

DOCKED APOLLO - Docked Apollo command and service modules are shown in shot taken splashdown and the complete refrom lunar module and transmitted back to Earth via television. Photo was made as combined spacecraft were over coast of Florida, below cloud cover. Docking was one of flight's major goals.

Apollo CSM To Play Major Role in Apollo Applications Program

NASA will rely heavily on | Earth, in lieu of the 100 percent | month period beginning in the Apollo Applications Program, craft. John Disher, AAP deputy director for NASA, told newsmen this week in outlining ob-

program include the performance of long-duration space flights, scientific investigations, Aerospace Award applications in Earth orbit and economic and operational studies leading to the establishment of a

space station.

He said the Space Division is already at work under an estimated \$340 million contract for modifying Apollo spacecraft for the program. The funds include sums already covered under the division basic Apollo contract and moneys for the modification work.

Earth 'Atmosphere'

The AAP command and service modules will have a "twogas" environment - oxygen and nitrogen - similar to that of the

the modified Apollo command oxygen used in the present lunar third quarter of 1971, said and service spacecraft in the landing version Apollo space-

> There will be five basic AAP launches spanning an eight-

jectives of the program. Disher said goals of the Atwood Accepts at Goddard Dinner

The Nelson P. Jackson Aerospace Award, presented annually by the National Space Club to a firm making an outstanding contribution to the missile, aircraft and space field, has been awarded to North Ameri- in late 1971 that will use the can Rockwell.

Robert C. Seamans, Jr., secretary of the Air Force, presented the award to J. L. Atwood, NR's president and chief executive officer, at the 12th annual Goddard Memorial Din-(Continued on Page 2, Column 5)

Disher, Launch vehicle for all flights will be the second-stage Saturn 1B.

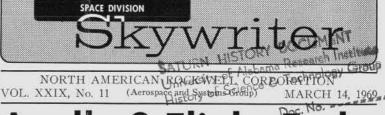
The initial mission will involve two launches. The first will put up an unmanned orbital workshop that will be the empty S-1VB second stage of the S-1B launch vehicle.

Manned Apollo

The second will be a manned Apollo which will carry the crew for the workshop. The Apollo will dock with the workshop and the crew will enter the station, set it up and remain for 28 days, and then return to Earth in the same Apollo.

A 56-day mission is planned same workshop. A second Apollo will be launched to transport a new crew to the station and then return the astronauts to Earth.

The final two launches will be an Apollo launch with a new (Continued on Page 4, Column 1)



Apollo 9 Flight Ends: **Astronauts Return**

McDivitt, Scott and Schweickart Move Man Step Nearer Landing

Apollo 9 splashed down in the West Atlantic early Thursday morning to bring to a successful close one of the most complex flights in the U. S. manned space flight program.

Astronauts Jim McDivitt, Dave Scott and Russell Schweickart touched down less than three-and-a-half miles from the USS Guadalcanal, prime recovery ship.

The final seconds of the covery were shown on national television.

The vital mission was the first step in qualifying the lunar module, the only component of the moon landing mission that had not been proved with men aboard in space. The capabilities of the Space Divi-sion-built Saturn S-II stage and Apollo command and service modules had been fully demonstrated in earlier flights.

McDivitt, Scott and

NASA's Mueller Calls Apollo 9 Flight 'Success'

Apollo 9 was as successful a flight as any of us could even wish for and has ever seen," Dr. George Mueller, NASA associate administrator for Manned Space Flight told newsmen Thursday following splashdown of the milestone mission.

Dr. Mueller declared, "we have been remarkably successful so far in the Apollo programs. The hardware worked better than we have any right to expect.'

As further tribute, Dr. Mueller added that Apollo 8 com-(Continued on Page 2, Column 5)

Schweickart thoroughly wrung out the lunar module in the first five days of their mission as they rehearsed in Earth orbit the rendezvous and docking maneuvers that will be so critical in the lunar landing flight.

