PREFACE

This index of NACA Technical Publications covers the NACA research reports issued in the period of July 1956 through June 1957. It is the sixth supplement to the basic 1915-1949 Index.

The research reports issued prior to July 1956 which have been declassified since that date have also been included. A list of these reports may be found on pages 243-244. Cards for this list may be discarded as entries for them are included in this Index. Current announcement of newly declassified materials is regularly made in the NACA Research Abstracts and Reclassification Notice.

The arrangement of this Index follows: (1) Explanatory chart of NACA publications series designations, (2) outline of subject classification system, (3) chronological list of NACA reports under each subject classification, (4) list of reports declassified from July 1956 through June 1957, (5) alphabetical index to subject categories, and (6) author index.

Entries included herein duplicate in part the information of the index cards furnished with the individual research reports. Recipients maintaining card files may wish to discard those index cards on hand for unclassified research reports issued during the July 1956-June 1957 period. Such cards were printed on yellow stock for easy identification in the discard process. Please note that some classified reports issued during the July-December 1956 period are included in the yellow stock area. Therefore care must be taken to avoid destroying such cards.

Newly available research reports are currently announced in the NACA Research Abstracts and Reclassification Notice and are normally available for a period of five years after announcement. Most of the older research reports (those issued prior to July 1952) are thus available on a "loan only" basis within the United States. Requests for NACA research reports should be forwarded to the address given below.

Division of Research Information
National Advisory Committee for Aeronautics
1512 H Street, N. W.
Washington 25, D. C.

December 1, 1957.
## EXPLANATORY CHART OF NACA PUBLICATIONS SERIES DESIGNATIONS

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<th>PUBLICATIONS SERIES</th>
<th>SYMBOL</th>
<th>CURRENTLY ISSUED</th>
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<th>NUMBER BASED ON DATE OF ISSUE-YEAR* MONTH** DAY***</th>
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** Symbol and date only used prior to date mentioned. **A - Ames 5 - 1945 50 - 1950 #A - January G - July $$$ 01
E - Lewis 6 - 1946 51 - 1951 B - February H - August 02
L - Langley 7 - 1947 52 - 1952 C - March I - September 03 etc. to 31 followed by
8 - 1948 D - April J - October a - 2nd document issued that date
9 - 1949 E - May K - November b - 3rd document issued that date
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*No reports under this category for this period.

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AERODYNAMICS
(1.1) AERODYNAMICS

**Fundamental Aerodynamics**


### (1.1.1) INCOMPRESSIBLE FLOW


**IMPEINEMENT OF DROPLETS IN 60° ELBOWS WITH POTENTIAL FLOW.** Paul T. Hacker, Paul G. Saper, and Charles F. Kadaw. October 1956. 54p. diagrs., tabs. (NACA TN 3770)

**RESULTS OF TWO FREE-FALL EXPERIMENTS ON FLUTTER OF THIN UNSWEPt WINGS IN THE TRANSONIC SPEED RANGE.** William T. Lauten, Jr., and Herbert C. Nelson. January 1957. 20p. diagrs., photo., tabs. (NACA TN 3902. Supersedes RM L52C08)

### (1.1.2) COMPRESSIBLE FLOW


**SOME POSSIBILITIES OF USING GAS MIXTURES OTHER THAN AIR IN AERODYNAMIC RESEARCH.** Dean R. Chapman. 1956. ii, 22p. diagrs., tabs. (NACA Rept. 1259. Supersedes TN 3226)


**AN ANALYSIS OF BUZZING IN SUPersonic Ram Jets by a Modified One-Dimensional Non-Stationary Wave Theory.** Robert L. Trmpi. July 1956. 72p. diagrs., photos. (NACA TN 3695. Supersedes RM L52A18)


AN INTEGRAL SOLUTION TO THE FLAT-PLATE LAMINAR BOUNDARY-LAYER FLOW EXISTING INSIDE AND AFTER EXPANSION WAVES AND AFTER SHOCK WAVES MOVING INTO QUIESCENT FLUID WITH PARTICULAR APPLICATION TO THE COMPLETE SHOCK-TUBE FLOW. Robert L. Trimpi and Nathaniel B. Cohen. June 1957. 11, 18p. diags., tabs. (NACA TN 3944)

COMPRESSIBLE LAMINAR BOUNDARY LAYER OVER A YAWED INFINITE CYLINDER WITH HEAT TRANSFER AND ARBITRARY PRANDTL NUMBER. Eli Reshotko and Ivan E. Beckwith. June 1957. (i), 86p. diags., tabs. (NACA TN 3986)

