

# News



## LEWIS RESEARCH center

21000 BROOKPARK ROAD CLEVELAND, OHIO 44135

**PUBLIC INFORMATION OFFICE**

PHONE - (AREA CODE 216) 433-4000 EXT. 415

FOR IMMEDIATE RELEASE

Release 68-46

Marilyn Edwards

CLEVELAND, Ohio, July 16 -- More than \$13 million in major contracts were awarded during June by the National Aeronautics and Space Administration's Lewis Research Center in support of its space research and development programs.

Contracts of \$25,000 or more went to companies in 18 states. They are listed alphabetically by state and city.

ALABAMA: \$27,696

Huntsville Hayes International Corp., \$27,696, control packages.

CALIFORNIA: \$5,718,752

Azusa Aerojet-General Corp., \$95,469, cycle testing of boron filament-wound tanks.

Berkeley Cyclotron Corp., \$32,500, cyclotron dees.

Canoga Park North American Rockwell Corp., \$35,963, design criteria monograph for liquid propellant rocket engine combustion instability dampers. North American Rockwell Corp., \$35,861, design criteria monograph on liquid propellant gas generators. North American Rockwell Corp.,

- more -

CALIF. (Cont'd)

Canoga Park	\$36,850, design criteria monograph on liquid propellant rocket engine injectors. North American Rockwell Corp. , \$406,750, rotating and positive displacement pumps for low thrust rocket engines. North American Rockwell Corp. , \$373,414, lithium-fluorine-hydrogen propellant investigation. North American Rockwell Corp. , \$198,692, investigation of gas augmented injectors. North American Rockwell Corp. , \$36,325, design criteria monograph for liquid propellant rocket engine nozzles. North American Rockwell Corp. , \$38,886, design criteria monograph turbopump systems for rocket engines.
Concord	Eldorado Electronics, \$29,650, counter-timer and digital counter.
Los Angeles	Garrett Corp. , \$75,450, gravitational effects and stability in potassium multitube condensers.
Menlo Park	Standford Research Institute, \$51,360, improved oxidation resistance of nickel and cobalt super-alloys program.
Monrovia	Marshall Industries, \$49,721, an experimental program of aircraft fuel tank fire hazards related to lightning.
Northridge	Teledyne Systems Co. , \$1,358,728, development of digital computer unit and support equipment for use on Centaur guidance system.
Newport Beach	McDonnell Douglas Corp. , \$98,525, development of a rechargeable zinc-oxygen power system.
Palo Alto	Lockheed Missiles & Space Co. , \$52,322, investigation of porous oxygen electrode structures.

CALIF. (Cont'd)

Pleasanton	General Electric Co. , \$138,823, investigation of uranium dioxide loss rates in central vent emitters.
Redondo Beach	TRW, Inc. , \$362,200, investigation of thrusters for cryogenic reaction control systems.
Redwood City	Ampex Corp. , \$91,163, research and development of foil journal bearings for Brayton cycle turbomachinery.
Sacramento	Aerojet-General Corp. , \$621,925, large solid rocket motor propellant improvement program. Aerojet-General Corp. , \$170,500, investigation of twin spool turbopump performance. Aerojet-General Corp. , \$413,547, investigation of discrepancies on nozzle performance reliability. Aerojet-General Corp. , \$35,171, design criteria monograph for fluid-cooled combustion chambers. Aerojet-General Corp. , \$35,116, design criteria monograph liquid propellant self-cooled combustion chambers.
San Carlos	Litton Industries, \$29,473, klystron tubes.
San Diego	Gulf General Atomic Inc. , \$216,000, thermionic materials for space power applications. Gulf General Atomic Inc. , \$60,718, program to re-evaluate neutron spectra in liquid hydrogen.
Santa Ana	Royal Industries, \$39,053, pre-cryogenic shut-off valves.
Santa Monica	McDonnell Douglas Corp. , \$244,469, development of a heat sterilizable 40-ampere hour silver zinc cell. McDonnell Douglas Corp. , \$71,826, development of improved zinc electrodes for secondary batteries.

CALIF. (Cont'd)

Sunnyvale Fairchild Instrumentation, \$31,302, digital voltmeters and hardware. Lockheed Aircraft Corp., \$151,000 determine the thermal performance of multi-layer insulation systems.

COLORADO: \$182,300

Denver Martin Marietta Corp., \$182,300, composite overwrapped metallic tanks.

CONNECTICUT: \$182,605

E. Hartford United Aircraft Corp., \$148,800, kinetic flow performance in nozzles.

W. Hartford Colt Industries, \$33,805, tape controlled drill.

FLORIDA: \$1,919,944

Sarasota Weston Instruments, Inc., \$46,308, data system integration.

W. Palm Beach United Aircraft Corp., \$885,868, basic contract for single stage experimental evaluation of tandem-airfoil rotor and stator blading for compressors. United Aircraft Corp., \$31,048, development of a twin ram induction combustor. United Aircraft Corp., \$755,000, management and engineering services for one year period in support of Pratt & Whitney Aircraft RL10A-3-3 rocket engine. United Aircraft Corp., \$201,720, a space storable engine characterization.

ILLINOIS: \$54,650

Chicago Sciaky Bros., Inc., \$54,650, modification of electron beam gun welder.

INDIANA: \$254,995

Indianapolis General Motors Corp. , \$254,995, experimental investigation of highly loaded turbine tandem rotor blading.

MARYLAND: \$75,000

Laurel Hydronautics, Inc. , \$75,000, experimental research on high frequency fatigue at elevated temperatures.

MASSACHUSETTS: \$124,081

Bedford Diffraction Ltd. , Inc. \$44,146, clear fused silica coated lenses.