Photo Work

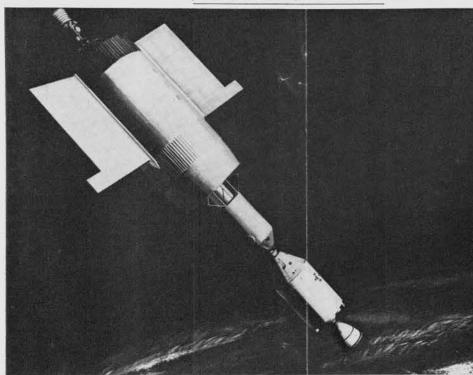
Red-headed Russell (Rusty) Schweickart went down in space history as "Red Rover," his code name during the extra vehicular activity he performed during the mission. Commenting on his first look at his surroundings when he stepped out of the lunar module, Schweickart exclaimed, "Boy! Oh, Boy! What a view!"

In the photo-taking session during Schweickart's EVA, Scott, who was half out of the open hatch of the docked command module taking photos of Schweickart and the lunar module, told McDivitt, "I tell you, the toughest part of this whole thing is trying to change the film magazine (in his camera)."

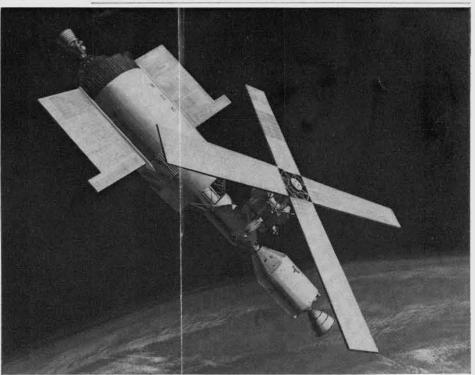
"Yes, I figured it would be, Dave," McDivitt said dryly.
"It's a mundane task," Scott retorted, making no further comment on the "earthly" meaning of "mundane."

Trouble Free

Midway into the mission, Eugene Kranz, Apollo 9 flight director for NASA's Manned Spacecraft Center, pointed out that the mission was going so trouble-free flight teams were themselves more free to exploit the spacecraft's capabilities and take a critical look at many sys-(Continued on Page 4, Column 4)



APOLLO APPLICATIONS - Apollo Applications command and service module spacecraft, lower right, docks with Saturn 1B Orbital Workshop in artist's concept at left showing basic configuration of space laboratory. Workshop's panels capture solar energy for powering systems. In photo at right, Apollo



Telescope Mount, with windmill-like panels which also trap solar energy, is added to workshop. Division has estimated \$340 million contract with NASA to modify four spacecraft for use in AAP missions. Workshop is first step in program aimed at qualifying man and space vehicles for extended missions.



CLOSE LOOK - State Assemblyman Carley Porter, right, checks interior of Apollo 8 command module during visit to Downey for company briefing on water quality. Standing behind Porter is Lewis Allen, a consultant to State Senate Water Committee. tained at the Rec Center.

Space Technology **Could Improve** Our Environment

Use of company developed technological capabilities to improve man's physical environment was underscored last week in a briefing on water quality for a trio of state officials.

Taking part in the session, hosted by the Space Division, were representatives of Space, Atomics International, Autonetics and Rocketdyne.

The briefing was presented for State Assemblyman Carley Porter, Ron Robey, consultant to the Assembly Water Commit-tee, and Lewis Allen, consultant to the Senate Water Committee. Porter is chairman of the California Advisory Committee on Western States Water Planning, chairman of the Joint Legislative Committee on the San Francisco Bay Delta, and chairman of the Assembly Water Committee.

Opening the session was Space Division's Dr. Dave Hodder who discussed the use of sensing devices for water pollution detection and for finding fresh water locations. He was followed by Bart Tuffly of Rocketdyne who reviewed water treatment and control, and pollution detection devices.

Dr. John Kalvinskas of Autonetics' Life Sciences gave a presentation on environmental management, including monitoring, reclamation and reservoir systems. Bob Hathaway of Autonetics' Information Systems Division outlined water management systems, and J. R. Wetch of Atomics International discussed phosphate removal from treated waste water.

Bill Dowdy, Space Division program area manager for Earth Resources in Advanced Programs, who was session chairman, said a similar presentation is planned next week for State Senator Gordon Cologne and Kerry Mulligan, director of the State Water Resources Control Board, Sen. Cologne is chairman of the Senate Committee on Water Resources and one of three California delegates to the Western States Water Council.



Electric Organ Studies To Be Given by R&W

A program to provide electric organ instruction for employees and their families is in the planning stage at the Downey Recreation Center.

