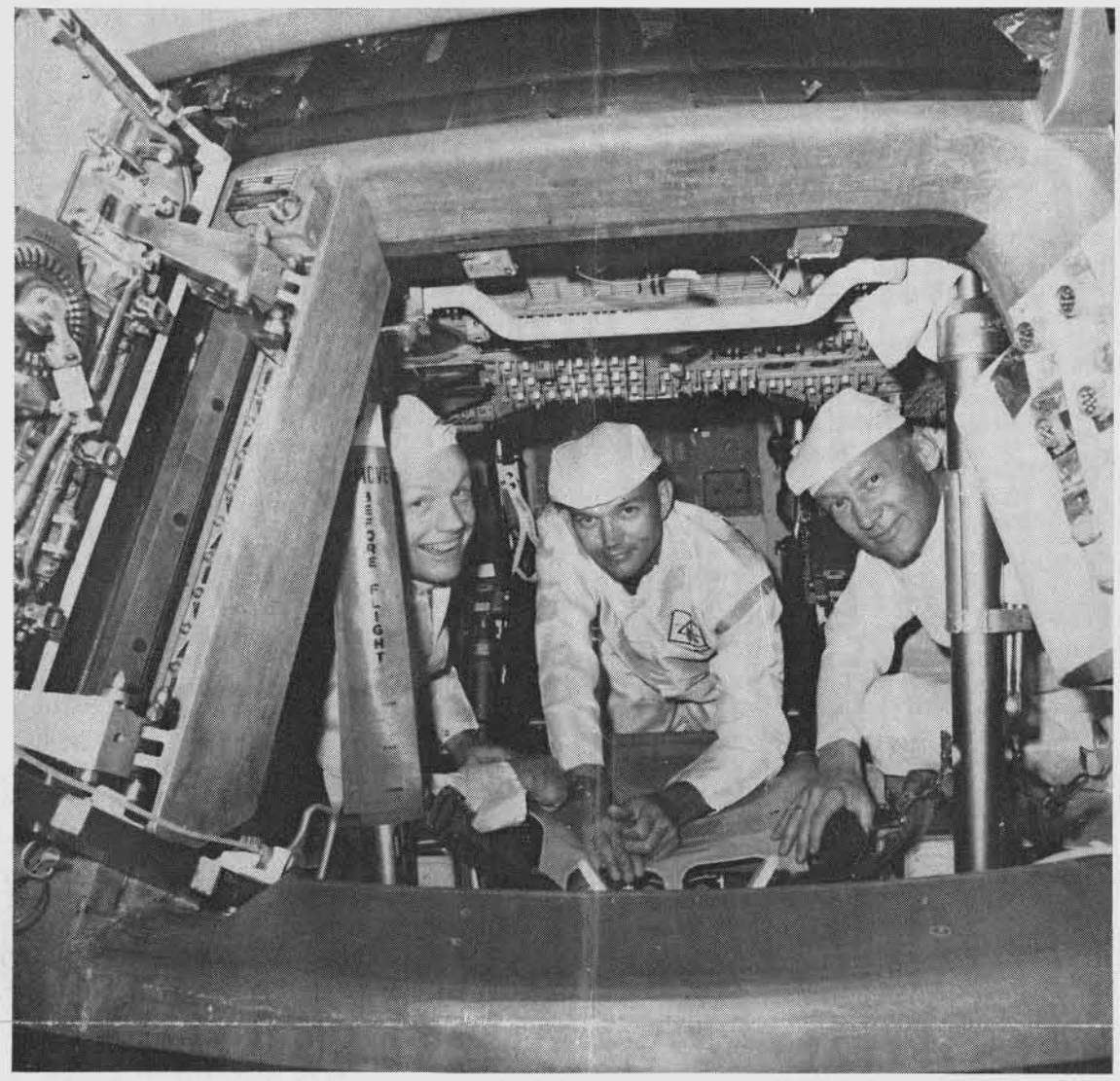
North American Rockwell News

Space Division Skywriter Downey, California Volume 29 Number 24 June 20, 1969



MISSION PREPARATIONS — Deep in theirtraining for the lunar landing mission are Apollo 11 astronauts, left to right, Neil Armstrong, Mike Collins and Ed Aldrin. The astronauts are shown in the Space Division-built SC107 atop the Saturn V on Launch Pad 39A at NASA's KSC checking out the spacecraft. NASA announced that the mission would go July 16, as planned.

