space applications. Recently bid on was an ultraviolet plume detector for the Air Force and four instruments for Pioneer Venus probes. The probe instruments will measure characteristics of the Venus atmosphere.
- Microelectronics fabrication, especially putting thousands of components on an individual chip.
- Development of solar-thermal power systems. The division has a contract from the Energy, Research, and Development Administration (ERDA) to build a prototype boiler for a 100 megawatt solar plant that will convert solar energy to steam and steam to electrical power.

Clausen lists these opportunities with great confidence.

The newest director has a BS in Physics from the University of Nebraska and has done advance work at the University of Michigan and UCLA.

He and his wife live in Littleton with two of their four children, Carol, a junior high student, and Beth Ann, who is in elementary school. Their other two children are in college. David is studying optometry in California. Linda, who plans to wed an Air Force Academy graduate this summer, is a sophomore at the University of Northern Colorado.

Corporation sets earnings record

Martin Marietta Corporation net earnings increased 41 percent in 1974 to a record \$80,801,000. Highest earnings for a prior year were \$57,349,000.

Sales increased in 1974 more than \$80 million, also reaching a new high of \$1,220,650,000, compared with \$1,139,898,000 in 1973.

Fourth quarter net earnings increased 15.5 percent and were also Martin Marietta's best of any fourth quarter.

Viking to study Mars features

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

Instruments of the Viking orbiters and landers will examine the physical features and makeup of Mars and its atmosphere in minute detail.

Comparison of the geology and climate of the planet with those of the much more complex Earth and the primitive Moon is expected to resolve many questions about the evolution of Earth and our solar system.

One landing site is in a valley at the mouth of the giant surface rift, or grand canyon, of Mars. Here, deposits from exposure and erosion of geological features around the chasm are expected to be rich in information about the history and development of the planet.

We still lack a complete understanding of Earth's complex environment systems; for example, what accounts for the patterns of movement of water vapor and pollutants in our atmosphere. Clues should be found in study of the dynamics of Mars' more rudimentary atmospheric system in the absence of civilized man.

Geology

The orbiters and landers will conduct experiments to study surface geology and planet internal structure, and to determine whether the planet is geologically alive.

Orbiter and lander photographs will identify types of land forms, stratification, folds, joints, rocks, erosion, sediments, and soil, and will give indications of mineral and chemical composition. If there are Marsquakes in adequate number, lander seismic readings can determine whether the planet has a molten core, a mantle, and a crust as does Earth, and can allow comparison of the mantles of Mars and Earth.

Lander instruments will identify elements and minerals in the soil. Thermal mapping by the orbiters will allow search for

ground frost and evidence of planet internal heat, and will aid in identifying surface structural character from difference in heat conductivity.

Viking radio and radar systems will provide information to improve our knowledge of the planet's size, mass, gravitational field, surface density, and electromagnetic properties, and atmospheric density and turbulence, and will allow study of the solar wind.

Science Instruments

Infrared Radiometer—From orbiter, measures heat radiating from planet's surface. It can record temperatures in both day and night hemispheres and is accurate within 2 degrees Centigrade.

X-ray Fluorescence Spectrometer—Identifies basic elements in soil by measuring their fluorescence after being exposed to radioactive Cadmium 109 and Iron 55. It can detect elements present in amounts as small as 200 parts per million.

Gas Chromatograph-Mass Spectrometer—Identifies gases in the atmosphere and organic compounds in the soil.

Seismometer—Can detect volcanic activity, planet internal structure shifts, and impacts of meteorites on planet's surface. Will be used to determine whether landers are functioning properly by measuring their vibrations.

Soil Boom Scoop—Will be used to study characteristics of the soil: cohesiveness, porosity, hardness, particle size. Magnets mounted on sampler will determine whether soil contains magnetic materials.

Michoud employees aid JA program

Twenty-eight employees of the Michoud Operation are helping make the Junior Achievement Program of Southeastern Louisiana an outstanding success.

Martin Marietta Aerospace is ranked as the number one sponsoring company in the New Orleans Junior Achievement program with a total of eight JA companies. Five of the companies operate from downtown New Orleans, and three operate in Slidell, La.

Junior Achievement of Southeastern Louisiana has a total of 88 companies sponsored by 58 different business firms.

In the southern region, the New Orleans program ranks third in the number of sponsoring companies, second in the number of Junior Achievers participating (2940), and first in number of Junior Achievers per company (29.2).

Other major sponsoring firms in the program include South Central Bell Telephone Co., Shell Oil Co., and Avondale Shipyards.

Martin Marietta Aerospace-sponsored companies and the Michoud Operation employees connected with each include:

JAMMCO—Jesse Hardeman, Leonard Enger, Gloria Richardson
AEROCO—Sandra Showers, Roy Baha, Robert Lee, Bernice Anderson; **COSMOS I**—Wayne Wright, Melvin Johnson, Frank Walker, Barbara Lombard, Gerald Felters; **CREATIVE CRAFTS**—Shirley Kirk, James Granger, Marilyn Robinson, Eliha Brayboy; **SPARETTA COMPANY**—Denise Banks, Milton Pierre, Joyce Frederick, Don Short; **TEEN CO.**—Marie Troullier, Angela Rizzo, Joyce Curtis; **J. A. MART**—Leona Hall, Wilbert Thompson, John Gunther, Joseph Porter; and **CANCO UNLIMITED**—Dottie McCann.



Half the file cabinets in this file room have been declared surplus in the division's file and equipment clean-up program. The paper stacked on top is also surplus and will be taken

away. As of late February, 479 pieces of office equipment have been removed, including file cabinets, supply cabinets, bookcases, vertical files, and desks.

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