SPACE DIVISION
Skywriter

Date ---------- Doc. No. ----------

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les Delivered to NASA

Craft Destined for Possible Use in Lunar Landing Mission

The distant tomorrows of almost a decade ago were sharply compressed into "now" this week with the delivery of Apollo Spacecraft 107 command and service modules to NASA's Kennedy Space Center.

Under present NASA plans, they could be the command and service modules used for the historic lunar landing mission — the realization of a national goal set by President John F. Kennedy in 1961.

The mission, Apollo 11, is scheduled for lift-off in July. The astronaut crew for the flight is Neil Armstrong, Michael Collins and Ed Aldrin.

However, Lt. Gen. Samuel Phillips, NASA Apollo Program Director, recently noted that finalization of plans for the moon mission will depend on the success of two earlier missions, Apollo 9 and Apollo 10.

Apollo 9 is scheduled for lift-off from KSC on Feb. 28 and will be the first manned test of the lunar module which later will take two astronauts to the moon's surface.

Apollo 10 is planned as a moon-orbiting flight, in which the lunar module, with two astronauts aboard, will separate from the command and service modules and descend to within 50,000 feet of the moon's surface.

The crewmen will return to the circling command and service module craft, leave the lunar module in moon orbit, and then begin the long trip back to Earth.

"From the time the Spacecraft 107 command and service modules went into final systems checkout, the entire team realized that they could be used in the lunar-landing mission," said Al Kehlet, Apollo assistant program manager for the spacecraft. "There was a constant reminder that we wanted, and needed, more than a good job."

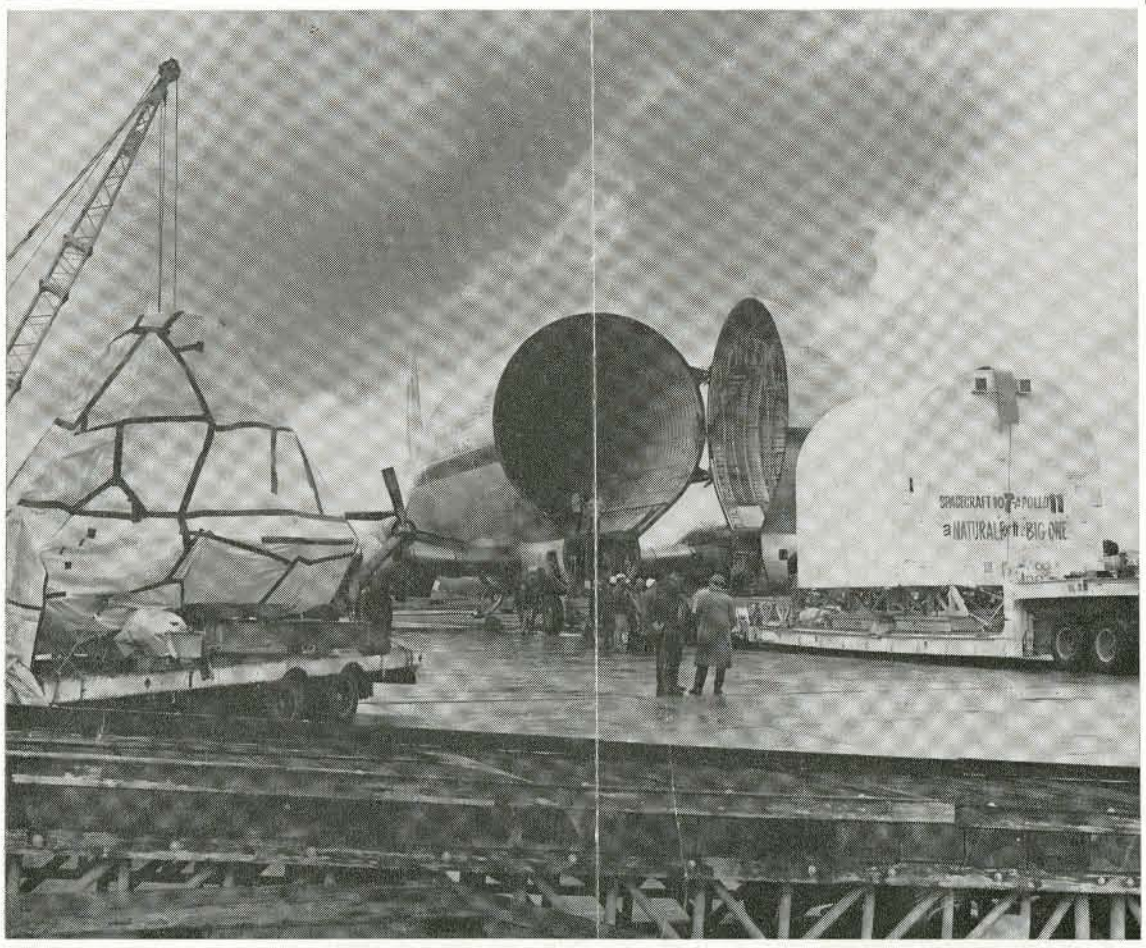
"The pride was there," added Kehlet. "You could feel it and see it in the way the team took special care in doing every job and in the way they went about meeting or beating our schedule milestones. They all realized how important this spacecraft is."

Coming in for special credit for the role they played in the delivery of the command and service modules were Senior Test Project Engineer Al Schmuck of Apollo Test Operations; Project Engineer Mike Roll of Apollo Engineering, and Paul Hirsch, Quality Control chief.

Also singled out by Kehlet were J. B. Alexander, Manufacturing coordinator, and test team members Jerry Sparkman, Gordon Stewart, Les Bendees, Bob Hime, Joe Suttles, Bill Barrett, Vern Dempsey, Ken Stoller, Bob Cadick, Brian Willis, Gordon Eno, Norm Christensen, Bill Van Valkenberg and Bill Wehner.

"And each of the other 200 persons directly involved in the system checkout of the command and service modules and the many others who gave us their outstanding support," added Kehlet.

Al Alcantar was project engineer on the spacecraft for NASA Manned Spacecraft Center's resident Apollo office at Downey, and Don Mayhew is project engineer for MSC's Houston Apollo office, along with Hank Sullivan.