Final Readiness Tests Under Way on Apollo 11

Division Develops Superinsulation Testing Technique

A new and inexpensive technique for testing effectiveness of superinsulations for future launch vehicles has been developed at the Space Division.

Dr. Milton B. Hammond, Research, Engineering & Test, explained that superinsulations will be required to prevent excessive "boil-off" (evaporation) of liquid hydrogen in long-duration missions.

In the Apollo lunar-landing program, spray-on foam insulation of the liquid-hydrogen fueled Saturn S-II stage is adequate because the insulation protection is needed only for a relatively short time. "The world of superinsulations will come into being during the 1970s," Hammond said, "when we can look forward to missions requiring this protection

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'Wet' CDDT To Be Completed July 2, 'Dry' CDDT, July 3

A month and one day from today history may record the first footprints on the moon and mankind will have taken a momentous step toward unfolding the mysteries of the universe.

Neil Armstrong, and then Edwin "Buzz" Aldrin, will take their first steps on the lunar surface while the third member of the Apollo 11 astronaut crew, Mike Collins, continues orbiting the moon in the Space Division-built command service modules.

Lt. Gen. Samuel Phillips, Apollo program director, last week in Washington, D.C., confirmed July 16 as launch date for the epochal Apollo 11 mission.

At the same time he made the commitment, Gen. Phillips added a cautionary note: "We will not resitate to postpone the

(Continued on Page 2, Column 4)

Campus Crisis No Cause

BUSINESS MUST NOT TRIM COLLEGE GIFTS — ANDERSON

American businessmen have an enormous stake in the healthy survival of the nation's colleges and "must not bail out" on their responsibilities to these schools, Robert Anderson, executive vice president of North American Rockwell has told the Rotary Club of New York.

"If we reduce our contributions of time and money — if we walk away from responsibility because of the present campus crisis — we do so at the time when the colleges need us the most," he said in an address last week.

"We must not wash our hands of this college problem because we find it annoying, or unpleasant, or troublesome. Too much is at stake for us to permit ourselves that simple and self-defeating course.

"We depend on these institutions to continue what they have done so well: to turn out well-trained, well-motivated young people to take positions of responsibility in the economy — perhaps in business, perhaps in some of the other pursuits.

"The need of business for better educated, more knowledgeable people is growing faster than the 'production rate' of the colleges. We need them today in specialties that weren't even dreamed of twenty years ago, and we will need them tomorrow in specialties that we can now only dimly perceive."

The increasing dependence of industry and commerce on the product of the colleges and universities is one reason why business has supported higher

(Continued on Page 2, Column 4)

FOURTH OF JULY TO BE OBSERVED

Friday, July 4, will be observed as a holiday. Regular work shifts will be in effect on Monday, July 7.

Only employees needed for special assignments will work on July 4. Those required to work will be so notified by their supervisors.

Employees will receive eight hours' pay for the Fourth of July holiday in accordance with existing policy.

SPACE DIVISION TALLIES 99.02%, LEADS BOND DRIVE

The Space Division has just completed the most successful Savings Bonds Drive.

While returns are not final, the division tally of 99.02 percent sign-ups is believed to be the highest proportion of employees ever registered by any major division of the Aerospace and Systems Group.

Last year, the division scored 98.6 percent.

As of last Friday, 18,871 out of 19,069 employees had sign-up. This includes employees at Downey, Seal Beach, Florida Launch Operations and Mississippi Test Operations.

Walter Epps, Jr., division campaign chairman, said, "the results are very gratifying."

(Continued on Page 3, Column 1)

CORPORATE NEWSPAPERS CHANGE NAME

To achieve a unified name for all employee publications within the corporation, all newspapers will be known in both the Aerospace and Systems Group and Commercial Products Group as *North American Rockwell News*. The name *"Skywriter,"* which has been identified with the Aerospace and Systems Group, will be used only in the dateline to identify the division for which the paper is produced.

The change is a part of the corporate identity program, which seeks to identify all divisions, including newly acquired companies with division status, under the same corporate standard.

ASTRONAUT TRIO RETURN TO DOWNEY, THANK EMPLOYEES

Apollo 10 astronauts Tom Stafford, John Young and Gene Cernan returned to Downey yesterday, thanked division employees for building such "an outstanding spacecraft" and took time out to view their mission vehicle, the Apollo 10 Command Module.