The instruction will be provided as part of the activities of an Organ Club being formed now. Next meeting of the club will be on Thursday at the Recreation Center at 8 p.m. Agenda for the session includes election of officers, amateur jam sessions and refreshments.

Plans for future meetings include appearances by guest stars, combo playing, and reviews of music theory, chords, rhythms, and playing by ear Full information may be ob-



PROUD REPS — Division men representing fellow employees at launch of Apollo 9 pause during tour of Air Force Museum at Cape Kennedy. From left are Kelvit Shaw, Vic Diaco, Bob Schoen, all from Downey, Marvin Zeigel, Seal Beach, and William Sullivan of Launch Operations. Rudy Lindsay of Mississippi Test Operations was not on hand for photograph. Men were selected for honor through PRIDE program on outstanding workmanship.

Apollo's Honeycomb Stainless Steel Panels Win Design in Steel Award

Apollo program has won it by the American Iron and Steel the 1968-1969 Design In Steel Award for Best Engineering of Transportation Equipment.

The award was presented last week during a banquet in New York City's Plaza Hotel. It is in recognition of division development of brazed stainless steel honeycomb panels for the Apollo command module.

Louis J. Walkover, manager of Design Requirements in Apollo Systems Engineering, accepted the plaque on behalf of

Sixth Annual Easter Egg Hunt To Be Held

Space Division's Sixth Annual Easter Egg Hunt will be held Saturday, April 5, at the Downey Recreation Center from 10 a.m. to noon, it was announced this week.

The hunt will be for youngsters two through seven years of age, and admission will be by ticket only. Tickets for each person attending may be obtained at the Recreation Center, 12145 So. Woodruff Ave., or at the Recreation and Welfare offices at Downey and Seal Beach.

Refreshments will be provided, and a special drawing will be held for children's prizes.

Space Division's work on the the division at ceremonies hosted Institute, sponsor of the awards program.

> The brazed steel honeycomb panels provide the primary substructure for the aft, forward and crew compartment heat shield structure of the command module, which is being produced by the division under contract to NASA's Manned Spacecraft Center. The sandwich structure consists of stainless steel face sheets, braze and a honeycomb

The design recognition should be shared with Apollo Material. of thousands of persons across Early in the development of the command module design, PH15-7MO stainless steel was used in the fabrication of the heat shield viewing the launch was some days of the flight but that all the fabrication of the heat shield substructure brazed honeycomb panels.

It was soon discovered, however, that this material lost strength rapidly when exposed to the more stringent outer space conditions (extensive cryogenics).

Through a joint effort between Apollo Material, a steel company and another manufacturer, a new material — PH14-8MO stainless steel - was developed.

The command module designers were among a select group of the nation's top designers, architects, engineers and artists honored.

PROUD VIEWERS

Division Men Will Ever Look Back on Apollo

Six division men will long remember the flight of Apollo

The men, from Downey, Seal Beach, Launch Operations, and Mississippi Test Operations, represented their fellow employees at the launch of the 10day Earth orbital mission. Each was selected through the division PRIDE program on the basis of his outstanding work-

From Downey were Kelvit Shaw of Apollo Engineering, Bob Schoen of Research, Engineering and Test and Vic Diaco of Central Quality and Reliability Assurance. Represent-ing Seal Beach was Marvin Zeigel of Saturn S-II Major S/A Welding and Bonding. William Sullivan was on hand from Florida Launch Operations, and Rudy Lindsay was the MTO PRIDE representa-

Special Reception

The men were guests of honor at a special reception before the flight attended by a number of astronauts, members of division management, and top NA-SA officials. They toured the Kennedy Space Center facilities, and saw the launch from a VIP reserved seaf sec-

"During the countdown I noticed a feeling of complete confidence among those witnessing the launch," commented Lindsay. "I was impressed by the exact timing of the count, which demonstrates the success of the exhaustive testing and preparation which precedes lift-off.'

"When I heard the roar of the engines and saw the Saturn V slowly lift off, I felt a part of me going with it," Sullivan said. "I was proud to be standing there that day."

"It was a tremendous ex-perience, Schoen recalled, "The launch was very impressive and grand — a real thrill. It was a wonderful trip, I just wish everyone could go.

Shaw pointed out that being able to make the trip "was like a kid getting candy on Christmas. I was completely thrilled and elated. When I saw the lift-off it was like watching a new baby and being glad it was born."