Pittsfield General Electric Co. , \$50,000, research program to define the hazards of lightning on aircraft electrical systems.

Waltham Fisher Scientific Co. , \$29,935, quantimet (QTM) image analyzing computer.

MICHIGAN: \$85,523

Detroit Primeway Tool & Eng. Co. , \$33,795, solar arc lamp. Federal Mogul Corp. , \$51,728, powders and extrusions from superalloys.

MINNESOTA: \$32,036

Minneapolis MTS Systems Corp. , \$32,036, servo control units.

NEBRASKA: \$96,901

Ogallala TRW, Inc. , \$96,901, capacitor improvement program.

NEW JERSEY: \$305,005

Metuchen Gulton Industries, Inc., \$97,005, non-magnetic stable cadmium electrode for silver cadmium cells.

Paramus ARDE, Inc., \$208,000, metallic positive expulsion diaphragm.

NEW YORK: \$430,669

Buffalo Bell Aerospace Corp., \$39,291, design criteria monograph on liquid propellant rocket engine thrust chambers.

Delmar North Vernon Contractors, Inc., \$106,800, operation, maintenance and supervision of steam generating plant at Lewis.

Farmingdale Fairchild Hiller Corp., \$89,740, development of high-temperature polyimide rod seals.

Ithaca Therm Inc., \$58,000, compressor wheel and tandem blade assembly.

Schenectady General Electric Co., \$57,390, SNAP-8 self-actuated seal development.

Syracuse General Electric Co., \$79,448, silicon controlled rectifiers with improved radiation resistance.

OHIO: \$2,225,013

Cincinnati General Electric Co., \$643,000, a low-tip speed fan noise demonstration program. General Electric Co., \$1,079,000, evaluation of range and distortion tolerance for high mach number transonic stages. General Electric Co., \$85,000, improved aluminide coatings for nickel base alloys.

OHIO (Cont'd)

Cleveland Wrightco, Inc. , \$72,173, installation of a liquid fuel system for the Propulsion Systems Lab. Wm. Gould and Assoc. , \$61,000, architect-engineer services for master plan program phase II Plum Brook Station. Suburban Power Piping Corp. , \$58,000, installation of helium recovery piping between the Electric Propulsion Lab and the Electric Propulsion Research Building.

Columbus Battelle Memorial Institute, \$27,800, sinusoidal pressure generator development and utilization. Battelle Memorial Institute, \$99,100, investigation of methods of producing stainless steel-titanium composites. Battelle Memorial Institute, \$99,940, structural stability and mechanical behavior of thermo-mechanically processed dispersion strengthened nickel alloys.

PENNSYLVANIA: \$766,824

Bethlehem Bethlehem Steel Corp. , \$28,390, pole bases for the 60-inch cyclotron modification.

Bridgeville Cyclops Corp. , \$60,578, wrought nickel base super alloys.

King of Prussia SKF Industries, Inc. , \$73,375, high temperature lubricant screening tests.

Lancaster RCA, \$44,163, 66 klystron tubes.

Philadelphia General Electric Co. , \$399,618, ground signal processing systems.

Pittsburgh Westinghouse Electric Corp. , \$135,000, weldability study of T-111 and ASTAR 811-C.

PENNSYLVANIA (Cont'd)

Willowgrove

Tinius-Olsen, \$25,700, testing machine.

RHODE ISLAND:

\$97,648

Providence

Sealol, Inc., \$97,648, experimental investigation of bellows for cryogenic seal application.

WASHINGTON:

\$545,130

Seattle

The Boeing Co., \$197,860, metal tank fracture and design criteria. The Boeing Co., \$197,770, stress corrosion of metal tanks. The Boeing Co., \$149,500, fundamental study of transpiration cooling.

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Release 68-62

Linda Peterson

CLEVELAND, Ohio, Oct. 1 -- Cost Reduction Achievement Certificates recognizing innovations which significantly reduced costs during fiscal year 1968 were presented recently to 47 employees of NASA's Lewis Research Center by Dr. Abe Silverstein, Director.

At the ceremony employees were commended for their efforts to improve the efficiency and economy of NASA programs. Their "better ideas" meant a savings to the Center of nearly \$6.5 million, according to William Beckett, Cost Reduction Officer.

Winners of the Cost Reduction Certificates and their suggestions are as follows:

- more -

AVON LAKE

Donald E. Schley                      Disposition of Government Equipment

BEREA

David J. Poferl                      Simplification of Diaphragm Test-ATS Program

Wilbur J. Taylor                      Automation of Refrigeration System, Air Machines,  
and Water Pumps

BROOKLYN

Earl T. Bloam                      Multiple Coax Cable Splice

Danny Rusyniak                      Improved Actuator Mounting for Pressure and  
Temperature Rake

BRUNSWICK

Francis R. Kebberly                      Cyclotron Main Magnet Current Regulator

Henry C. Donner                      Improved Indicator Lights for Use in the Solar  
Simulator Safety System

CHIPPEWA LAKE

L. Robert Howe                      Recovery of Supplies and Stock

CLEVELAND

Everett Bailey                      Revised Design and In-House Fabrication of  
Water Flow Venturi Meters for Flow Tests

Frank J. Constantino                      Saving Helium Gas Transportation Charges

Edward L. Clark                      Automation of Refrigeration System, Air Machines,  
and Water Pumps

Anthony Gyapjas                      Automation of Refrigeration System, Air Machines,  
and Water Pumps







WESTLAKE

Robert C. Finke

Automatic Data Taking and Control System for  
High Voltage Breakdown Studies

Karl F. Reader

Reassessment of Requirement and Deletion of  
Calibration Tests on Lunar Orbiter

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