As the astronaut motorcade drove into view, a band eased into the melody, "Fly Me to the Moon," reminiscent of the lunar orbiting mission last month which served as a pathfinder for Apollo 11, the lunar landing mission now slated for July 16.

The trio were welcomed by Joseph P. McNamara, executive vice president, and J. L. Atwood, North American Rockwell president and chief executive officer.

Others who took part in the welcoming ceremonies were K. S. Kleinknecht, manager, CSM, NASA Manned Spacecraft Center, D. D. Myers, vice president and general manager, CSM Programs; R. E. Greer, vice president and Saturn S-II

(Continued on Page 3, Column 3)

WELCOME PARADE — Apollo 10 astronauts, left to right, John Young, Tom Stafford and Gene Cernan were greeted by thousands during parade through downtown Los Angeles Wednesday.

STAR MEETS MOONSHIP — Actress Connie Stevens visited the Space Division last week to see the Apollo 10 Command Module. Charles E. McKim, post-flight analysis test engineer, was happy to oblige. Miss Stevens said she follows missions closely.

A&SG Support Service Center Forming July 1

A new Aerospace and Systems Group organization, the Support Services Center, will be formed effective July 1, with the present Executive Offices General Services Dept. as its nucleus. It will provide selected supporting services to the Southern California divisions, NAADO, the Executive Offices and the General Offices.

Harry G. Tibbett will be general manager of the Center, reporting to D. L. Williams, senior vice president, Resource Management.

Functions to be added to the Center will include helicopter, air transport and Group Sabreliner operations, mailing service, a printing capability to meet division overload requirements, and interdivisional and supplier service trucking activities.

Final Flight Readiness Test . . .

(Continued from Page 1, Column 5)

flight at any time between now and July 16 if we are not ready in every way.

This readiness will involve thousands of personnel in hundreds of NASA and industry offices and literally millions of Saturn V parts. Most of all, however, it will involve Armstrong, Collins and Aldrin.

During the past few weeks, and continuing almost until launch day, the Apollo 11 crew with monastic discipline will be devoting most of their waking hours to "flying" the mission. In simulators at NASA's Manned Spacecraft Center, Houston, and at the Kennedy Space Center, Florida, and even in the actual spacecraft, the Apollo 11 crew will familiarize themselves with every knob, switch and lever, every detail of the flight plan for the 195-hour mission.

At KSC last week, the final Flight Readiness Review was conducted for NASA headquarters personnel and hypergolic fuels were test loaded.

Monday, ground support crew will begin loading the propellant into the first stage.

Tuesday, ordnance devices are to be installed aboard the spacecraft.

The "wet" Countdown Demonstration Test is scheduled to be completed July 2 and the "dry" CDDT, in which the astronauts participate, will be performed July 3. The astronauts already have completed the Crew Compartment Fit and Function Test, and have returned to their simulators. Last weekend, Armstrong flew the Lunar Landing Training Vehicle, which simulates the actual lunar landing.

Anderson Speech . . .

(Continued from Page 1, Column 2)

education so heavily, Anderson said.

In 1950, he noted, corporate enterprise gave $43 million to higher education, and by 1968 had increased the annual figure to $325 million. In addition, he said, businessmen have given countless thousands of hours of executive talent to educational causes, some of it administrative and much of it for raising funds.

"It would be a natural thing to respond to outrageous student demands by reducing our personal, corporate or foundation gifts to the colleges," Anderson said. "It would be quite a human reaction for a corporate executive on a college board of trustees just to walk away from a situation in which a band of militant radicals challenges his principles and his right to serve the college."

But, the college administrator needs help and encouragement as never before, Anderson declared. "If we expect him to cope with the disruptions on his campus and to counter the onrush of the militant young, he at least deserves the support of the business community. Support, I might add, that is tactful, patient and unobtrusive."

Three Men Do Double Duty as Craft-Checkers

When Boyd Beckner and Emmett Osborn are not checking out Apollo spacecraft at Downey, they're frequently checking out a North American Rockwell aircraft at Los Alamitos.

Beckner, an Apollo project engineer assigned to SC109, is a lieutenant colonel in the Marine Corps Reserve and is squadron commander of an OV-10A marine observation unit at the Naval Air Station at Los Alamitos. The OV-10A "Bronco" is a multi-mission turbo-prop aircraft built by NR's Columbus Division.

