SPACE DIVISION
# Skywriter

VOL. XXIX, No. 16 NORTH AMERICAN ROCKWELL CORPORATION (Aerospace and Systems Group) APRIL 18, 1969

# Dual Ceremonies Honor Astronauts of Apollo 9

## Swirling Confetti, Marching Band, More Than 10,000 Employees Welcome Crew

Space Division's employees, part of the "behind-the-scenes" group who contribute so vitally to the success of the Apollo program, were commended for their role in the Apollo 9 mission by crewmen Jim McDivitt, Dave Scott and Russell Schweickart.

Amidst swirling confetti and the music of a marching band more than 10,000 employees were on hand to "welcome back" the trio in dual ceremonies last week at Seal Beach and Downey.

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The events developed from a request by the astronauts to have the opportunity to personally express their thanks to those persons who built the second stage of their launch vehicle and the "Gum Drop" command and service modules that served as their home for much of their mission.

Division President William Bergen set the stage by introducing the space veterans with the comment:

"I think that this group here today probably appreciates more than anyone else the complexity of the flight that these men accomplished and how well it was done. It was amazing during the mission that everything was accomplished successfully and with such precision."

McDivitt, commander for the flight, pointed out that, "We came here today for a single purpose — and that was to thank you."

The lunar landing project, he said, is a national goal "that everybody in the United States

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TRIUMPHANT RETURN — Astronaut Dave Scott, at podium, thanks employees for their contributions to success of Apollo 9 during "welcome back" ceremonies at Seal Beach. From left are astronauts Russell Schweickart and Jim McDivitt, and Bob Greer, Space Division vp and Saturn S-II program manager. More than 10,000 persons were on hand to greet trio at Seal Beach, Downey.

# Neil Armstrong Expected To Be First on Moon

Astronaut Neil Armstrong, commander of the Apollo 11 mission scheduled for July, will probably be the first man to set foot on the lunar surface, George M. Low, Apollo spacecraft program manager at the NASA Manned Spacecraft Center, said this week.

Present plans call for Armstrong to leave the two-man lunar module first and spend a short period on the lunar surface alone, before he is joined by lunar module pilot Edwin E. (Buzz) Aldrin. Astronaut Mike Collins, command module pilot, will remain in the CSM in orbit around the moon, awaiting the return of the LM.

Approximately two hours and 40 minutes of the 22-hour lunar stay period will be allocated to manned exploration of the moon's surface. Low said, Armstrong and Aldrin will remain within 50 to 100 feet of the lunar module, collecting lunar samples and accomplishing other experiments, he added.

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# All-Navy Team Named Prime Crew for Apollo 12 Mission

An all-Navy team has been named by NASA as the prime crew for the Apollo 12 mission.

Heading the crew is Comdr. Charles Conrad, flight commander; Comdr. Dick Gordon, command module pilot, and Lt. Comdr. Al Bean, lunar module pilot. The three astronauts served as the backup crew for Apollo 9.

Conrad and Gordon are veterans of the Gemini program, while Apollo 12 will be Bean's first space flight. Conrad flew aboard Gemini V and with Gordon on the Gemini XI mission.

Backing up the Navy men is an all-Air Force crew under flight commander Col. Dave Scott, who was command module pilot for Apollo 9. Maj. Al Worden is command module pilot and Lt. Col. James Irwin is lunar module pilot. Worden and Irwin have not made a space flight but were members of earlier Apollo support crews.

The Apollo 12 spacecraft — including the division-built Spacecraft 108 command and service modules and lunar modules and lunar module 6 — are already at NASA's Kennedy Space Center undergoing checkout for the flight.

NASA said Apollo 12 will be a lunar landing mission similar to Apollo 11, which is scheduled to be the first landing on the moon. The flight will be four to six months after the July Apollo 11 mission.

### New Landing Site

Preliminary plans call for Apollo 12 landing at a site other than the point for which Apollo 11 is targeted.

Two periods of extravehicular activity on the moon totaling more than five hours are tentatively scheduled for Apollo 12. In addition, NASA said it is expected that the scientific package that will be left on the moon by the Apollo 12 crew will contain more experiments than are included in the Apollo 11 package.