READY TO GO — Apollo Spacecraft 107 command module, foreground, and service module, right, all packaged and ready for trip to Kennedy Space Center, are prepared for loading aboard Super Guppy aircraft. Vehicle left Wednesday for flight that could culminate in landing on moon.

Nixon's Inaugural Address Recalls View of 'Good Earth' from Apollo 8

The beauty of Earth, as seen through the eyes of the Apollo 8 astronauts and passed on to the world, was referred to by President Richard Nixon in his inaugural address Monday.

Calling for the peoples of the world to have the opportunity to choose their own destiny, President Nixon added:

"Only a few short weeks ago, we shared the glory of man's first sight of the world as God sees it, as a single sphere reflecting light in the darkness.

"As the Apollo astronauts flew over the moon's gray surface on Christmas Eve, they spoke to us of the beauty of the Earth—and in that voice so clear across the lunar distance, we heard them invoke God's blessing on it's goodness . . .

" . . . In that moment of surpassing technological triumph, men turned their thoughts toward home and humanity—seeing in that far perspective that man's destiny on Earth is not divisible, telling us that however far we reach into cosmos, our destiny lies not in the stars but here on Earth itself, in our own hands and our own hearts . . ."

Bergen Presents Apollo Review

An Apollo program review, highlighting the successful Apollo 8 mission, was presented to participants in the Town Hall of California meeting Tuesday at the Biltmore Hotel by division president William Bergen.

Bergen recapped past flights in the program and discussed the coming Apollo 9 and Apollo 10 missions that will play such an important role in deciding on the lunar landing. He supplemented his presentation with a film on the Apollo 8 flight.

Bergen concluded his program by emphasizing that the nation has achieved much from its program to put a man on the moon. He pointed out that no single advancement in history has occurred overnight.

As an example, he noted the vacuum tubes that made radio possible weren't developed until

(Continued on Page 2, Column 2)

Saturn S-II Has Important Role in Novel

Use of the division-built Saturn S-II stage as an integral part of an orbiting space station is outlined in "Four Came Back," a space-age suspense tale by author Martin Caidin.

The division provided Caidin with information and artwork on the S-II stage. In the novel, the 82½-foot tall, 33-foot diameter S-II is outfitted with laboratories used by station scientists.

The story concerns a six-man, two-woman international scientific team put into orbit hundreds of miles above Earth for an eight-month period. The suspense develops as members of the crew are stricken with an ailment believed to originate in space.

SC-107 Lift-Off to Culminate Five-Year's Work for Kehlet

A job he began almost five years ago will reach culmination for Al Kehlet when Apollo Spacecraft 107 lifts off its Kennedy Space Center launch pad in July on a mission that could land the first Americans on the lunar surface.

It seems almost fitting that Kehlet should draw the assignment as Apollo assistant program manager for the command and service modules. Back in June of 1964 he was appointed Apollo Engineering's project manager for the Apollo Block II — lunar mission-type — command and service modules design effort.

Kehlet's team played a major role in finalizing the design specifications for the moon mission command and service modules, developed the Engineering Product Plan used by Manufacturing for the planning, scheduling, and for fabrication of the craft, and formulated the procedures for configuration management and critical design reviews.

"I feel it is a particular honor and privilege to work on this program," said Kehlet, "to be able to see it through, in effect, from the start to the realization of our goal.

"When I look at the spacecraft now it brings back many memories and, in particular, I can visualize the personalities

(Continued on Page 3, Column 4)

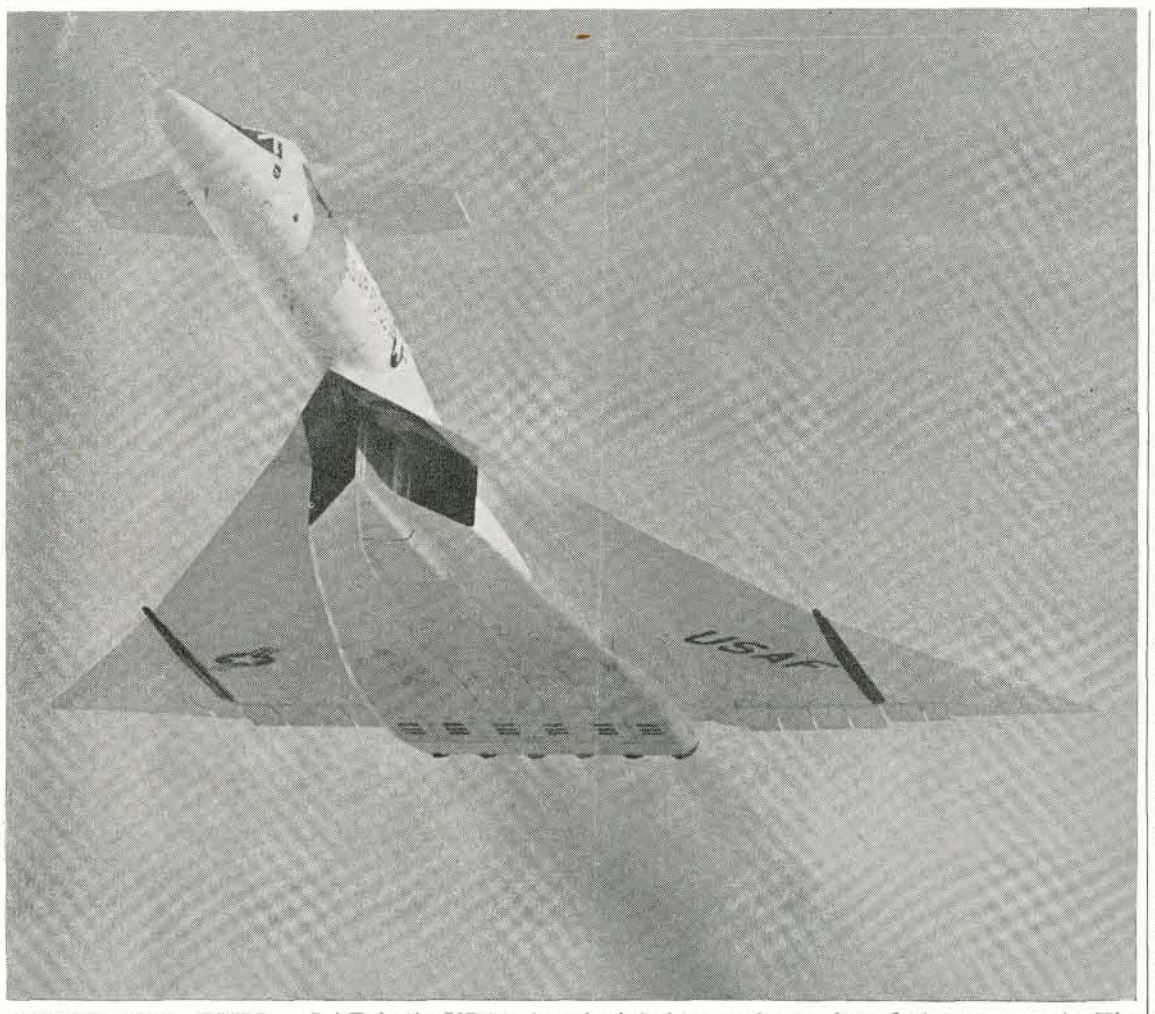
Hoover Makes 1969 Precision Flying Debut at Pomona JC Event