Efforts of Thousands

"When I saw the Apollo 9 vehicle on the pad before the launch it was like seeing all the combined efforts of hundreds thing that will live with me a lifetime. I want to give my crew full credit for making this trip possible for me."

"Words cannot describe the thrill of watching the lift-off,' said Diaco. "Yells went up from the crowd as the engines ignited and then the roar and crackle reached us about 20 seconds later. You could feel the power and force needed for the launch as the earth shook. I made it possible for me to participate in the viewing of the launch. I'll never forget it," he

DONATE ONCE CLUB CAMPAIGN PLANNED

The Donate Once (DO) Club will begin its annual campaign Monday, March 24, according to R. C. Long, Executive Offices, chairman and treasurer of the DO Club.

The drive, which will last March 24 through March 28, is designed to give present DO Club members a chance to reevaluate their current pledges and to repledge for the coming year. At the same time, it will afford non-members an opportunity to join.

Atwood Accepts . . .

(Continued from Page 1, Column 2) ner in Washington, D.C. on March 5.

The citation read - "To the North American Rockwell Corporation, with its dedicated men and women, for its major contribution to the success of Apollo during 1968. Mission performance of both Apollo 7 and Apollo 8 was magnificent as our courageous explorers twice traveled through space, and for the first time flew a quarter of a million miles from Earth, orbited the moon ten times and came safely back. These accomplishments significantly advanced the technological strength and international prestige of the United States, while opening a new and promising era in man's conquest of the universe.'

William J. Hines, Rocketdyne's Washington director, was elected president of the National Space Club and took of-fice following the dinner.

Apollo 9 'Success' . .

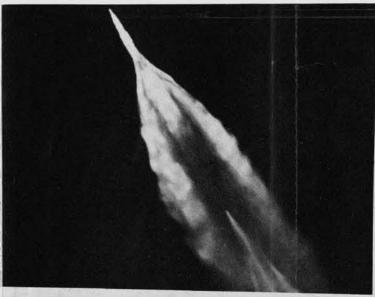
(Continued from Page 1, Column 5) mander Frank Borman earlier Thursday described Apollo as "the most perfect set of equip-ment man has ever built."

Mueller said a decision on the flight plan for the next mission Apollo 10, would be announced by March 24. As scheduled, the flight will be a test of the lunar module in orbit around the moon and a full rehearsal of the lunar landing maneuvers with the exception of the final touchdown on the surface. The crew will spend approximately 60 hours in lunar orbit perfecting navigational techniques.

"The mission fully achieved all of its planned objectives," Lt. Gen. Samuel Phillips, NASA Apollo Program director, told the newsmen. "We accomplished more in this mission than we set out to.'

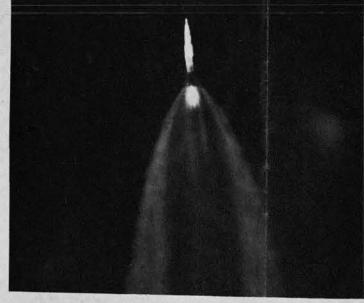
Dr. George Lowe, Apollo program manager for NASA's Manned Spacecraft Center, commented that the Space Divisiondays of the flight but that all were cleared up by splashdown. He said they involved the command module sextant, the temperature of one of the three fuel cells and the left rendezvous window fogged a little at times.

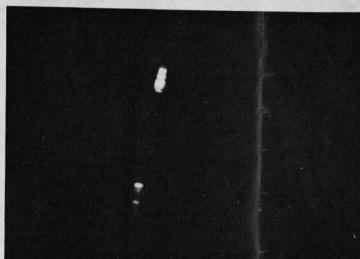
Speaking to employees following splashdown, Space Division president William Bergen commended them as true professionals." He added that from early data and from the point of accomplishment, Apollo 9 want to thank everyone who looked more perfect than any previous flight, and that the spacecraft and the Saturn S-II stage performed perfectly during the mission.





ON THE WAY - Unusual sequence photos taken from chase plane at 40,000 feet show early moments of last week's launch of Apollo 9. Top left and right frames show first stage engines powering vehicle downrange. At lower left, first stage





engines are about to shut down as vehicle is about 36 miles high and 50 miles downrange. In last frame, division-built S-II stage powers up to propel third stage and Apollo spacecraft to orbital altitude and away from the spent first stage. ceremonies for the event.