# Saturn S-II-8 Flight Stage Test Proves Successful

The eighth Saturn S-II flight stage was successfully captive-fired last week at NASA's Mississippi Test Facility in a test in which its center engine was intentionally shut down nearly 1½ minutes early.

The firing of the S-II-8 lasted 385 seconds, with only its four "outboard" J-2 engines functioning the final 86 seconds. Running the test were employees of the division's Mississippi Test Operations.

This was the first time such an experiment had been done, said officials of NASA's Marshall Space Flight Center. If data obtained from the test is satisfactory---and NASA said that on first look it appears to be—the center engine may be cut off early during the flight of Apollo 10, scheduled for May 18.

MSFC officials may use the early center engine cutoff to sur-

(Continued on Page 2, Column 4)

# Space Division Submits Proposal for Nuclear Rocket Stage Study

Space Division this week submitted a proposal to NASA's Marshall Space Flight Center for a 10-month study to establish design concepts and development requirements for a nuclear rocket stage which would be used in advanced missions in the late 1970s and 1980 period.

The nuclear rocket stage would replace the current third stage of the Saturn V launch vehicle. The proposed stage will use the NERVA (Nuclear Engine for Rocket Vehicle Application) engine now being developed jointly by NASA and the Atomic Energy Commission.

John Sandford, Advanced Programs business area manager for Launch Systems, said the division proposal recommends the utilization of a derivative S-II stage which would be fabricated at the Seal Beach facility, taking full advantage of division launch vehicle capabilities and experience.

Sandford headed a 30-man team at Seal Beach that compiled the proposal. Ted Littman is proposal study manager, while Keith Boyd is project engineer for vehicle design and Ed Repic is project engineer for payloads.

In its request for proposal, NASA said the study will call for establishment of payload design concepts and their development requirements for potential flight test and early operational applications of stage.

Candidate payloads to be studied for early operational applications of the Saturn V/Nuclear vehicle include an unmanned Mars surface sample return system, outer planet orbiter spacecraft and a large spacecraft for the so-called planetary Grand Tour mission —a single flight study of the planets Jupiter, Saturn, Uranus and Neptune.

Two contractors will be selected to perform independent studies which will be parallel except for payload considerations.

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# Special Panels and Working Groups Planned

Bernard D. Haber, A&SG senior vice president — Research and Engineering, said this week that the number of R&E's special panels and working groups is expected to increase in the near future and that their formation will be announced in *Skywriter* whenever possible.

The panels serve to bring together experts in specific fields without regard to divisional boundaries.

At present panels or working groups in the following fields are chartered: corrosion; system analysis; mathematics

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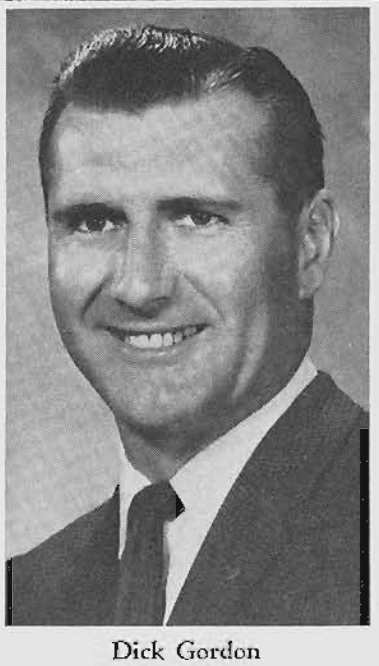
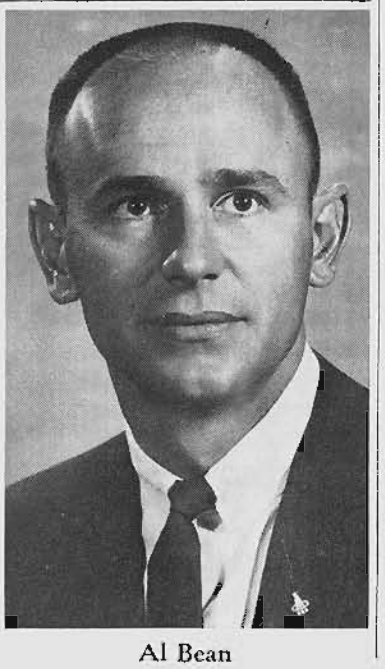
Charles Conrad