Osborn, an engineering designer with the Apollo Applications Program, is a chief warrent officer with the same squadron, and serves as assistant maintenance officer for the OV-10s.

R. D. Theige, a facilities engineer with Autonetics, is a master sergeant and administration officer of the squadron.

Commissioned last March, this is the first West Coast Bronco squadron.

SEMPER FIDELIS NR — Three employees spend their work week at North American Rockwell then frequently devote weekends to flying an NR airplane in the U.S. Marine Reserve squadron at Los Alamitos. Boyd Beckner, left, is squadron commander; Emmett Osborn, center, is assistant maintenance officer, and R. D. Theige is the administrative officer for the unit.

PRIDE
PERSONAL RESPONSIBILITY IN DAILY EFFORT

COMMUNITY RADIO WATCH

Jobes, Company Traffic Dispatcher, Commended for Aid in Accident

A division truck driver sped medical aid to two boys injured in a traffic accident last week through a three-way communications hook-up which involved the driver, a company traffic dispatcher and Downey police.

The action brought commendation from Downey police and an expression of appreciation for company participation in the city's Community Radio Watch. CRW is a crime prevention and emergency program through which drivers of radio-equipped vehicles serve as 'additional eyes and ears' for community police departments.

Elroy Jobes, who in August will have been with the company seven years, was driving west on Imperial Hwy. on a regular run from Seal Beach to Downey when the accident occurred. A 13-year-old bicyclist with a 14-year-old passenger collided with an automobile at Imperial and Woodruff.

The boys were not seriously injured but that was not apparent to Jobes, who simply saw them sprawled on the street. He immediately radioed Earl Jones, truck dispatcher, who telephoned Downey police.

Extra Duty

Jobes helped direct traffic for a few minutes until police arrived. As Jobes pulled onto company property, he heard the siren of aid speeding to the boys. Later, police reported that the boys were released from Downey Community Hospital after treatment for abrasions and bruises.

Downey Police Lt. Ferice Childers commented, "Elroy Jobes is to be commended for his alert action. Through his prompt response, he aided the police department and sped medical assistant to the scene of an injury. This is exactly what we are attempting to encourage through the Community Radio Watch. We appreciate Jobes' action and the company participation in this important program."

MEDICAL MISSION — Elroy Jobes, left, Space Division driver, happened onto a traffic accident, saw two injured boys, had the presence of mind to radio his dispatcher who set in motion the Community Radio Watch System. Dispatcher Earl Jones telephoned Madonna Fick, Downey Police Communications Officer, who sent ambulance. Boys were not seriously hurt.

VALIDATION DEMONSTRATION — Ray Berry, Program Management, explains to management the new Department of Defense bidding requirements regarding cost, schedule, methods.

BOND DRIVE STANDINGS

Space Division again is leading the major divisions of the Aerospace and Systems Group as the U.S. Savings Bonds Drive nears completion. By reporting 99 percent of all its employees now buying Bonds, Space Division, at press time, not only was a clear-cut leader but it also exceeded last year's campaign, when the division total stood at 98.6 percent participation.

Other reports as the campaign drew to an end were: Atomics International — 95 percent; Autonetics — 95 percent; Executive Offices — 91 percent; Los Angeles — 95 percent: McAlester — 100 percent; McGregor — 98 percent; Rocketdyne — 97 percent; Science Center — 87 percent; Tulsa — 96 percent and West Virginia — 95 percent. Included in the Space Division totals are Launch Operations with 99 percent and Mississippi with 100 percent. General Offices also attained 100 percent.

The total for the Aerospace and Systems Group at this time is 93 percent on payroll savings, with Columbus and NAVAN currently completing their campaigns. Final standings for the corporation will become available next week.

Division Tallies . . .

(Continued from Page 1, Column 3)

"I can not thank enough the men and women who worked with me on this campaign," he added. "All of us in the campaign wish to express our appreciation to the employees themselves who signed up. This was a team effort all the way."

RED CROSS BLOOD BANK TO BE HELD JULY 8-9

The next Red Cross Blood Bank will be conducted at the division July 8-9. Facilities will be set up in the Bldg. 1 Assembly Room, N13-E23.

TRIM CO$T with SHARP IDEAS

ROCKETDYNE, AI COMBINE AS POWER SYSTEMS DIVISIONS

North American Rockwell Corp. (NR) announced this week formation of the Power Systems Divisions, an organization comprising its Rocketdyne and Atomics International Divisions.

