Harry A. James and Ralph L. Maki Washington, NACA, July 5, 1957 45 p 11 refs
(NACA RM A57D11) OTS: $4.60 ph, $1.55 mf (Declassified)

A wind-tunnel investigation of a high-wing airplane having an aspect ratio 6.75 wing with approximately 36° of sweepback was conducted to determine the lift effectiveness obtainable with trailing-edge blowing flaps in combination with leading-edge slats. Close to theoretical flap effectiveness was obtained with blowing flaps deflected 45°, 55°, and 65° at low angles of attack. Flap effectiveness and stability were maintained to high angles of attack by control of leading-edge flow separation with slats. Maximum lift was a function of leading-edge configuration, trailing-edge flap deflection angle, and amount of boundary-layer control applied. With a 55° trailing-edge flap, and with a full-span simulated 24° slat, maximum lift coefficient was increased from 2.20 boundary-layer control off to 2.54 with a momentum coefficient of 0.012 and further increased to 2.69 with a momentum coefficient of 0.032. An evaluation of the results obtained in terms of estimated takeoff and landing performance indicated reductions in distance over a 50-foot obstacle amounting to 35 percent on landing and 13 to 18 percent on takeoff. Author

N63-13180 National Aeronautics and Space Administration. Ames Research Center, Moffett Field, Calif.

LARGE-SCALE WIND-TUNNEL TESTS OF A CIRCULAR PLANFORM AIRCRAFT WITH A PERIPHERAL JET FOR LIFT, THRUST, AND CONTROL

Richard K. Greif and William H. Tolhurst, Jr. Washington, NASA, Feb. 1963 97 p 7 refs
(NASA TN D-1432) OTS: $2.25

Full-scale tests have been conducted in the Ames 40- by 80-foot wind tunnel to determine the performance, stability, and control characteristics of a research aircraft having a circular planform and employing a peripheral jet for lift, thrust, and control. The aircraft was 18 feet in diameter and 18 percent thick. Propulsion was provided by a 5-foot-diameter rotor which took in air through the wing upper surface and drove it through internal ducting to a peripheral nozzle designed to provide thrust vector control. Six-component aerodynamic data and propulsion-system flow data were obtained at various angles of attack over a range of jet-momentum coefficients from 0 to 3.4. Flight characteristics in the cruise configuration were determined at altitudes ranging from 12 feet 7 inches to 2 feet 8 inches. Transition-flight characteristics were studied only at the lowest ground height. Some effects of forward speed on rotor performance were also investigated. Author

N63-13251 National Aeronautics and Space Administration, Washington, D.C.

DEVELOPMENT OF SOUNDING ROCKETS IN JAPAN

Hideo Itokawa, et al Mar. 1963 159 p refs Transl. of articles from Seisan-Kenkyu (Tokyo), v. 12, no. 12, 1960
(NASA TT F-87) OTS: $3.00

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V. THE CONSTRUCTION OF THE KAPPA ROCKETS, WITH SPECIAL CONSIDERATION OF THE K-8 K. Mori p 110-121 (See N63-13256 07-34)

VI. AERODYNAMICS OF THE KAPPA ROCKET A. Tamaki p 122-132 17 refs (See N63-13257 07-02)

VII. LOW NOISE AMPLIFIER FOR RADAR S. Saito and J. Hamazaki p 133-141 2 refs (See N63-13258 07-09)

VIII. OPTICAL TRACKING OF ROCKETS T. Maruyasu and T. Uemura p 142-148 (See N63-13259 07-08)

IX. SOUNDING ROCKET MANAGEMENT AND ADMINISTRATION J. Shimomura p 149-156 (See N63-13260 07-01)

N63-13252 Tokyo U. Inst. of Industrial Science (Japan)

FROM THE PENCIL ROCKET TO THE KAPPA-8

Hideo Itokawa *In* NASA, Washington, D.C. Development of Sounding Rockets in Japan Mar. 1963 p 28-54 (See N63-13251 07-04) OTS: $3.00

The development of sounding rockets in Japan is reviewed beginning with the Pencil rocket in 1955 and progressing through the Kappa-8 rocket in 1959. These are solid propellant rockets ranging in size from 23 cm to 10,032 cm. The problems occurring during this development period are discussed. R.C.M.

N63-13253 Tokyo U. Inst. of Industrial Science (Japan)

THE ROCKOON

Osamu Hirao and Tomo Okamoto *In* NASA, Washington, D.C. Development of Sounding Rockets in Japan Mar. 1963 p 55-74 (See N63-13251 07-04) OTS: $3.00

The program to launch sounding rockets from balloons (rockoon) is outlined, and the problems encountered are discussed. While no actual flights were made, dummy launching tests have shown that under favorable climatic conditions a rockoon can be launched safely and reliably. R.C.M.

N63-13299 Bell Helicopter Co., Fort Worth, Tex.

DEMONSTRATION PLANNING AND PROGRESS REPORT—HU-1E HELICOPTER

T. L. Hoffman Nov. 15, 1962 33 p 19 refs
(Contract AF 33(657)-9777)
(Rept. 204-099-036)

Flight-test requirements for the HU-1E Helicopter are discussed. The report outlines specific areas where test requirements have been and have not been met. B.J.C.

05 ASTRONOMY AND ASTROPHYSICS

Includes: celestial mechanics; and radioastronomy.

For related information see: 12 Geophysics; and 29 Space Sciences.

N63-12879 High Altitude Observatory, Boulder, Colo.

SOLAR PHYSICS

Harold Zirin N.Y., Inst. of the Aerospace Sciences [1963] 6 p Presented at the IAS 31st Annual Meeting, N.Y., Jan. 21-23, 1963
(NASA Contract NsG-92-60)
(IAS Paper-63-1) IAS: $0.50 members, $1.00 nonmembers

A review of solar physics includes the interior structure of the sun, the photosphere, the chromosphere, the solar corona, and solar flares. I.v.L

N63-13022 Academy of Sciences (USSR). Inst. of Radio Tech and Electronics, Moscow

RADIO LOCATION OF THE PLANET VENUS IN APRIL 1961 IN THE SOVIET UNION Scientific Report