(1.1.2.1) SUBSONIC FLOW

AN INVESTIGATION AT TRANSONIC SPEEDS OF THE AERODYNAMIC CHARACTERISTICS OF AN AIR INLET INSTALLED IN THE ROOT OF A 45° SWEPT-BACK WING. Robert R. Howell and Arvid L. Keith, Jr. October 1952. 47p. diags., photos., tabs. (NACA RM L52H08a)

THE INFLUENCE OF VORTEX GENERATORS ON THE PERFORMANCE OF A SHORT 1.9:1 STRAIGHT-WALL ANNULAR DIFFUSER WITH A WHIRLING INLET FLOW. Charles C. Wood and James T. Higginbotham. February 1953. 36p. diags., photo., tab. (NACA RM L52L01a)


ANALYSIS AND CALCULATION BY INTEGRAL METHODS OF LAMINAR COMPRESSIBLE BOUNDARY LAYER WITH HEAT TRANSFER AND WITH AND WITHOUT PRESSURE GRADIENT. Morris Morduchow, Polytechnic Institute of Brooklyn. 1955. 11, 19p. diagrs., tabs. (NACA Rept. 1245)


ON SUBSONIC FLOW PAST A PARABOLOID OF REVOLUTION. Carl Kaplan. February 1957. 21p. diagrs., tab. (NACA TN 3970)


CHARTS FOR THE ANALYSIS OF FLOW IN A WHIRLING DUCT. Robert A. Makofsli. May 1957. 21p. diagrs. (NACA TN 3950)

FLIGHT INVESTIGATION OF THE DRAG OF ROUND-NOSED BODIES OF REVOLUTION AT MACH NUMBERS FROM 0.6 TO 1.5 USING ROCKET-PROPELLED TEST VEHICLES. Roger G. Hart. July 1951. 9p. diagrs., photos., tab. (NACA RM L51E25)

AN INVESTIGATION AT TRANSONIC SPEEDS OF THE AERODYNAMIC CHARACTERISTICS OF AN AIR INLET INSTALLED IN THE ROOT OF A 45° SWEPT-BACK WING. Robert R. Howell and Arvid L. Keith, Jr. October 1952. 47p. diagrs., photos., tabs. (NACA RM L52H08a)

(1) AERODYNAMICS


MEASUREMENTS OF FlucTuating PressureS ON the WINGS AND Body of a SweptBack Wing-Body Combination IN the Langley 18-Foot Transonic Tunnel. Louis W. Habel and Donald R. Bowman. September 1953. 24p. diagrs., photos. (NACA RM L53G06a)


RESULTS OF Two FREE-FALL ExPERiments ON Flutter of Thin Unswept Wings in the TRANSONIC Speed Range. William T. Lauten, Jr., and Herbert C. Nelson. January 1957. 20p. diagrs., photo, tabs. (NACA TN 3902. Supersedes RM L5IC08)

THIN AIRFOIL THEORY BASED ON APPROXIMATE Solution of the TRANSONIC Flow EQUATION. John R. Spreiter and Alberta Y. Aikane. May 1957. 82p. (NACA TN 3970)

(1, 1.2.3) SUPERSONIC FLOW


PRELIMINARY INVESTIGATION OF USE OF CONICAL FLOW SEPARATION FOR EFFICIENT SUPERSONIC DIFFUSION. W. E. Moeckel and P. J. Evans, Jr. December 1951. 15p. photos., diagrs. (NACA RM E51J06)

FLOW SEPARATION FROM RODS AHEAD OF BLUNT NOSES AT MACH NUMBER 2.72. Jim J. Jones. July 1952. 18p. diagrs., photos. (NACA RM L52E05a)

AN INVESTIGATION AT TRANSonic SPEEDS OF THE AERODYNAMIC CHARACTERISTICS OF AN AIR INLET INSTALLED IN THE ROOT OF A 45° SWEPt-BACK WING. Robert R. Howell and Arvid L. Keith, Jr. October 1952. 47p. diagrs., photos, tabs. (NACA RM L52H08a)


INVESTIGATION OF SPOILERS AT A MACH NUMBER OF 1.93 TO DETERMINE THE EFFECTS OF HEIGHT AND CHORDWISE LOCATION ON THE SECTiON AERODYNAMIC CHARACTERISTICS OF A TWO-DIMENSIONAL WING. James N. Mueller. March 1953. 52p. diagrs., photos. (NACA RM L52L31)