Dick Gordon



Al Bean


BEAVER MAN — Division President William Bergen, second from left, receives congratulations and certificate honoring him as honorary pilot, from Ernest Manuel, vice president and Ocean Systems Operations general manager, after making 100-foot dive aboard Beaver Mark IV work boat. Taking part in event were Joe Thompson, left, and Ed Krueger, both of Beaver test crew.

## Nuclear Rocket . . .

*(Continued from Page 1, Column 5)*

In the proposals, NASA asked contractors to compare and evaluate a stage concept using modified Saturn V hardware with a new stage design concept employing more advanced design techniques. Also being sought is the potential evolution of these concepts to a more advanced system capable of multiple assembly in Earth orbit, and long-term storage of the hydrogen propellant.

**Payloads Investigated**

In keeping with NASA's objective of making the maximum utilization of every launch, the study will also investigate payloads that could be flown on the nuclear stage test flights which would not compromise test objectives and which would be relatively inexpensive. Two such payloads to be studied are an Interplanetary Meteoroid Experiment (IME) and a Barium Cloud Experiment (BCE).

Objective of the IME is to gather information on the meteoroid environment in interplanetary space, particularly in the asteroid belt between Mars and Jupiter. Goal of the BCE is to create an artificial plasma cloud in space to simulate a comet's tail and to study the motions of ionized particles in the region of the Earth's magnetosphere.

## CHANGE OF TIME DUE APRIL 27

The State of California changes to Daylight Saving Time at 1 a.m. on Sunday, April 27. The time for the change-over of the clocks of the Aerospace and Systems Group, will be 3 a.m.

Employees who are scheduled to work on Saturday, April 26, and Sunday, April 27, will work the normal number of hours for work on those days. This will cause an additional one-hour overlap between the second shift which starts on Saturday and the third shift which starts on Sunday. The following policy shall apply:

1. The second shift on Saturday, April 26, will start at its regularly scheduled Saturday time and will end at the regularly scheduled time. Starting time and quitting time will be in terms of Pacific Standard Time. Second shift employees who are scheduled to quit work after 2:30 a.m. Sunday, April 27, will not punch out, but will have their quitting time (Pacific Standard Time) written on their timecards by their supervision.
2. The third shift, which includes the hour of 3 a.m. will start one hour earlier (Pacific Standard Time) and quit at their normal clock time on Sunday (Daylight Saving Time).

## Saturn S-II . . .

*(Continued from Page 1, Column 3)*

press the longitudinal oscillation, or vibration, which occurred on both the Apollo 8 and 9 flights in the S-II center engine and thrust structure. Launch vehicle experts are still studying the oscillation readings.

NASA said that while the problem has not been detrimental to the successful operation of the Saturn, engineers are continuing to try to determine the cause.

If MSFC elects to cut off the engine early after studying results of the captive firing, it will simply be using the S-II's engine-out capability in a planned mode. The rocket guidance system will treat it as an engine loss and make the necessary corrections.

## Tappaan Named NAB Chairman for LA Area

Francis D. Tappaan, Aerospace & System Group vice president — Public Relations, has been named Los Angeles Metropolitan Chairman, National Alliance of Businessmen. He succeeds Howard Edgerton, board chairman of California Federal Savings.

The NAB is an organization of business, labor and government executives whose goal is the locating of jobs for the hard-core unemployed in the private sector of the economy.

Donald M. Kendall, president and chief executive officer of PepsiCo., Inc., has been named by President Nixon as national chairman of the NAB, succeeding Henry Ford II.

AAP REVIEW — Astronaut Paul Weitz gets assistance in donning space suit prior to beginning test during Apollo Applications Program Tunnel Review last week at Downey. AAP astronaut team, NASA representatives from Manned Spacecraft Center, Marshall Space Flight Center and division personnel took part in review to check design of docking system which will mate AAP spacecraft with space station in later manned missions.