R. A. (Bob) Hoover, executive assistant to the vice president, Public Relations and Advertising, North American Rockwell Corp., will make his first precision flight demonstrations of the new year tomorrow and Sunday, at Cable Airport, Upland.

Piloting a twin-engine Shrike Commander business/utility aircraft built by North American Rockwell, Hoover will execute all the maneuvers normally associated with his F-51 Mustang flights, plus some new ones.

Hoover, who is president of the 1,100-member Society of Experimental Test Pilots, will be participating in an air meet sponsored by the Junior Chamber of Commerce to raise funds for the new Pomona Boys' Club. No admission will be charged.

ASTRONAUT AWARDS — Astronaut Silver Snoopy Award pins are presented to Fred DeAngelis, left, and Bert Schwab, both of Apollo Material, by Director John Mihelich. Awards, accompanied by letter from astronaut Jim Lovell, honored two men for their outstanding work with division Apollo subcontractors.



BOUND FOR OHIO — LAD-built XB-70 is scheduled to make its last flight next week. The 2,000 m.p.h. research airplans is to fly from her long-time home at Edwards Air Force Base, Calif., to USAF Museum, Wright-Patterson AFB, where she will join America's other famous aircraft.

Apollo Personnel Wins Buc Trimmer Trophy Third Time

Apollo program personnel captured the Buc Trimmer Trophy competition for December, taking the honors for the third time in the past six months.

Runners-up in the monthly standings were Material, second, and Quality and Reliability Assurance. Rounding out the Top 10 in order were:

Saturn S-II; Administration; Financial; Research, Engineering and Test; Management Planning and Controls; Contracts and Pricing, and Manufacturing and Facilities.

Outstanding contributors in the major organizations in December were:

Don Gallegos; Administration; N. R. Anderson, R. J. Harrington, W. W. Potter, W. S. Dwinell, L. E. Pumphrey, D. T. Haigh, and J. H. Weismose, all from Apollo;

L. A. Strelsky, Financial; F. B. Meek, Management Planning and Controls; T. J. Webb, Manufacturing and Facilities; G. H. Peterson, Material; L. M. Patrick, Quality and Reliability Assurance; K. L. Blackmer and G. C. Frey, Research, Engineering and Test, and Robert Highland, Saturn S-II.

Material, with its strong December showing, moved into first place in the annual Buc Trimmer standings a point ahead of second-place Saturn S-II. Apollo has a firm hold on third place.

Rounding out the Top 10, in order, are Quality and Reliability Assurance; Administration; Research, Engineering and Test; Contracts and Pricing; Manufacturing and Facilities; Launch Operations, and Management Planning and Controls.

L. A. DWP Joins Fast Breeder Program at AI

The Los Angeles Dept. of Water and Power, the largest municipal electric utility in the United States, has joined the fast breeder nuclear reactor program at the Atomics International Division.

The department is the 20th utility to participate in the program, which is being conducted by AI and the General Public Utilities Corp.

The program is aimed at developing a 350-to 500-megawatt sodium - cooled fast breeder reactor which could be installed on the system of the Pennsylvania Electric Co., a GPU subsidiary. The fast breeder is a nuclear reactor type which creates more nuclear fuel than it consumes, thus leading to the economic generation of electricity.