MEASUREMENTS AND PREDICTIONS OF FLOW CONDITIONS ON A TWO-DIMENSIONAL BASE SEPARATING A MACH NUMBER 3.36 JET AND A MACH NUMBER 1.55 OUTER STREAM. Donald E. Coletti. May 1954. 56p. diagrs., photos. (NACA RM L54C08)


(1) AERODYNAMICS


THE PROPER COMBINATION OF LIFT LOADINGS FOR LEAST DRAG ON A SUPERSONIC WING. Frederick C. Gran. 1956. ii, 9p. diagrs., tab. (NACA Rept. 1275. Supersedes TN 3533)


CONVERSION OF INVISCID NORMAL-FORCE COEFFICIENTS IN HELIUM TO EQUIVALENT COEFFICIENTS IN AIR FOR SIMPLE SHAPES AT HYPERSONIC SPEEDS. James N. Mueller. October 1956. 31p. diagrs. (NACA TN 3807)


METHOD FOR CALCULATING EFFECTS OF DISSOCIATION ON FLOW VARIABLES IN THE RELAXATION ZONE BEHIND NORMAL SHOCK WAVES. John S. Evans. December 1956. 52p. diagrs., tabs. (NACA TN 3860)


OBIQUE-SHOCK RELATIONS AT HYPERSONIC SPEEDS FOR AIR IN CHEMICAL EQUILIBRIUM. W. E. Moeckel. January 1957. 18p. diagr., tab. (NACA TN 3895)


TABLES OF CHARACTERISTIC FUNCTIONS FOR SOLVING BOUNDARY-VALUE PROBLEMS OF THE WAVE EQUATION WITH APPLICATION TO SUPersonic INTERFERENCE. Jack N. Nielsen. February 1957. 245p. diagr., tabs. (NACA TN 3873)


(1.1.3) VISCOS FLOW


PRELIMINARY INVESTIGATION OF USE OF CONICAL FLOW SEPARATION FOR EFFICIENT SUPERSONIC DIFFUSION. W. E. Moeckel and P. J. Evans, Jr. December 1951. 15p. photos., diagr. (NACA RM ES1J08)

OBSERVATIONS OF UNSTEADY FLOW PHENOMENA FOR AN INCLINED BODY FITTED WITH STABILIZING FINS. Merrill H. Mead. January 1952. 23p. diagr., photos. (NACA RM A51K05)


ON POSSIBLE SIMILARITY SOLUTIONS FOR THREE-DIMENSIONAL INCOMPRESSIBLE LAMINAR BOUNDARY LAYERS. I - SIMILARITY WITH RESPECT TO STATIONARY RECTANGULAR COORDINATES. Arthur G. Hansen and Howard Z. Herzig. October 1956. 30p. tab. (NACA TN 3768)


ATTENUATION IN A SHOCK TUBE DUE TO UNSTEADY-BOUNDARY-LAYER ACTION. Harold Mirels. August 1956. 60p. diagrs. (NACA TN 3278)


ON POSSIBLE SIMILARITY SOLUTIONS FOR THREE-DIMENSIONAL INCOMPRESSIBLE LAMINAR BOUNDARY LAYERS. I - SIMILARITY WITH RESPECT TO STATIONARY RECTANGULAR COORDINATES. Arthur G. Hansen and Howard Z. Herzig. October 1956. 30p. tab. (NACA TN 3768)


(1) AERODYNAMICS

(1.1.3.1) LAMINAR FLOW


ANALYSIS AND CALCULATION BY INTEGRAL METHODS OF LAMINAR COMPRESSIBLE BOUNDARY LAYER WITH HEAT TRANSFER AND WITH AND WITHOUT PRESSURE GRADIENT. Morris Morduchow, Polytechnic Institute of Brooklyn. 1955. ii, 19p. diagrs., tabs. (NACA Rept. 1245)


AVERAGE PROPERTIES OF COMPRESSIBLE LAMINAR BOUNDARY LAYER ON FLAT PLATE WITH UNSTEADY FLIGHT VELOCITY. Franklin K. Moore and Simon Ostrach. December 1956. 35p. diagrs., tabs. (NACA TN 3886)

SIMPLIFIED METHOD FOR ESTIMATING COMPRESSIBLE LAMINAR HEAT TRANSFER WITH PRESSURE GRADIENT. Eti Reshotko. December 1956. 16p. diagrs. (NACA TN 3888)