## SIXTY-TWO EMPLOYEES RECEIVE 'SNOOPY' ASTRONAUT PINS

Sixty-two employees, all of whom have made outstanding contributions to division work on the Apollo/Saturn programs, were presented astronaut special recognition pins (Snoopy) last week by Apollo 9 crewmen Jim McDivitt, Dave Scott and Russell Schweickart.

"It's good to see people who do better than 'good' work," commented McDivitt prior to presenting the pins. "The kind of work you do is an example to everyone."

He emphasized that workmanship has to continually improve as Apollo program hardware becomes more complicated with the increasingly more sophisticated missions. "When you put two spacecraft together it gets even more complex," he noted.

"When the spacecraft work good, it is an example of the work you do," he emphasized.

The Astronaut Snoopy awards were presented to employees both at Downey and Seal Beach.

Receiving their pins at Seal Beach were:

Marvin Zeigel, Saturn S-II Major Welding and Bonding; John Cragin, S-II Contracts and Pricing; Fred Rodriguez, S-II Field Support; Frank Campbell, Leo Garcia, Ben Holbrook and J. A. Medina, all of S-II Quality nd Reliability Assurance; Marjorie Lambert and Russell Stinnett, both of Financial, and R. L. Zavodnik, S-II Stage Checkout.

Presented pins in the Downey ceremonies were:

W. E. Barrett, D. W. Chinn, V. D. Dempsey, Francis King, D. A. Klein, D. R. Krout, F. D. McConnell, R. P. Paradis and D. F. Tomchek, all of Apollo Test and Logistics; Robert Bradshaw, Apollo Quality and Reliability Assurance; J. A. McRae, Contracts and Pricing.

William Brown, John Carlton, Robert Haub, Myra Lackey, Clifford Mattson, Marvin Napier, Mary Sword, Connie Cefali, Shirley Custer, Arline Hollen, Madeleine Phillips and Nina Underwood, all of Apollo Administration.

Samuel Davis, Duane Young, Carl Hayward and Dorothy Jones, all of Downey Facilities and Industrial Engineering; Ralph Flugel, James Ross, James Muramatsu, Paul Smith, Kelvit Shaw, James Ross, all of Apollo Engineering.

E. Fred Davies, Billy Freeman, Gary Gullikson, Alberto Musicman, Jim Milner, James Patterson and George Yamashita, all of Laboratories and Test; Norman Nichols, Leonard Glick, Robert Jackson and DeDe Dale, all of Central Quality and Reliability Assurance; Jim Castner, C. S. Hollingsworth, Michael Anthony and Valerie Foster, all of Material; Audry Stewart, Apollo CSM; Claudia Marder, Interdivisional Operations, and R. E. Jachura, Apollo Project Management.

## Neil Armstrong . . .

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Reviewing the eight-year history of the U.S. manned space program with Christopher C. Kraft, director of Flight Operations at MSC, Low noted that the Apollo command and service modules have flown manned three times for a total time in space of nearly 30 days. He termed it an "amazing fact" that in the "short time since the first manned (Apollo) flight we have accumulated more manned hours in space in Apollo than we had in the whole Mercury and Gemini programs combined."

After describing the strides made in the Mercury and Gemini programs, Kraft noted that the first manned Apollo mission, Apollo 7, "was just about as successful as any flight could be." The performance of the command and service modules, he said, "was truly outstanding."

The Apollo 8 lunar orbit missions was "one of the more Trojan efforts we have had in the space program," Kraft said.

## Special Panels . . .

*(Continued from Page 1, Column 1)*

and statistics; aerothermodynamics; structures; non-destructive testing; engineering release system (ERS); system engineering; system for controlling the technical definition of hardware and equipment for procurement and other purposes.

## Apollo 8 Flight To Be Featured

A program based on the Apollo 8 flight of last Christmas will be shown tonight on the "R & D Review" series on KCET-TV, Channel 28.