Haffner Discusses Radiation

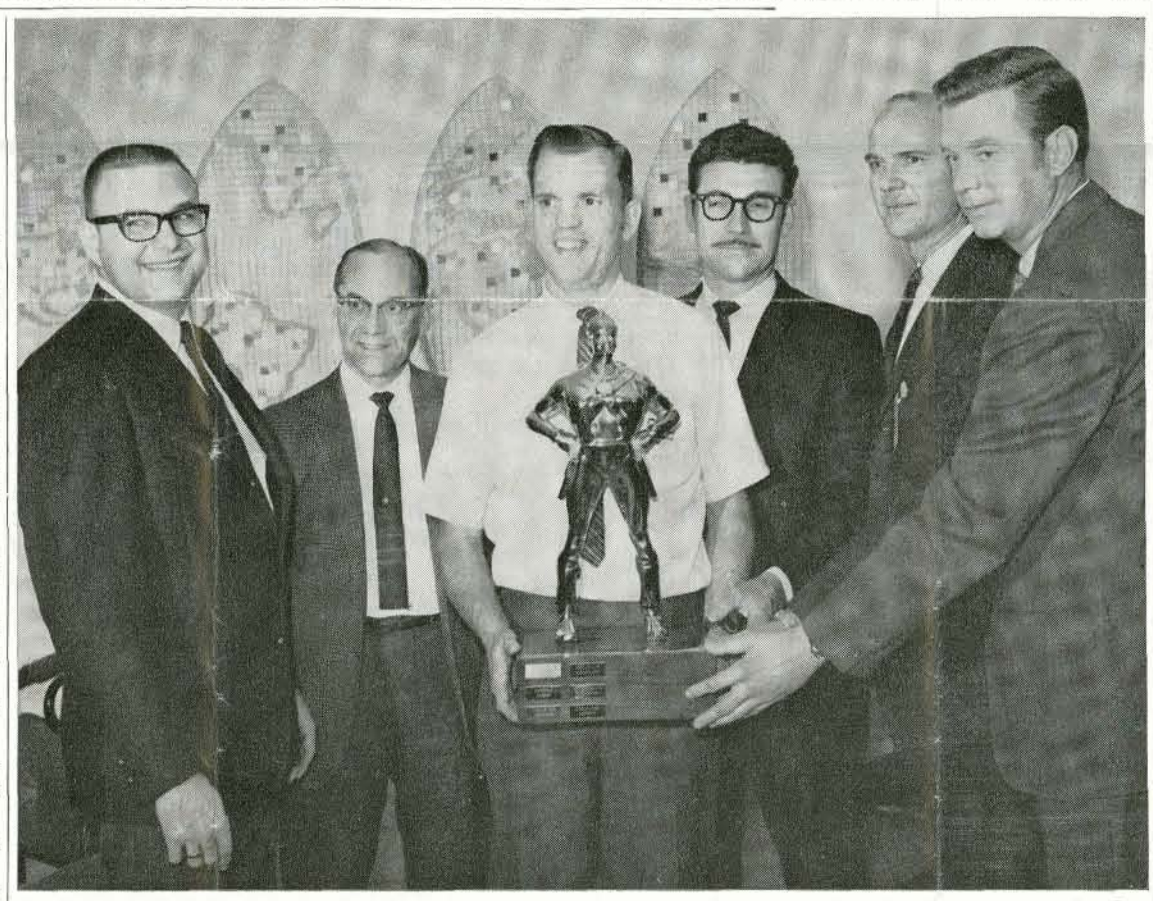
Dr. James W. Haffner, research physicist, Research, Engineering and Test, will present a paper on "Calculated Dose Rates in Jupiter's Van Allen Belts," at the American Institute of Aeronautics and Astronautics' 7th Aerospace Sciences Meeting, held this week in New York City.

Impressive Firsts Logged in Apollo Moon Mission

An impressive number of firsts were logged by Apollo 8 during its historic moon-orbiting mission, according to NASA's Manned Spacecraft Center.

The milestones ranged from setting distance, flight speed, and reentry speed marks for manned flight, to providing man with his initial first-hand look at the moon. The firsts included:

- First time man has been in the influence of a gravity field of a planet other than Earth.
- First time man has traveled as far as 223,000 miles from Earth.
- First time man has traveled as fast as 24,171 mph.
- First manned Earth-atmosphere entry at speeds of almost 25,000 mph.
- First manned flight on a Saturn V launch vehicle.
- First manned operation of the Apollo system under the lunar environment conditions for which it was designed.
- First use of the variable-azimuth launch concept in manned missions.
- First voice communications over lunar distances.
- First time man has navigated in cislunar space.
- First time man has been completely out of contact with his home planet.
- First time man has been beyond the protective sheath of the Earth's magnetic field.
- First time man has seen with his own eyes the full sphere of the Earth.
- First time man has seen the moon close-up with his own eyes.
- First time man has observed the backside of the moon.
- First time man has photographed the moon close-up and returned film images to Earth.
- First close-up appraisal of the moon's surface by man.
- First live television transmissions showing the full Earth sphere.



OUTSTANDING CONTRIBUTIONS — Buc Trimmer Trophy won by Apollo program in December is held by employees who played major role in victory. Outstanding contributors from left are D. T. Haigh, W. S. Dwinell, N. R. Anderson, L. E. Pumphrey, W. W. Potter, R. J. Harrington.

Apollo 8 Review . . .

(Continued from Page 1, Column 1)

almost 50 years after the mathematical equations for the laws of electricity and magnetism were spelled out by James Maxwell in 1860. But, he emphasized, following in almost regular 10 year intervals were the invention of television in the 1920s, radar in the thirties, computers in the forties, and atomic energy to generate electricity in the 1950s.

TV PROGRAM TO SHOW DIVISION

Filmed sequences of the operation of the Apollo Simulation Center in Bldg. 4 at Downey are scheduled to be shown Sunday as part of the CBS TV program, "21st Century," KNXT, Channel 2, at 6 p.m.

NASA HONOR — Secretary Jan Bradley admires NASA Exceptional Service Medal and plaque presented to Bill Gray, manager of NASA Manned Spacecraft Center's Resident Apollo Spacecraft Program Office at Downey. Gray was cited for his "outstanding contributions to the success of Apollo 8" moon flight.

December TU Award Given to Apollo Mfg.

The Technology Utilization Award for December this week was presented to Apollo Manufacturing.

Accepting the award on behalf of his organization was Director Paul Greenhaw. The award is presented monthly to the organization submitting the highest percentage of accepted new technological developments.