Apollo 8 Crew Will Be Given **Arnold Trophy**

Presentation of the H. H. (Hap) Arnold Trophy to Apollo 8 astronauts Frank Borman, Jim Lovell and Bill Anders will highlight the Air Force Assn's, 23rd annual convention next week in Houston,

The Arnold Trophy, the AFA's highest honor, is presented annually to aerospace's man-or men-of the year. It is given for the most outstanding contributions in the field of aerospace activity.

Dr. Edward Welsh, chairman of the National Aeronautics and Space Council, will be presented the Gill Robb Wilson Trophy for Arts and Letters. He is being cited for his part in interpreting the role of aerospace in modern society.

Also honored will be Lt. Gen. Samuel Phillips, NASA Apollo program director, who will be one of nine persons and four units receiving AFA Citations of Honor. Gen. Phillips will be cited for his management of the Apollo program and also will participate in an Apollo symposium Thursday morning.

The American Fighter Pilot's Assn. will be holding its annual Awards Banquet in conjunction with the AFA Convention.

Bob Hope will be master of

PRIDE IN PERFECTION

S-II Defect-Free Welds Attained

tion, the Saturn S-II-13 stage is tack weld, and then made a penoff to a good start at Seal etrant weld. Capping the oper-Beach.

A combined team from S-II Major S/A Welding and Bonding and S-II Vehicle Assembly has completed a defect-free circumferential weld joining cylinders 4 and 5 in the aft portion of the stage.

Day-Night Teams

E. B. Scott, manager of Vehicle Assembly, said the two day-night teams completed four perfect weld passes totaling 4,-354 inches, or an end-to-end weld longer than a football field. Confirming the error-free workmanship in 11 different checks were representatives of S. H. Owiele and P. F. William P. A. Owiele P. F. Wilson P. F. Wils of S-II Quality and Reliability

In its early stages of fabrica-lowed this with a continuous C. Franks, H. G. Teuschr and ation was a cover weld pass. Each phase was followed by either visual, x-ray, or dye-penetrant inspection, or a combination, said Scott.

> Heading the teams were supervisors A. P. Shultz and F. and L. R. Woodward on nights, and K. A. Sanger from Vehicle
> Assembly on days A. Gilbert from Major S/A

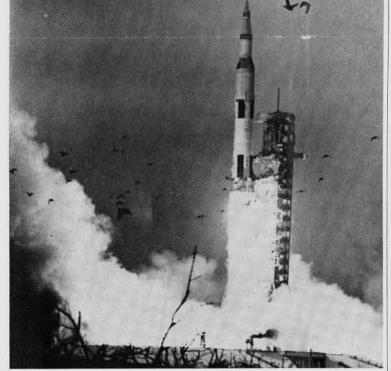
Crew members from Major S/A Welding and Bonding in-P. A. Quinlin, D. E. Wise, R. R. Hernandez, H. D. Albert-

C. C. Rangel, all on nights.

On the stage from Vehicle Assembly are leadmen M. M. Barnes, R. J. Terry, and R. E. Boner, Louis Pietrocci, Z. Y. Iaime. R. L. Bright, M. L. Jaime, R. L. Bright, M. L. Heyen and Fernando Ventura, all on days, and the night crew of leadman B. B. Roberts, J.

Inspectors on the welding job were Leadmen F. A. Campbell and B. N. Holbrook, G. G. Johnson and J. A. Marlin, all on days. On nights were leadman L. A. Garcia, T. B. Henry and C. K. Long.

Supplementing the team were weld engineers R. A. Engle, R. Following preparation of the son, D. D. Hunt, P. L. Givvs, D. Mendenhall and C. D. Calall days, and leadman W. H. electrician Paul Kortum from



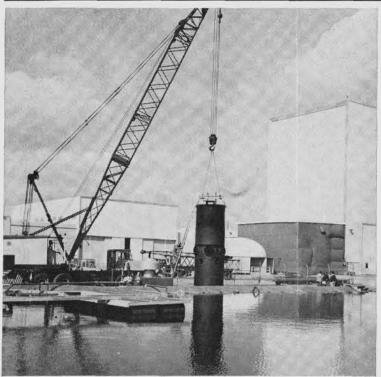
OLD AND NEW - Apollo 9, man's most modern flying machine, is in sharp contrast to birds — first to fly — which inhabit two cylinders, welding crews on G. E. Oravetz and Nick Zonni, fee, all of S-II Tooling, and area surrounding launch complex at Kennedy Space Center, Birds opposite sides first made an inexcitedly took wing as shock and sound of liftoff reached them. termittent tack weld pass, fol- Sutherland, E. A. Gherne, W. Seal Beach Plant Services.