John R. Moore, president of the Aerospace and Systems Group, said the new organization will begin operation July 1. It will be headed by Group Vice President Jay D. Wethe.

Rocketdyne President S. K. Hoffman and Atomics International President J. J. Flaherty will report to Wethe.

Moore said consolidation will strengthen the company's power systems technical and marketing capabilities while giving more effective use of resources, support services and facilities.

Formation of the new divisions organization is the second recent consolidation of associated activities within the Aerospace and Systems Group. NR's military aircraft divisions at Los Angeles and Columbus, Ohio, are consolidated under the North American Aviation Divisions organization.

Minuteman II Missile Exceeded Reliability Goals — S. F. Eyestone

North American Rockwell Corporation said today that the guidance and flight control systems which it has supplied to the Air Force Minuteman II ballistic missile are a very successful culmination of one of the most complex electronic engineering projects ever undertaken.

Replying to criticism that the "guidance 'brains' for the Minuteman II missile" were substandard, S. F. Eyestone, president, Autonetics Division, stated that initial problems of field reliability have been solved and new systems have, for more than a year, been approximating the original Air Force specifications.

Even though the Minuteman II guidance system represents the first major operational use of microelectronics, test flight reliability of the Minuteman II guidance equipment has exceeded the record set by Minuteman I guidance systems despite a threefold increase in complexity. The Minuteman I guidance system exceeded their reliability goals by a substantial margin.

Eyestone further pointed out that Minuteman II flight control equipment, also supplied by Autonetics, is now approximately twice as reliable as originally specified.

The North American Rockwell executive said that the accuracy of the Minuteman II guidance and control system has exceeded its original specifications by very substantial amounts, providing the Air Force with additional capability which it has been estimated could be worth more than a billion dollars in equivalent missiles.

Division Adapts Its Operations to DOD Criteria

The Space Division is preparing to adapt its operations to the new Department of Defense contract criteria regarding cost, schedule, planning requirements.

A task force has been organized under the joint leadership of Hy Silver, of Advanced Programs, and M.A.G. Robinson, of Management Planning and Controls, to assure division awareness and capability to meet or exceed these requirements.

For the benefit of division management, the task force is conducting in-house demonstrations emphasizing differences between the new criteria and systems and reporting techniques used on existing Space Division programs.

Silver said that "future successful bidders must by demonstration insure that these specifications are met. The Space Division is preparing for compliance in anticipation of bidding on several major DoD contracts."

Special Courses Offered After Working Hours

Talk to Harold Hill a few minutes and you may feel as though you had been transported to the Grove of Academe of ancient Greece.

Hill is manager of Manpower Development and there are few things he likes to discuss more than the courses the division offers to employees. His conversation is laced with phrases like fluid mechanics, laser familiarization and statistical analysis.

Study Suggested

While Hill's discourses deal with subject matter different from that on which Plato held forth in Greece's ancient Grove, the message is similar: Spend your time to increase your knowledge. One can almost hear a distant clanging of schoolbells.

Not so distant at that—Manpower Development has a course on "FORTRAN for Business Data Processing" beginning at the division July 10. A course on "Laser Familiarization" begins July 12.

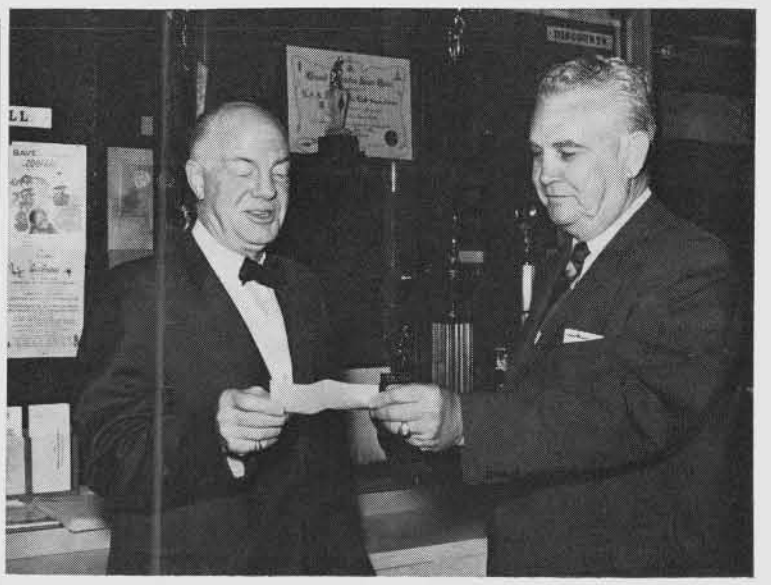
Seven other courses, all given after work hours, start in August and September, as follows:

Elementary Fluid Mechanics, Aug. 11; Elements of Heat Transfer, Aug. 12; Statistical Analysis with Computer Applications, Sept. 3; Programming Systems "B", Sept. 8; Programming for Aerospace Applications, Sept. 8; Programming Systems "A", Sept. 9, and, Space Exploration, Sept. 17.

Astronaut Trio . . .

(Continued from Page 1, Column 5)

program manager; William H. Gray, NASA Resident Apollo Spacecraft Program Office manager; W. K. Gengelbach, NASA S-II resident manager, C. W. Guy, executive vice president, Rocketdyne and Ralph H. Ruud, Sr. Vice President-Operations, Executive Offices, A&SG.



HIGH FINANCE — Troy Smith, right, manager of Internal Audit, presents Junior Achievement, Inc. check for $15 to Webb Hale, manager of the Downey Recreation Center. Smith estimates that the $15 is equal to three percent of the JA teams's total profit.

Division Receives Three Percent of Local Corporation's Net Profits

The Space Division recently received a check for three percent of a local corporation's net profits. In the world of finance, that's a very respectable allotment.

The local company is Junior Achievement, Inc., an organization of high school students who formally establish a corporation, sell products they make, prepare a balance sheet and declare dividends.

During the past school year, which is the length of life of the corporation, the students made and sold Christmas candles, metal nameplates and "spud spikes" used to bake potatoes.

Net profits were $500 and the Junior Achievement team, sponsored by the Space Division turned over to Troy Smith, manager of internal audit, a check for $15. Smith, who was recently elected president of the Los Angeles Chapter of the Institute of Internal Auditors, commented that "Considering the total assets of our team of Junior Achievers, this $15 was a very impressive amount." The money was presented to the division Recreation and Welfare Department.

Among division personnel who served as advisors to Junior Achievement Inc., during the past school year were Theodore John, William F. Cook III, Larry W. Konopaski, L. R. Cain and Lily Lee.

Bridge Teacher Places Second

Jean Dryer, who works at Autonetics but who conducts bridge classes Tuesday evenings at the Downey Recreation Center, has won second place in the Seventh Annual Contract Bridge Tournament. Dryer and his wife, Judy, played as a team in the national tournament.

The division bridge club meets Tuesday's throughout the year at 7:30 p.m. in the Rec Center and is open to beginners as well as experienced players. Additional information may be obtained from Pam Goldstein, Ext. 4483.

Division Develops . . .

(Continued from Page 1, Column 4)

for a year, or longer."

Hammond described the new testing technique at a Cryogenic Engineering Conference at the University of California at Los Angeles this week.

"Basically, we have an aluminum plate to which we attached a heater and instrumentation. We wrap this plate with superinsulation and place it in a cold vacuum chamber. We heat the plate then turn off the heater. By measuring the heat loss from the plate, we test the effectiveness of the superinsulation. There's more to it than that, but that's the idea."

The superinsulation itself used by Dr. Hammond in development tests is aluminized Mylar, .015 of a mil thick.

Hammond added that "This is believed to be the first application of a device of a transient nature to measure thermal performance of superinsulation."

In another paper presented at the same Conference, A. J. Richardson, also of RE&T, described an integrated hull design method and application to a cryogenic nuclear propulsion module.

PERSONNEL PERSONNEL — Robert L. Cunningham, manager, Employment Services, explains division policies to 70 members of Southern California Technical Personnel Committee during recent committee visit. Robert D. Wiese, manager, Professional Placement, NR Executive Offices, who is committee chairman, accompanied the visitors. Apollo tour followed the meeting.

CROWD PLEASER — Division President William B. Bergen and Ernest Manuel, vp and general manager, Ocean Systems Operations, are among the fascinated visitors watching a manipulator arm of the division's Beaver Mark IV mockup at the recent Offshore Technology Conference.