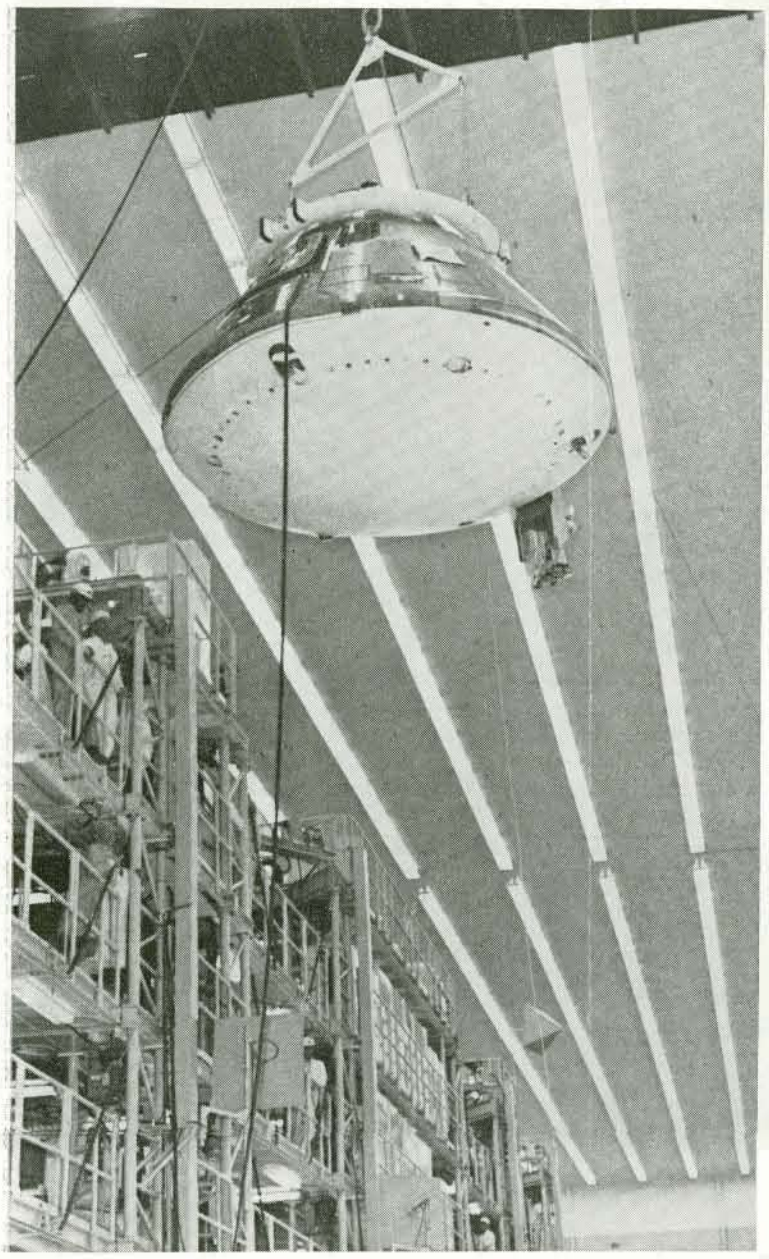
Technology Utilization is part of the NASA program to make space age developments available to business and industries across the nation.

Reservations for Exec Night Due Wednesday

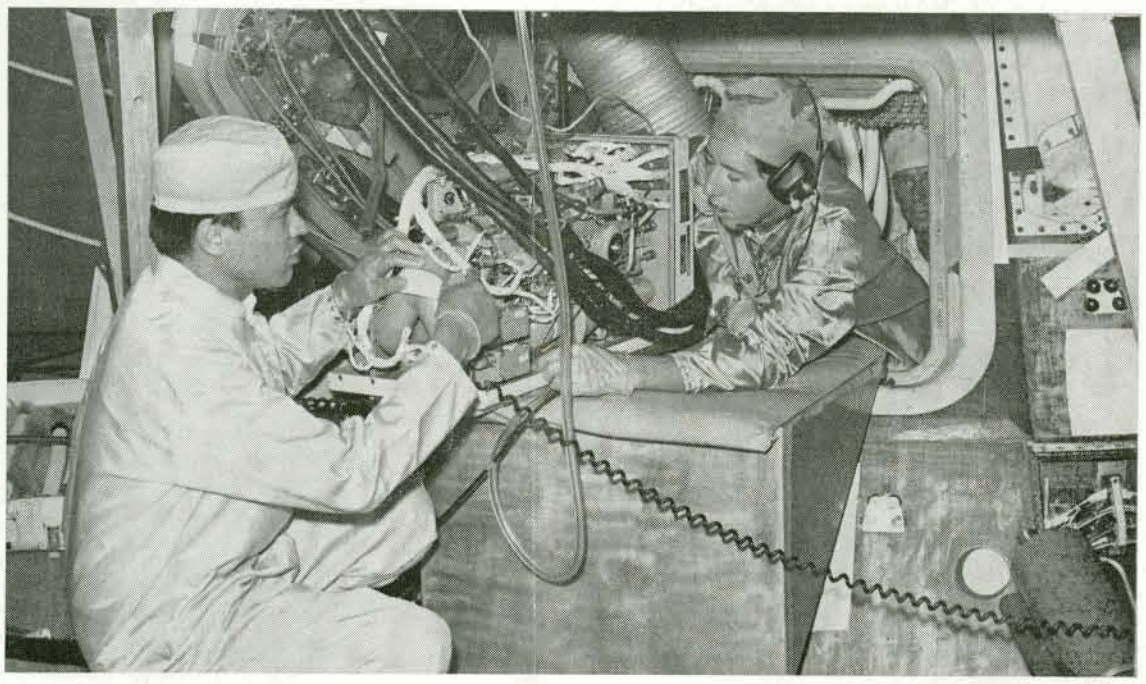
"Executives in Review" will be the theme for this year's Executive Night sponsored by the Stellar Chapter, National Secretaries Assn.

The event will be Feb. 11 at the Los Coyotes Country Club, and is open to members and guests. Reservation deadline is Wednesday. Full information may be obtained by calling Avis Brown, Downey Ext. 3737 or 3175.

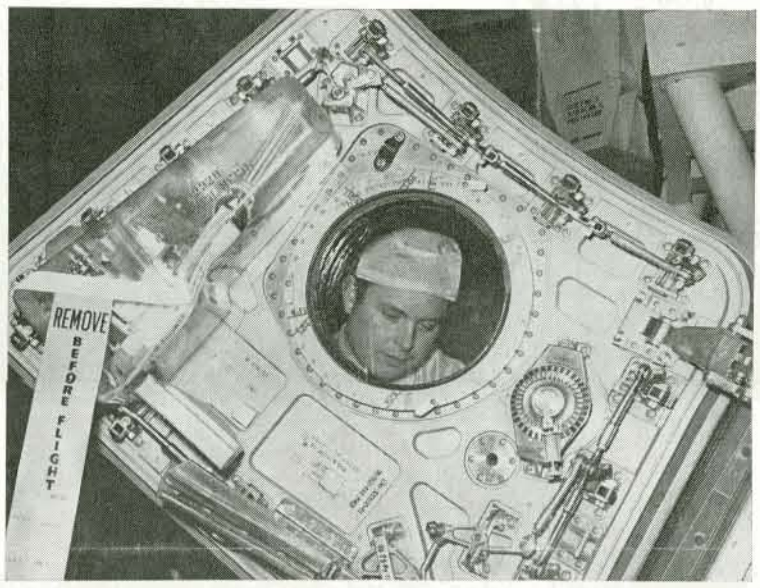
FINAL CHECK-OUT OF SPACECRAFT CALLS FOR MANY TALENTS



ON THE WAY — More than 200 division employees were directly involved in final checkout of Apollo Spacecraft 107. Signal of end of one phase was lowering of module after system test.