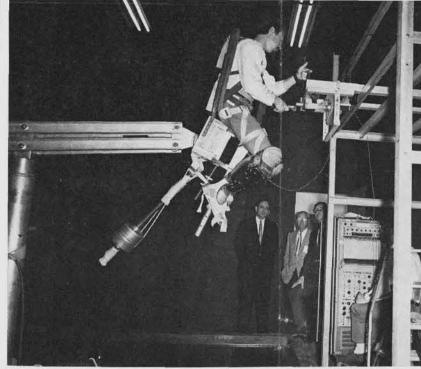


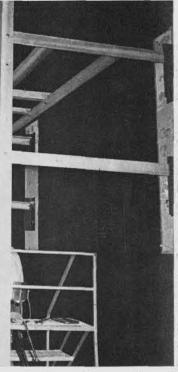
TALENTED TEAM — Combined first and second shift crews that teamed to perform perfect weld on aft cylinders of Saturn S-II-13 are shown in photos at left and right. Taking part were men from S-II Major S/A Welding and Bond-



ing, S-II Vehicle Assembly, S-II Quality and Reliability Assurance, S-II Tooling, and Seal Beach Plant Services. Operation included four weld passes totaling 4,354 inches — end-to-end weld that was longer than a football field.

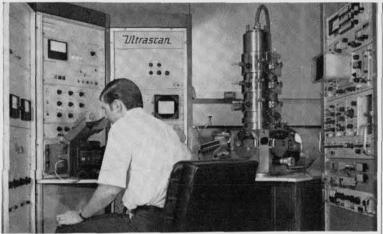






INNER SPACE AND OUTER SPACE — Wide ranges of division interests were vividly illustrated with recent installation of facilities planned for use in underwater and outer space research programs at Downey. In photograph at left, workmen ready tower for immersion in water tank formerly used for Apollo drop tests where it will be used in neutral bouyancy studies. At right,

engineer tries six-degrees-of-freedom tractionless simulator for studies of man's performance in environment simulating zero gravity. Facilities were installed by Downey Facilities and Industrial Engineering to technical requirements of Science and Technology's Life Sciences and Systems Dept. Both facilities will be used for company-sponsored and contractual research.



SCANNING MICROSCOPE - Dr. Noel C. Macdonald, member of the technical staff, Semiconductor Physics group, Science Center, is shown the new corporate miscroscope facility.

Apollo Applications . . .

(Continued from Page 1, Column 3) | the ATM. tems. He added that crewmen also were trying out new ways of using these capabilities to ad- in the program will be in the

The ATM will be equipped with automatic rendezvous and and Department of Defense-type docking system. It will auto- with emphasis on the medical WANTED TO BUYmatically rendezvous with the and space station habitability workshop, and then the crew studies, said Disher. Major ex-

Broad fields of experiments for the first and second mission major categories of engineering, technology, medical, scientific

Classified Ads

- FOR SALE -AUTOS-

58 Jaguar, 3.4L Sedan, 748-4844. Austin Healey, 714/675-3180. '66 Chevelle SS-396, 213/423-7857

58 Chev. Conv. \$50, 714/892-0876

760 Chev. Sta. Wag., 714/639-1601. 264 VW, \$850, 375-2616. 253 Ford Truck, ½T, Vette Eng., 749-9775.

Cad., GE 1-4797.
Cad., Coupe de Ville, 544-7759.
Bonneville, A/C, PS, \$1,450, 714/531-

'59 Olds, Make Offer, 866-4769, aft. 6.
Elva Race Car, 213/923-8012.
'67 Opel Sta. Wag., \$1,275, TA 8-5996.

MOTORCYCLES-

Honda 305 Scrambler, 923-8012. Triumph TR6, 650cc, 869-7463.

APPLIANCES-

Oven & burner, used/built in, \$40. 714/ 525-0190.