Swimmers Break Eighteen Records at Third Annual NR Swim Meet

Two Space Division swimmers won 10 events and set five records as the division captured first place in the third annual North American Rockwell Swim Meet last Saturday.

Held at Warren High School, Downey, the division-sponsored meet attracted some 300 swimmers from Autonetics, Rocketdyne, Atomics International, Executive Offices, and the Los Angeles and Space Divisions. Eighteen meet records were broken.

The Space Division, with 438 points, was closely followed by Autonetics with 415 points. Victory brought Space Division possession for a year of the newly established perpetual trophy.

Cathy Cathcart, 8, daughter of Jeanne Cathcart, Research, Engineering and Test, won five events and sped to records in the backstroke, free style and 100-yard individual medley.

Phyllis Whitmarsh, 9, daughter of Charles L. Whitmarsh, formerly of Apollo CSM, won five events also and touched out for records in backstroke and the 100-yard individual medley.

Ken Kellough, Executive Offices manager for Recreation and Welfare, opened the meet by welcoming the swimmers and an audience of 200. Roger Lawrence, Recreation & Welfare, Seal Beach, coordinated the meet.

NORTH AMERICAN ROCKWELL NEWS

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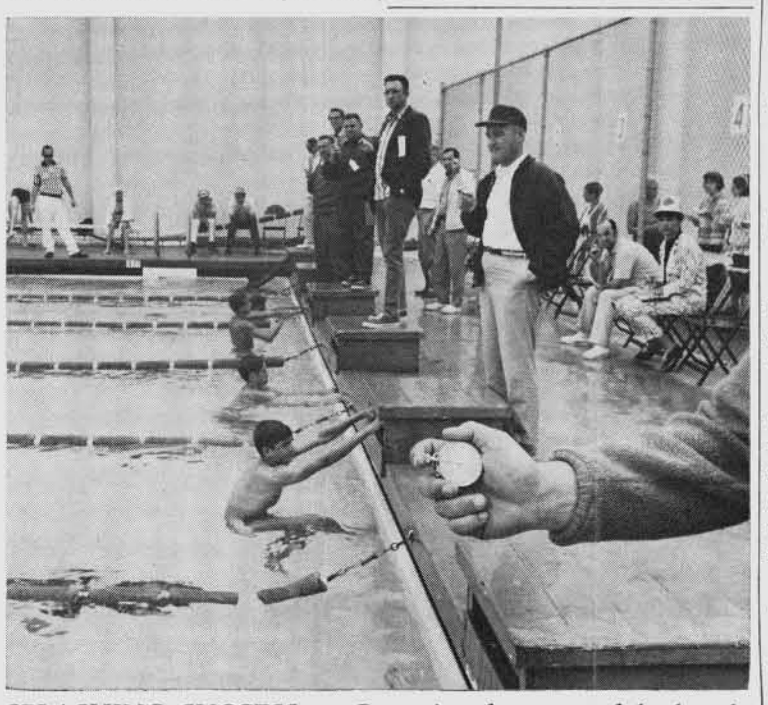

SPLASHING SUCCESS — Preparing for start of backstroke event are five of 300 swimmers who took part in the division-sponsored Third Annual North American Rockwell Swim Meet, Downey. Parents received workout also, as timers, scorekeepers,

YOU ARE THE "I" IN PRIDE

TOAST TO TOASTMASTERS — Downey Space Toastmasters for the first time in its history bested 24 other clubs and won the trophy for Founder's District Division D. Members of the winning team included, left to right, Bob Peercy, Will Tolles, John Zandovskis, Chuck Yee, Downey president; Burt Rawdings, and Herb Seliger. The Club meets Wednesday's. Further information may be obtained by contacting Seliger, Ext. 4467-8.

Astronaut Trio Used Railroad Coupling Idea

The Apollo 10 astronauts borrowed an old railroad technique when they docked their command and lunar modules.

Just as a freight car is rolled down a siding in a railroad yard to bump into another car and make a spring latch coupling, so did the command and lunar modules of Apollo bump and connect with a spring latch device.

But there were some major differences . . .

The command and service modules (Charlie Brown) and lunar module (Snoopy) were not on a track. It took careful and precise space maneuvering by the astronaut crewmen to guide the two craft.