Entitled, "Apollo 8 and the Art of Space Navigation," the program will be beamed at 10 p.m. It will include in-flight film from the history-making moon-orbiting flight.

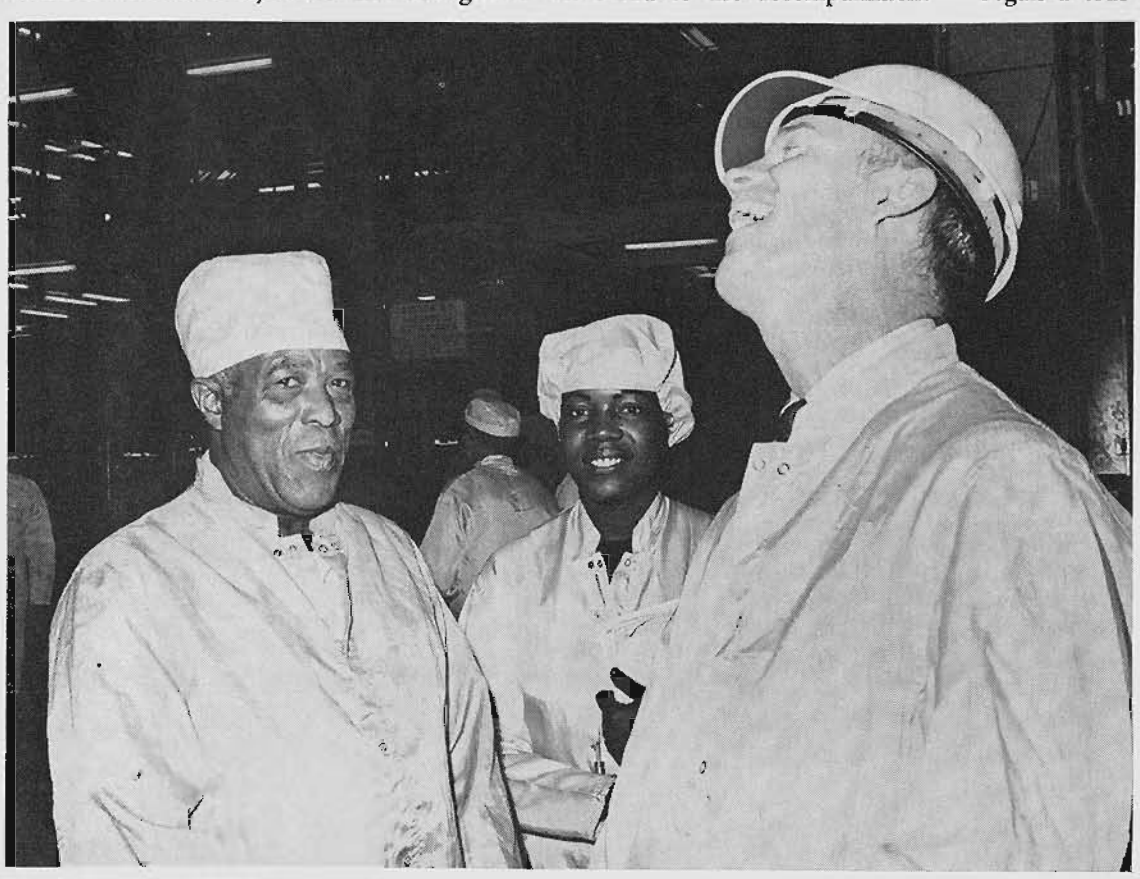
SNOOPY AWARDS—Apollo 9 Astronauts Russell Schweickart, left, Dave Scott, and Jim McDivitt congratulate employees on contribution to Apollo/Saturn programs prior to presentation of Snoopy astronaut recognition award pins. Employees are nominated for receipt of the award through the PRIDE program.