Range, G.E. electric d/oven. 213/927-9955. Westinghouse 220V, white, \$85, 425-Stove. 213/868-8361

Range, Okeefe & Merritt. 213/OR 4-4357. Washer, Lady Kenmore, \$25, 921-547

FURNISHINGS-

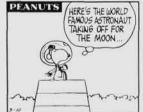
Furn., misc. 213/324-2869. TV, 21" blk/wht, console. OX 5-8355. Table lamps, walnut & brass. 213/865-7014. TV, 21" RCA, color. 213/430-0109.

BOATS-

Ski boat, SK type, inboard, 376-8153,

Royal Danish sterling flatwear, 213/867-2441, Rebuildable Ford "352," V8. 213/869-8347

can provide a remote-control periments in the third mission assist for the final docking of will involve the telescope mount. Rebuildable Ford "352," V8. 213/809-834. Dazor fluorescent desk lamp. TO 2-5543.

























SUPER SNOOPY - Snoopy, one of stars of "Peanuts" comic strip and NASA astronauts' personal symbol of recognition for outstanding contributions to Apollo program, covers his WW-I Sopwith Camel flying togs this week with his astronaut space suit in plan to be first beagle on moon. a special four-camera mount inventory of the resources.'

\$1.5 BILLION-PLUS IN APOLLO, SATURN CONTRACTS PLACED

received more than \$1.5 billion service modules and related worth of subcontracts from equipment; \$175,022,482 for Space Division thus far in the the S-11 stage and equipment, Apollo and Saturn S-II programs.

Work on the two programs waii. In addition, 20 suppliers in Puerto Rico, Canada, England, Scotland, Sweden, Germany, Japan, Italy, and Switzerland have provided \$371,765 worth of miscellaneous ma-

The total for subcontracts allocated by the division, as of the end of the 1967-68 company fiscal year was \$1,597,010,575. This breaks down into \$1,164,-185,671 worth of subcontracts ground equipment.

Companies in 49 states have for the Apollo command and and \$257,802,422 for miscellaneous subcontracts.

The division's principal Apolhas been shared by the division lo and Saturn S-II contracts with 9,461 subcontractors and allocated by NASA since the suppliers in every state but Ha- start of the lunar landing program in 1961 total about \$4.4 billion — \$3 billion for Apollo and \$1.4 billion for the S-II stage.

The NASA commitment to the division is for production of 49 manned or test spacecraft command and service modules, 30 engineering test vehicles, 23 full-scale mockups, and 15 S-II stages, plus many related items including support, testing and

Apollo 9 Mission Successful . . .

critical look at many systems. using these capabilities to advantage.

"It's great to have a spacecraft working so well we can really zero in on these things," said Kranz. "We used planetary it's all free, all bonus on this flight. We're going to keep trying to get in as many such new things as possible each day."

menting on "plusses" of the flight, said, "we have now had three outstanding spacecraft produced by North American Rockwell. Right at the beginning of the flight plan, one of the incommand/service module and we have one.'

Landmark Tracking

The final five days of the flight were spent primarily in further exercising the command and service module systems, and in performing landmark track-Earth resources photographic experiment.

(Continued from Page 1, Column 5) | during the photographic experiment designed to supplement He added that crewmen also data on how space photographs were trying out new ways of can be utilized to provide an accurate inventory of the Earth's resources.

The four cameras of the system were loaded with different film and filter combinations three black and white and one alignment (in the spacecraft infrared, with each camera navigation) for the first time covering about 70 square miles infrared, with each camera and came away swinging. And in each shot. The frames over-it's all free, all bonus on this lap about 60 percent to provide a stereo effect.

Photographs taken during the experiment will measure energy In the final news conference reflected by Earth resources feabefore splashdown, Kranz, com- tures, such as crops, forests,

The experiment originally was not scheduled until the launch of the Orbital Workshop gredients necessary to allow the in the 1970-71 time period, the 'D' mission (Apollo 9) to be initial mission in the Apollo successful was to have a good Applications Program, but was rescheduled because of its importance.

Dr. Robert Colwell, a project official and professor at the University of California, explained that, "with the world supply of natural resources rapidly dwindling, we need to ing tests and an important place them under the best possible management.

"An important first step," he The Apollo 9 crewmen used added, "is to get an accurate