SPACE FEATURE — Milt Grey, left, president of Hobby Industry Association of America, with Carl Maxwell, association secretary, USAF Maj. Kenneth Becker and motion picture producer Frank Capra, Jr., discuss use of commercial models in current film productions. Shown is model of Space Division-built Apollo which has been used in numerous motion pictures.

Classified Ads

FOR SALE

AUTOS

'62 Buick Skylark, 694-1572.
'63 Cadillac Fltwd. $1275, 714/538-5038.
'61 Dodge Lancer, $295, 865-6853.
'56 Ford Truck, $300, 714/525-0190.
'56 T-Bird Classic, $1,150, 431-4127.
'62 Ford Wagon, $400, 714/535-8833.
'66 Olds Delta 88, OW 1-7431.
'63 Porsche, 714/523-3839.
'63 Rambler, $700, 696-3539.
'66 Triumph, TR-4, $1470, 714/630-0352.
'68 Triumph, $2100, 430-6107.
'60 VW, $425, 864-0313.
'65 VW, 839-0996.
'65 VW Wagon, $900, 430-5059.
Dune Buggy, 714/636-3536.

MOTORCYCLES

Honda 305, Good, 862-6929.
'68 Honda 90CL, 714/525-7726.
'68 Honda & rack, 370-8153.

HOMES

4 bdrm, Placentia, 714/528-1536.

APPLIANCES

Range, Gaffers, Coppertone, $75. 865-2666.

FURNISHINGS

Twin Walnut Headboards, $5 ea. 714/842-3866.
Sofa, beige, $50, 634-2292.

BOATS

14' Ski Boat, Motor-Trailer, TO 9-6629.
15' Boat, Make Offer, 866-1890.

REAL ESTATE

⅓ Acre, Lake Arrowhead, 213/545-2241.

FOR SALE

PETS

2 yr. Quarter Filly, $350, 5 yr. Sorrel Gelding, $520, 714/892-0643.

MISCELLANEOUS

1600 VW Engine, 691-3648.
Mark Ten Ignition System, 865-0016.
Hammond Organ, Walnut, 714/892-2059.
Wig, Brown; Fall, Black, 861-8677.
Xmas Tree, $5, 527-8691.
12 ft. Sliding Glass Door, 714/522-6273.
Windows, Aluminum, Horizontal, Sliding, 714/630-2132.
6' Sliding Door, $15, 714/879-7044.
A. B. Dick Copier, 714/535-0511.
Reg. Pool Tble, $115, 863-1005.
Bucket Seats, 64 Chev., TO 6-8133.
Carpet, Out Door, In Door, 866-7043.
9' Khanamoku Surfboard, 962-4139.
Camping Chuck Box, 714/879-7044.
Piano, Baby Grand, 373/3591.

WANTED TO BUY

Ludwig Snare Drum, GE 3-4247.
Kodak Carousel Slide Proj., 378-4806.
"Doc Savage" Magazines, 714/826-1396.

RIDE WANTED/OFFERED

Wanted, Lomita/Torrance to Downey, 326-5056.
Offered, Magnolia & Talbert to S.B., 962-4139.

FOR RENT

Cabin-Running Springs, 714/867-2826.
Bach. Beach Apt., 714/642-8549.
3 bdrm. Downey home, 923-7620.

Technical Bookshelf

RADIATION EFFECTS IN SEMICONDUCTOR DEVICES, by Frank Larin, John Wiley & Sons, Inc., $11.95 — 1968.

The study begins with a through discussion of semiconductors and their operation, and continues with an explanation of the methods for deriving semiconductor electrical characteristics on the basis of their physical properties. Radiation is then introduced through its influence on the physical-electrical relationships. Planar transistors, which have largely superseded the alloy types, receive major emphasis. A wealth of calculational examples offers the reader the opportunity to confirm his understanding of the principles involved.

ELECTRONIC CIRCUIT PACKAGING, by Walter J. Prise, Charles E. Merrill Books, Inc., $6.95 — 1967.

This book provides the key for realization of engineering ideas into finished electronic hardware. It describes a methodical, systematic approach to the integration of all elements of electronic circuitry into optimum, reliable, and economically feasible electronic equipment. The author assimilates and organizes years of research-and-development findings and practical applications to provide a unique, definitive book on electronic circuit packaging. Individual chapters consider, in turn, composite elements of circuit packaging, materials, joining techniques, interconnecting methods, design and fabrication techniques, and trends toward miniaturization and microelectronics. Careful documentation supports each concept and process.