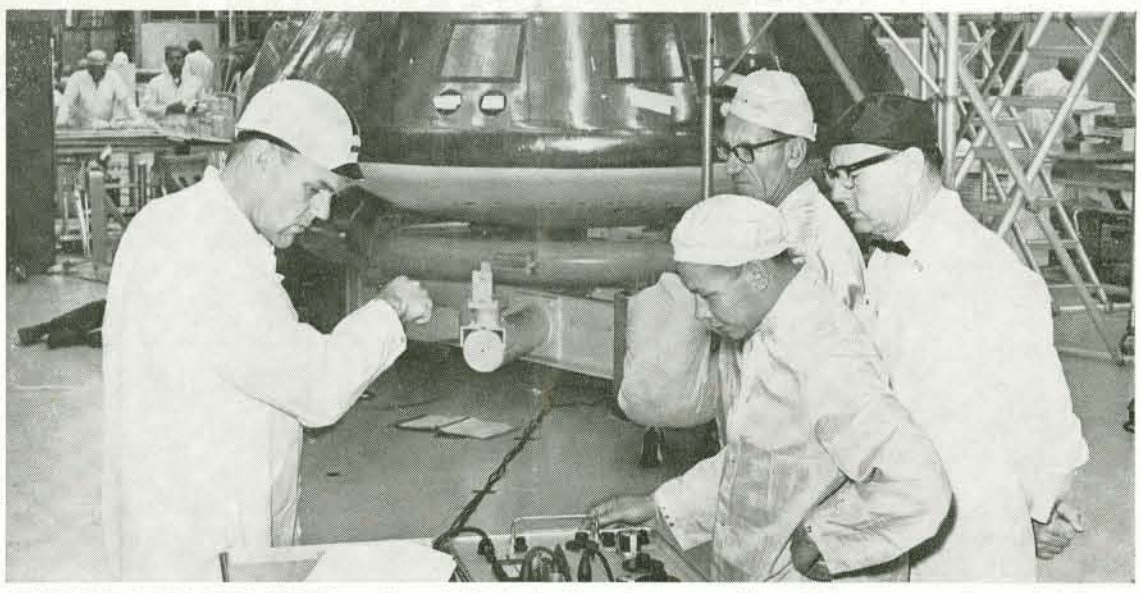
SYSTEM CHECK — There was no detail, no matter how minute, which could be given less than complete attention. Above, Robert Quervo, left, and Richard Thomas, are shown during the check.



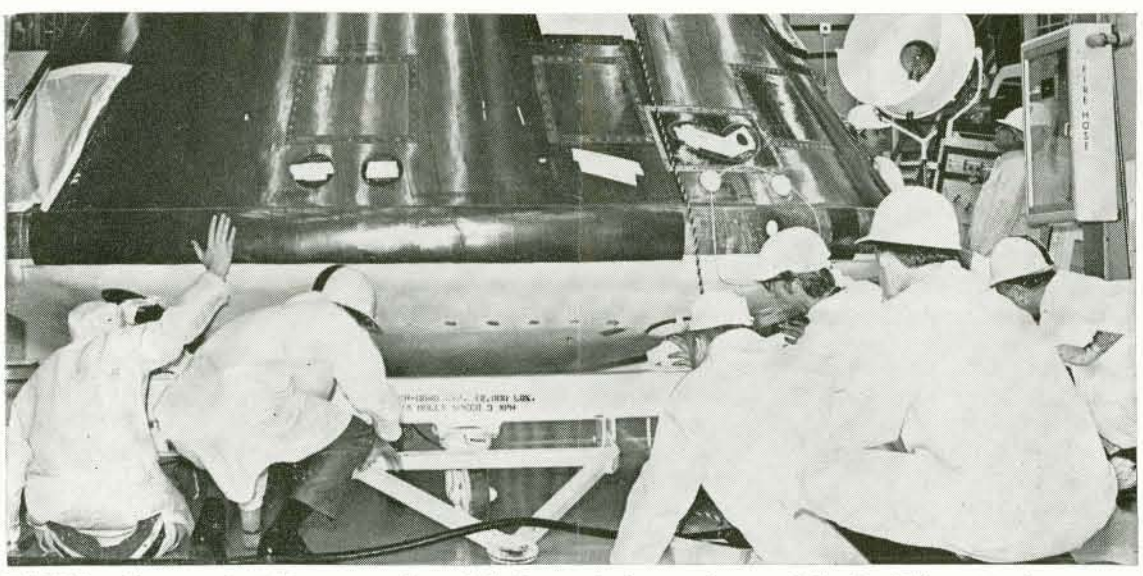
IN THE CIRCLE — Jim Griggs, of Processing, is framed by hatch window as he puts the finishing touches on insulation. Each operation must be checked according to a prescribed plan.

CLOSE LOOK — Inspector Art Mirandi uses tube light to get better view of components.

TOP TEAM — Team members, from left, top to bottom: Space Division's Al Kehlet, Al Schmuck; Don Mayhew, of NASA, Space Division's Mike Roll; Al Alcantor, of NASA, Paul Hirsh, of Space Division, and Bud Wirman, of NASA in post-test photo.



WEIGHT AND BALANCE — One of final checks of command module was weight and balance vertification. Shown, from left, are Lloyd Woolover, Harry Takechi, Art Mirandi, Roy Reynolds.



EASY! — Spacecraft 107 command module is gently lowered onto dolly in Bldg. 290 clean room in one of final operations before shipment to NASA's Kennedy Space Center. Command module is destined for the Apollo 11 mission, which could be the first of the lunar-landing flight.

Al Kehlet Sees Job Done . . .