FURTHER EXPERIMENTS ON THE STABILITY OF LAMINAR AND TURBULENT HYDROGEN-AIR FLAMES AT REDUCED PRESSURES. Burton Fine. April 1957. 3lp. diagrs., tabs. (NACA TN 3977)


1.1.3.2 TURBULENT FLOW


THE INFLUENCE OF VORTEX GENERATORS ON THE PERFORMANCE OF A SHORT 1.9:1 STRAIGHT-WALL ANNULAR DIFFUSER WITH A WHIRLING INLET FLOW. Charles C. Wood and James T. Higginbotham. February 1953. 38p. diagrs., photo., tab. (NACA RM L52L01a)


MEASUREMENTS AND PREDICTIONS OF FLOW CONDITIONS ON A TWO-DIMENSIONAL BASE SEPARATING A MACH NUMBER 3.36 JET AND A MACH NUMBER 1.55 OUTER STREAM. Donald E. Coletti. May 1954. 56p. diagrs., photos. (NACA RM L54C08)

(1) AERODYNAMICS


ATTENUATION IN A SHOCK TUBE DUE TO UNSTEADY-BOUNDARY-LAYER ACTION. Harold Mirels. August 1956. 60p. diagrs. (NACA TN 3278)


INVESTIGATION OF SEPARATED FLOWS IN SUPERSONIC AND SUBSONIC STREAMS WITH EMPHASIS ON THE EFFECT OF TRANSITION. Dean R. Chapman, Donald M. Kuehn; and Howard K. Larson. March 1957. 109p. diagrs., photos. (NACA TN 3869)


CHARTS FOR THE ANALYSIS OF FLOW IN A WHIRLING DUCT. Robert A. Makofski. May 1957. 21p. diagrs. (NACA TN 3950)


(1.1.3.3) JET MIXING


MEASUREMENTS AND PREDICTIONS OF FLOW CONDITIONS ON A TWO-DIMENSIONAL BASE SEPARATING A MACH NUMBER 3.36 JET AND A MACH NUMBER 1.55 OUTER STREAM. Donald E. Coletti. May 1954. 56p. diagrs., photos. (NACA RM L54C08)


(1.1.4) AERODYNAMICS WITH HEAT


ANALYSIS AND CALCULATION BY INTEGRAL METHODS OF LAMINAR COMPRESSIBLE BOUNDARY LAYER WITH HEAT TRANSFER AND WITH AND WITHOUT PRESSURE GRADIENT. Morris Morduchow, Polytechnic Institute of Brooklyn. 1955. ii, 19p. diagrs., tabs. (NACA Rept. 1245)
(1) AERODYNAMICS


MECHANISM OF GENERATION OF PRESSURE WAVES AT FLAME FRONTS. Boa-Teh Chu, Johns Hopkins University. October 1956. 20p. diagr. (NACA TN 3683)


(1.1.4.1) HEATING


(1.1.4.2) HEAT TRANSFER


AVERAGE PROPERTIES OF COMPRESSIBLE LAMINAR BOUNDARY LAYER ON FLAT PLATE WITH UNSTABLE FLEET VELOCITY. Franklin K. Moore and Simon Ostrach. December 1956. 35p. diagrs., tabs. (NACA TN 3866)

THEORY AND DESIGN OF A PNEUMATIC TEMPERATURE PROBE AND EXPERIMENTAL RESULTS OBTAINED IN A HIGH-TEMPERATURE GAS STREAM. Frederick S. Simmons and George E. Glawe. January 1957. 41p. diagrs., photo. (NACA TN 3893)


MEASUREMENTS OF THE NONLINEAR VARIATION WITH TEMPERATURE OF HEAT-TRANSFER RATE FROM HOT WIRES IN TRANSONIC AND SUPERSONIC FLOW. Warren Winovich and Howard A. Stine. April 1957. 33p. diagrs., photo., tab. (NACA TN 3965)


CHARTS FOR THE ANALYSIS OF FLOW IN A WHIRLING DUCT. Robert A. Makofskei. May 1957. 21p. diagrs. (NACA TN 3950)


ON FLOW OF ELECTRICALLY CONDUCTING FLUIDS OVER A FLAT PLATE IN THE PRESENCE OF A TRANSVERSE MAGNETIC FIELD. Vernon J. Ronnow. May 1957. 54p. tabs. (NACA TN 3971)