# THREE COME 'HOME' AFTER NATION'S MOST COMPLEX MISSION

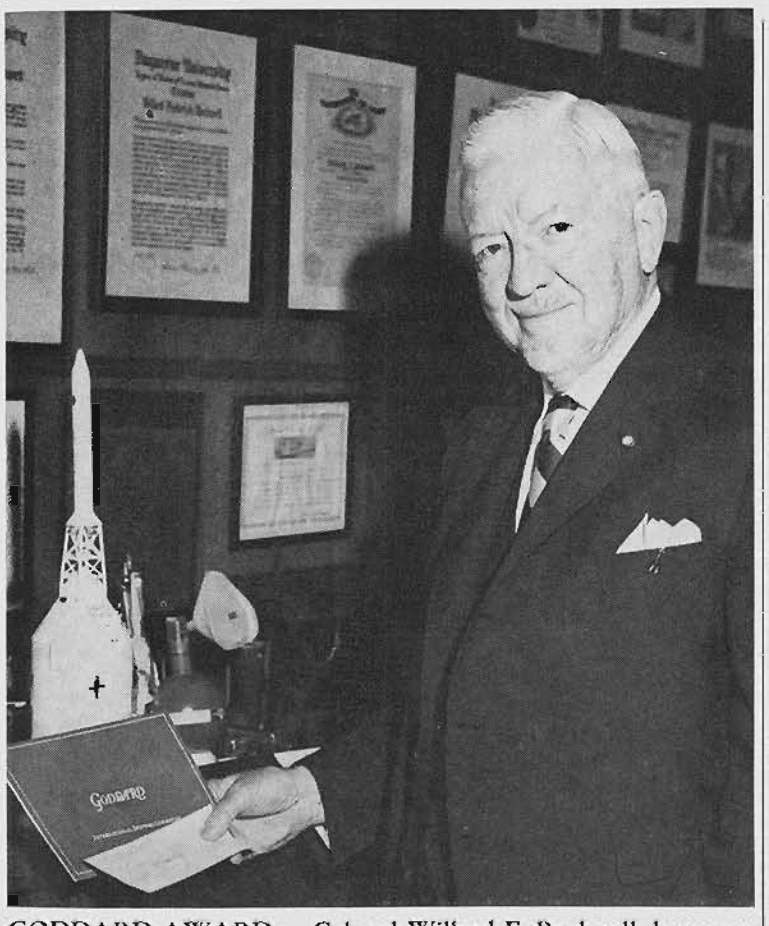


APOLLO 9 — Back from a journey of more than 4,000,000 miles, astronauts Jim McDivitt and Russell Schweickart, at left in first photo and Dave Scott, in second photo, were welcomed last week by Space Division President William Bergen, at podium. Employees staged a giant "welcome home" party for the trio upon their return from their milestone 10-day Earth-orbiting flight. They were hailed for having performed the most complex mission in space history.

THE PEOPLE — The celebration was planned so that the astronauts could actually meet many of the people who made their venture possible and the result a success. They were first brought to the stand to the accompaniment of a marching band then received from band majorettes a cake in the shape of "Gum Drop," their spacecraft and home for the decade of days. They then began a tour of the facilities at Downey, viewed progress on other spacecraft.



THE SHIP ONCE MORE — On their unhurried trip through the facilities, they met many personal friends with whom they had worked in the past. They managed to get to many of the areas they had not visited before for, even in the short time they had been gone, the stage of manufacturing progress had advanced noticeably and new components were developed. But the principal subject of their viewing was their own spacecraft, back home from space.



GODDARD AWARD — Colonel Willard F. Rockwell, honorary chairman of the board of North American Rockwell, recently celebrated his 81st birthday by presenting $75,000 on behalf of the Rockwell Foundation to The Robert Hutchings Goddard Library, Clark Univ., Worcester, Mass. Goddard Library is philanthropic tribute to the man acclaimed "Father of Modern Rocketry."

# Rockwell Tells Industry Analysts NR Prepared for New Contracts

Willard F. Rockwell, Jr., chairman of the board of North American Rockwell, this week told the Aerospace Industry Analysts Association in New York that the company's "plans and preparations" are geared for the eventuality that NR will win both the F-15 and the AMSA contracts.