(Continued from Page 1, Column 4)

of many people now fabricated in metal," he said.

"We had a tremendous team," Kehlet recalled. "Everyone did his job and did it well, and inspired others to produce."

Before joining the division in 1962 as technical assistant to the Apollo assistant chief engineer, Kehlet worked with NASA for 11 years. He is one of the seven original patent holders on the Mercury capsule configuration.

He began his NASA career at the Langley Research Center, serving as a project engineer on rocket propelled airplane configurations, and later became a member of the Space Task Group, forerunner to today's Manned Spacecraft Center. He headed the Aerodynamics Section on the Mercury program until early in 1960, when he was assigned to work on preliminary design of the Apollo spacecraft.

With the division, in addition to his initial assignment, he has held the posts of chief project engineer, project manager for the Block II design work, and now assistant program manager for Spacecraft 107 command and service modules, Kehlet's career, seemingly, has taken him almost full cycle — from participant in the design of the nation's first manned spacecraft to heading the Space Division effort on the spacecraft that could take the first American to the moon.

Wilson Lauds NR, UAW for Apollo

Rep. Charles H. Wilson (D.-Calif.) has extended his remarks in the *Congressional Record* in praise of the successful mission of Apollo 8.

His remarks, in full, follow:

"Mr. Speaker, in a year characterized by national self doubt and inner turmoil, the triumph of Apollo 8 has given rise to hope and pride. In 1931, Lincoln Steffens said: 'I have been over into the future and it works.'

"In 1968 three valiant men went physically into the future and it did indeed work.

"The whole world stands awed at the precision of the Apollo voyage — a work of scientific art that reflects the brilliance and dedication of the largest task force ever assembled for a space mission: 300,000 engineers, technicians and workers, and 20,000 contractors. Indeed, our $33 billion space effort over the last 10 years has climaxed in this supreme moment when both imagination and invention met and soared.

"Projecting their views of the Earth as seen from the moon, the moon photographed from 70 miles away, and the backside of the moon, the Apollo 8 flashed its splendor around the world. Its voyage was so flawless that even the Russians had to concede their admiration and respect.

"Many other critics of our space program have also been silenced by Apollo's success and the doubting Thomases have seen their doubt and cynicism dispelled by this triumph of organization and cooperation. For, in a manner of speaking, Apollo 8 arose, like the Phoenix, from the ashes — the ashes of Apollo 204 which burned on its pad in January 1967. A tragic event, surely, but certainly not just cause for indictment of our whole space program, as some demagogs will claim.

"After this tragedy, the Apollo vehicle was extensively overhauled; no detail was overlooked, and every component was checked and double checked. The many dedicated men and women of NASA and its contracting companies sought perfection — and achieved it. All of these people deserve our heartfelt thanks for helping America realize an impossible dream.

"With Martin Luther King and Robert F. Kennedy taken from us this year, we were sorely in need of a hero. The gap was filled by the expertise and courage of three men — Col. Frank Borman, Capt. James Lovell and Maj. William Anders — who undertook the arduous 147-hour voyage. These three men, in daring to meet the spiritual, intellectual, and physical challenge of space, can truly be regarded as modern Columbuses.

"Yet, while the astronauts gain the limelight, countless others have played a great part — either directly or indirectly — in the adventure of Apollo. For example, just recently, Mr. Lee Atwood, president of North American Rockwell Corp., and Mr. Henry Lacayo, president of the UAW-Aerospace Workers in my district, cooperated in negotiating a contract beneficial to both labor and management at North American Rockwell. As one of NASA's prime contractors, North American Rockwell's ability to run a smooth, efficient organization is one of the major factors in its success. It is companies such as these, where management and labor have worked for the mutual benefit of one another in a true demonstration of confidence and cooperation, that we owe the triumph of Apollo 8.

"Success in America is often measured in one's ability to get thing's off the ground. Using these criteria, Apollo 8 is one of our magnificent successes. For, as Joseph Conrad wrote: 'The ship, a fragment detached from the Earth, went on lonely and swift like a small planet.'"

SPACE DIVISION Skywriter

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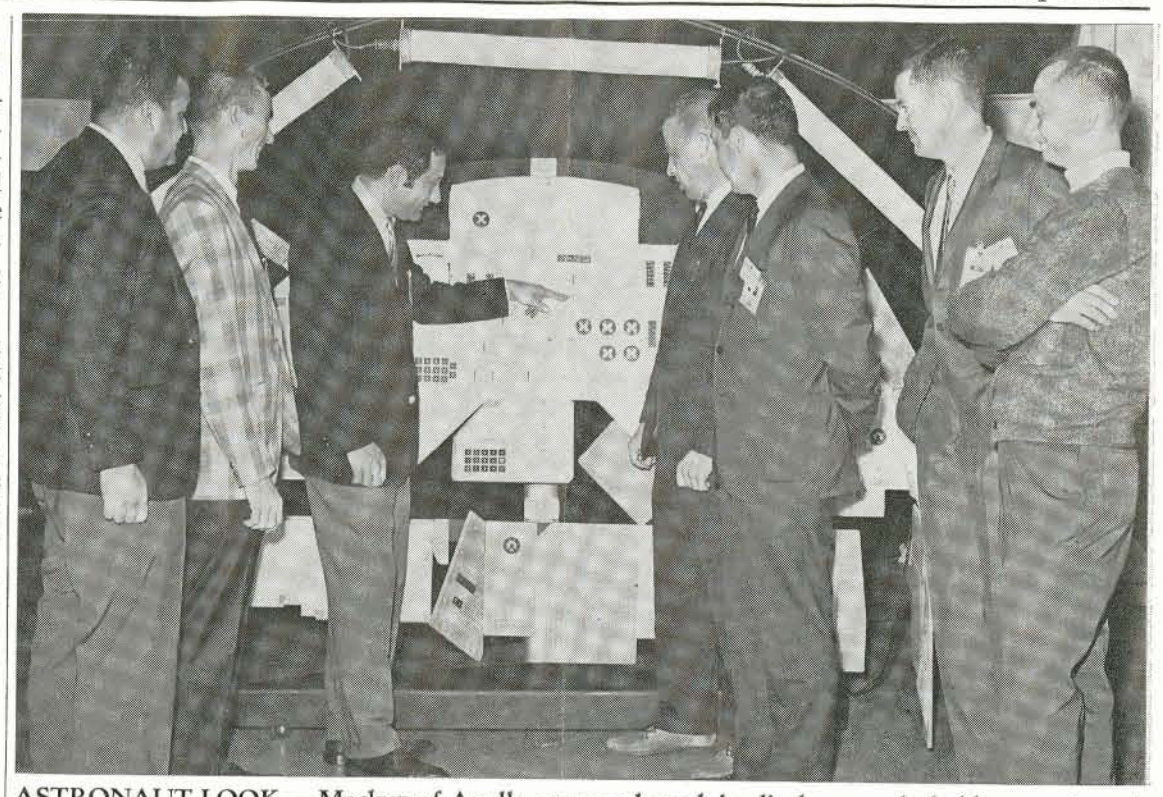