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ADDITIONS OF HEAT


(1) AERODYNAMICS

ATTENUATION IN A SHOCK TUBE DUE TO UNSTEADY-BOUNDARY-LAYER ACTION. Harold Mirels. August 1956. 60p. diagrs. (NACA TN 3278)


(1.1.5) FLOW OF RAREFIED GASES

(1.1.5.1) SLIP FLOW

PROBLEM OF SLIP FLOW IN AERODYNAMICS. Robert E. Street, University of Washington. March 1957. 28p. (NACA RM 57A30)

(1.1.5.2) FREE MOLECULE FLOW


(1.1.6) TIME-DEPENDENT FLOW


(1.2) Wings


FLIGHT INVESTIGATION AT MACH NUMBERS FROM 0.8 TO 1.4 TO DETERMINE THE ZERO-LIFT DRAG OF WINGS WITH "M" AND "W" PLAN FORMS. Ellis Katz, Edward T. Marley, and William B. Pepper. September 18, 1950. 23p. diagrs., photos. (NACA RM L50G31)


(1.2.1) SECTION THEORY


CONVERSION OF INVISCID NORMAL-FORCE COEFFICIENTS IN HELIUM TO EQUIVALENT COEFFICIENTS IN AIR FOR SIMPLE SHAPES AT HYPERSOmic SPEEDS. James N. Mueller. October 1956. 31p. diagrs. (NACA TN 3807)


(1.2.1.2) SECTION VARIABLES

FLIGHT MEASUREMENTS OF THE PRESSURE DISTRIBUTION ON THE WING OF THE X-1 AIRPLANE (10-PERCENT-THICK WING) OVER A CHORDWISE STATION NEAR THE MIDSPAN, IN LEVEL FLIGHT AT MACH NUMBERS FROM 0.70 TO 1.00 AND IN A PULL-UP AT A MACH NUMBER OF 0.96. H. Arthur Carner and Ronald J. Knapp. September 12, 1950. 25p. diagrs., photo., tab. (NACA RM L50H04)


ZERO-LIFT DRAG OF A SERIES OF BOMB SHAPES AT MACH NUMBERS FROM 0.60 TO 1.10. William E. Stoney, Jr., and John F. Royall. July 1956. 12p. diagrs., photos., tabs. (NACA RM L56D16)

A CORRELATION OF LOW-SPEED, AIRFOIL-SECTION STALLING CHARACTERISTICS WITH REYNOLDS NUMBER AND AIRFOIL GEOMETRY. Donald E. Gault. March 1957. 9p. diagrs., tab. (NACA TN 3963)

(1.2.1.2.1) Camber

AERODYNAMIC STUDY OF A WING-FUSELAGE COMBINATION EMPLOYING A WING SWEPT BACK 63° - INVESTIGATION AT A MACH NUMBER OF 1.53 TO DETERMINE THE EFFECTS OF CAMBERING AND TWISTING THE WING FOR UNIFORM LOAD AT A LIFT COEFFICIENT OF 0.25. Robert T. Madden. May 6, 1949. 35p. diagrs., photo., tabs. (NACA RM A9C07)

AN INVESTIGATION AT SUBSONIC SPEEDS OF SEVERAL MODIFICATIONS TO THE LEADING-EDGE REGION OF THE NACA 64A010 AIRFOIL SECTION DESIGNED TO INCREASE MAXIMUM LIFT. Ralph L. Maki and Lynn W. Hunton. December 1956. 50p. diagrs., tab. (NACA TN 3871)
(1) AERODYNAMICS

(1.2.1.2.2) Thickness


HYDRODYNAMIC CHARACTERISTICS OVER A RANGE OF SPEEDS UP TO 80 FEET PER SECOND OF A RECTANGULAR MODIFIED FLAT PLATE HAVING AN ASPECT RATIO OF 0.25 AND OPERATING AT SEVERAL DEPTHS OF SUBMERSION. Victor L. Vaughan, Jr., and John A. Ramsen. April 1957. 31p. diagrs., photos. (NACA TN 3903)


(1.2.1.2.3) Thickness Distribution


AN INVESTIGATION AT SUBSONIC SPEEDS OF SEVERAL MODIFICATIONS TO THE LEADING-EDGE REGION OF THE NACA 64A00 AIRFOIL SECTION DESIGNED TO INCREASE MAXIMUM LIFT. Ralph L. Maki and Lynn W. Hunton. December 1956. 50p. diagrs., tab. (NACA TN 3871)