**Long History**

NR has a 34-year history of building some of the world's most famed aircraft, Rockwell said, from the P-51 Mustang fighter and B-25 Mitchell bomber of World War II, to the F-86 SabreJet of Korea, to the F-100 SuperSabre which was the first operational supersonic fighter. NR also has the most experience in high-performance aircraft with the XB-70 triplesonic aircraft and the X-15 research aircraft, the world's only hypersonic aircraft (has flown faster — 6.7 times the speed of sound — and higher — 67 miles high — than any other aircraft).

Rockwell referred to J. L. Atwood, president and chief executive officer of NR. Atwood, the dean of the military aircraft industry, has designed or been responsible for more military aircraft — 60,000 by the latest count — than any other person, Rockwell asserted.

**Teams Ready**

"We have the design and manufacturing teams that have shared in Atwood's history-making achievements. We have the facilities and the management to handle huge, complex programs like the Apollo be applicable to the F-15 and AMSA. These factors are going to have an important impact on the final awards in the competitions," Rockwell affirmed.

# Aero Commander Division Names Gres VP of Mfg.

William V. Gres, former director of Autonetics' Manufacturing division, has been appointed vice president of Manufacturing for the company's Aero Commander Division in Bethany, Okla.

Gres, who joined the company in 1937, has a broad background in aircraft manufacturing. He served as Manufacturing superintendent on such programs as the T-28 trainer, F-86 SabreJet and the F-100 Super Sabre, and held the same post on development programs for XB-70 experimental aircraft.

# Stellar Chapter Luncheon Set for Secretaries

A special luncheon dedicated to all secretaries will feature the local observance of National Secretaries Week for the Stellar Chapter of the National Secretaries Assn.

Open to all secretaries, the luncheon will be held Tuesday at the Tahitian Village Restaurant, at Rosecrans and Lakewood, from noon to 1 p.m. Entertainment will be by the Bunster Freely Quartet from Space Division.

Luncheon speaker will be William Fisher, special consultant to the Southern California Gas Co. He will emphasize moral and spiritual values in an address entitled, "What Would Grandfather Say?"

**Scholarships**

Also during the luncheon Stellar Chapter will make its annual presentation of scholarship awards to students from Downey and Earl Warren High Schools. Also receiving a scholarship, for the first time, will be a member of the Future Secretaries Assn. Chapter of El Rancho High School in Pico Rivera.

Reservation information may be obtained by calling Helen Flournoy, Downey Ext. 3617-8.

# Twilight Golf League Openings Available

Openings are still available in a Friday evening Twilight Golf League planned for the Rio Hondo Country Club in Downey.

Deadline for registration is Tuesday.

Weekly league starting times will be at 4:30 and 5 p.m., with play scheduled to get under way May 1. Interested division golfers should contact Irving Booker at Seal Beach Ext. 2407 or 2411, or Recreation and Welfare, Downey Ext. 6734-5.

SPACE FACILITY — Art Vogley, second from right, of NASA's Langley Research Center and technical manager on division lunar escape system study program, hears briefings on neutral bouyancy facility during Downey tour. From left are division's John Mattson, Jim Matzenauer, program manager, and Don Morris. Facility is for space and underwater research programs.

# Astronauts Come Home . . .

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is behind as taxpayers, workers, or in other capacities, but very few people actually get a chance to participate. You people are some of them.

"There are very few of us who really get any acclaim for all the hard work that goes into the program," he said. "The crews are the ones that people see, they don't see all those behind the scenes. Yet, the people who realize that there are others behind the scenes are the crews that fly the spacecraft.

"We would like to take some of the acclaim that we have had and give it back to you, because we certainly appreciate the jobs you have done," said McDivitt. "I would like to thank you from the bottom of my heart."

Introduced by Bergen as the first man to solo in an Apollo, Scott noted that "We spent many hours here with you, watching you build the spacecraft and helping you check it out . . . but in all those hours I never saw a single piece of sloppy workmanship or a poor attitude when we were in the manufacturing area and in test and checkout.

"I knew we had a spacecraft that would run right, and I never had any doubt that I couldn't run it by myself — because actually I wasn't running it by myself, I had all of you helping me," said Scott. "All I did was push the buttons and throw the switches according to the script, the rest of the 'Gum Drop' ran on your merits, and for that we'd like to thank you."