ASTRONAUT LOOK — Mockup of Apollo command module display panels holds attention of, from left, division's Joe Cuzzupoli, astronaut Walt Cunningham, division's Len Tinnan, astronaut Paul Weitz, Charles Williams of NASA's Manned Spacecraft Center, astronauts Joe Kerwin and Owen Garriott. Division has been awarded $7 million contract for preliminary design of modifications to Apollo Block II spacecraft for use in long-duration Apollo Applications program missions.

SIGN OF PERFECTION — Employees of Apollo Bonded Structures display sign of no-defect workmanship on completion of three important components for Apollo spacecraft. Latest error-free units added to department's list were the command module inner crew compartment for Spacecraft 115-A, aft portion of Spacecraft 116 command module inner crew compartment, and drogue assembly 11. All completed various bonding operations, plus necessary preparatory work.

Classified Ads

FOR SALE

AUTOS

'67 MGB, wire whls. 213/434-0288.
'64 VW Bug, $850. 213/861-0249.
'32 Ford 2/dr. Sedan, $1,700. 213/633-1632.
'62 Olds, $500. 582-8014.
'57 Chev Wagn, 4 spd, $400. 213/597-5815.
'68 Impala V8, stick/283, $700. 213/867-3621.
'66 Corvette Fastbk, 4 spd, Mag Whls, 213/863-4975.
'62 Buick Specl. conv. 714/826-8737.
'60 Valiant. 213/861-4641.
'58 Ford Truck. 644-6627.

HOMES

2 br, 6.5% Loan. 213/569-4776.
3 br, 2 ba, pool. 213/421-8638.
2 br, Inglewood. 213/865-0016.

WANTED TO BUY

'56-'61 Ford V8 eng. only. 521-9493.

RIDE WANTED/OFFERED

Offer/want, Reseda/Downey. 345-7429.

FOR RENT

3 br, 2 ba, La Mirada. LA 1-6034.
Big Bear, sleeps 7. 714/537-7299.

Koch Serves as Treasurer

Cliff Koch of Internal Audit is serving as treasurer of the La Habra Coordinating Council. The council, which works with the city government, is made up of representatives of various community organizations.

WALLACE E. FORE APPOINTED VP — MANUFACTURING, A&SG

Wallace E. Fore this week was named vice president - Manufacturing for the Aerospace and Systems Group by President John R. Moore. The appointment becomes effective Feb. 1. He reports to R. H. Ruud, senior vice president - Operations.

Fore has been vice president of Manufacturing and Facilities at the Rocketdyne Division. He replaces William F. Snelling, who became executive vice president of the Columbus Division late last year.

At Rocketdyne, T. E. Myers has been named vice president - Operations, a new organization which includes Manufacturing, Facilities and Industrial Engineering, Quality and Reliability Assurance, and Logistics. Myers had been vice president and general manager of Rocketdyne's Solid Rocket division, McGregor, Tex.

Fore joined North American Aviation in 1938, and held many supervisory positions in Manufacturing, including foreman of the Plastics Dept. at Downey. He was named assistant plant engineer at the Los Angeles Division in 1953, and plant engineer there in 1956. He transferred to Rocketdyne to become director of Manufacturing Programming and Facilities in 1962, and was named a vice president in 1964.

He has a Chemical Engineering degree from the University of Southern California (USC), a Master of Engineering degree from the University of California at Los Angeles (UCLA), is a registered professional engineer in the State of California, and a colonel in the U.S. Army Reserve (ret.).

Fore is a member of the American Institute of Plant Engineers, and the American Institute of Aeronautics and Astronautics.

In community affairs, he is a members of the Canoga Park Chamber of Commerce, and past president of Archimedes Circle, a USC support group. He resides in Tarzana, California.

PRIDE IN PERFECTION

Apollo Spacecraft Components Are Error-Free at Completion

The outstanding performance of Apollo Bonded Structures personnel culminated in the recent error-free completion of three important Apollo spacecraft components.

Added to the department's list of defect-free workmanship were the command module inner crew compartment for Spacecraft 115-A, the aft portion of the Spacecraft 116 command module inner crew compartment, and drogue assembly 11, which is part of the command module to lunar module docking device.

The Spacecraft 115-A inner crew compartment went through final closeout bonding without a defect, and is one of eight compiled by the department, said General Supervisor Tony Ciotta.

The final bonding operations on the Spacecraft 116 unit included locating and prefitting 133 detail parts with a total of five separate autoclave curing operations. The unit was the tenth bonded by the department without a squawk.

Work on the drogue assembly included fabricating 70 small parts into the unit. All were located, bonded,and cured in one single operation. Checking of the assembly included x-ray, ultrasonic, dimensional, and laboratory tests.

Taking part in the work was a team headed by Supervisor Tom Cribbs. Members included:

W. H. Lutz, Hank Vaughn, A. L. Dudley, Jerry Isaacson, E. E. Flournoy, Fred Purvis, Jim Slatton, George Freyre, Willy Davis, Denny Culp, E. K. Wiley, M. C. Arndt, G. E. French, R E. Wallace, A. R. Salcido, G G. Scranton, E. C. Parker, C. W. Jones, K. E. Stevens, R. K. Vaughn, H. B. Day, M. C. Paddock.