"We end up by getting to see *many people who have been as*sociated with this program all around the country and all of them thank us, from our point of view we know a lot better," commented Schweickart, the self-contained "Red Rover spacecraft" of the Apollo 9 extra-vehicular activities.

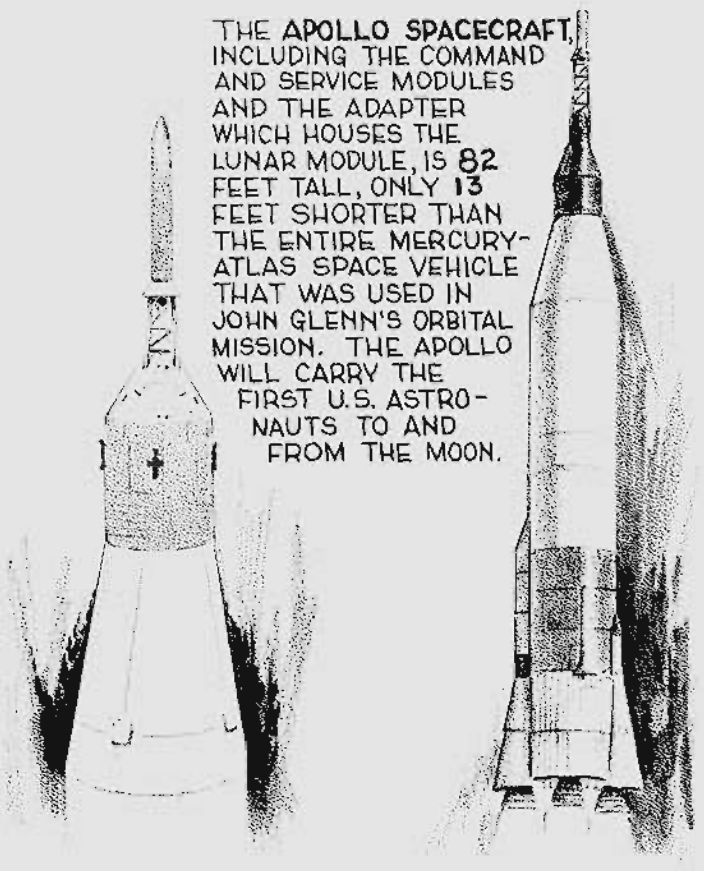
"We get assistance from Bill Bergen's level on to all of you who put the nuts and bolts together and do such a good job . . . the thing that really makes it good and makes it go are the nuts and bolts that were put in there right.

"We would like to encourage you to keep up the good work, because after we finish shaking hands and thanking people we're going to try again," emphasized Schweickart. "We hope that the next one is just as good as this one (Apollo 9) was."

Capping the ceremony at Downey, Bergen presented the three men with pen sets. On each was mounted the nameplate of each astronaut which had been placed in the Apollo 9 command module when it was manufactured at Downey.

Lending color to the ceremonies at Downey was the Downey High School band and an all-service color guard from the Armed Forces office in Hollywood. Following the event, the three astronauts toured the Downey plant to informally visit with employees.

# HOW ABOUT THAT !




# Flower Show To Pay Tribute to Space Program

A special tribute will be paid the nation's space program by the Southland Rose Society in its annual Spring Rose and Flower Arrangement Show this weekend in Downey.

The show is open to the public and will be held at the Downey YMCA, 11531 S. Downey Ave. It will be open from 2 to 7 p.m. tomorrow and from 10 a.m. to 5 p.m. on Sunday.

Competition classes in the show all bear a space theme. Floral arrangement titles include, "Apollo Dream," Count Down, Moon Shot, Space Ship, Man on the Moon, Reaching for the Moon, Beautiful Earth, Splash Down and Moon Crater.

Arrangements will range from those in containers to abstracts, those with candles, wood and rock, shells and driftwood and water scenes.

## Space Hours

The accumulated man-hours in space for the United States under the National Aeronautics and Space Administration program through Apollo 9 is 3,456.

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