(1.2.1.2.5) Surface Conditions

EXPERIMENTAL INVESTIGATION OF BOUNDARY-LAYER SUCTION THROUGH SLOTS TO OBTAIN EXTENSIVE LAMINAR BOUNDARY LAYERS ON A 15-PERCENT-THICK AIRFOIL SECTION AT HIGH REYNOLDS NUMBERS. Laurence K. Loftin, Jr., and Elmer A. Horton. June 1952. 38p. diagrs., photos., tabs. (NACA RM L52D02)


EXPERIMENTAL DROPLET IMPINGEMENT ON SEVERAL TWO-DIMENSIONAL AIRFOILS WITH THICKNESS RATIOS OF 6 TO 16 PERCENT. Thomas F. Gelder, William H. Smyers, Jr., and Uwe von Glahn. December 1956. 77p. diagrs., photos., tabs. (NACA TN 3899)

(1.2.1.3)

**DESIGNATED PROFILES**

**FLIGHT MEASUREMENTS OF THE PRESSURE DISTRIBUTION ON THE WING OF THE X-1 AIRPLANE (10-PERCENT-THICK WING) OVER A CHORDWISE STATION NEAR THE MIDSPAN, IN LEVEL FLIGHT AT MACH NUMBERS FROM 0.79 TO 1.00 AND IN A PULL-UP AT A MACH NUMBER OF 0.96.** H. Arthur Carner and Ronald J. Knapp. September 12, 1950. 25p. diagrs., photo., tab. (NACA RM L50B04)

**EXPERIMENTAL INVESTIGATION OF BOUNDARY-LAYER SUCTION THROUGH SLOTS TO OBTAIN EXTENSIVE LAMINAR BOUNDARY LAYERS ON A 15-PERCENT-THICK AIRFOIL SECTION AT HIGH REYNOLDS NUMBERS.** Laurence K. Loftin, Jr., and Elmer A. Horton. June 1952. 36p. diagrs., photos., tabs. (NACA RM L52D02)


**BUFFETING FORCES ON TWO-DIMENSIONAL AIRFOILS AS AFFECTED BY THICKNESS AND THICKNESS DISTRIBUTION.** Charles F. Coe and Jack A. Mellenthin. February 1954. 26p. diagrs., photo. (NACA RM A53K24)


**AN INVESTIGATION AT LOW SPEED OF THE FLOW OVER A SIMULATED FLAT PLATE AT SMALL ANGLES OF ATTACK USING PITOT-STATIC AND HOT-WIRE PROBES.** Donald E. Gault. March 1957. 58p. diagrs., photos., tabs. (NACA TN 3876)

(1.2.1.4)

**HIGH-LIFT DEVICES**

**PRELIMINARY ESTIMATE OF PERFORMANCE OF A TURBINE ENGINE WHEN INLET PRESSURE IS REDUCED BELOW EXHAUST PRESSURE.** H. D. Wilsted and W. D. Stemplies. February 18, 1948. 42p. diagrs. (NACA RM ET130)


**AN INVESTIGATION AT SUBSONIC SPEEDS OF SEVERAL MODIFICATIONS TO THE LEADING-EDGE REGION OF THE NACA 64A010 AIRFOIL SECTION DESIGNED TO INCREASE MAXIMUM LIFT.** Ralph L. Maki and Lynn W. Hunton. December 1956. 50p. diagrs., tab. (NACA TN 3871)


(1.2.1.4.1)

**Plain Flaps**


(1.2.1.4.2)

**Split Flaps**


(1.2.1.4.3)

**Slotted Flaps**


(1) AERODYNAMICS

(1.2.1.4.4) Leading Edge Flaps


(1.2.1.4.5) Slots and Slats


(1.2.1.5) CONTROLS

(1.2.1.5.1) Flap Type


(1.2.1.5.2) Spoilers


(1.2.1.6) BOUNDARY LAYER

PRELIMINARY ESTIMATE OF PERFORMANCE OF A TURBOJET ENGINE WHEN INLET PRESSURE IS REDUCED BELOW EXHAUST PRESSURE. H. D. Wilsted and W. D. Stemples. February 18, 1948. 42p. diagrs. (NACA RM E7I30)


EXPERIMENTAL INVESTIGATION OF BOUNDARY-LAYER SUCTION THROUGH SLOTS TO OBTAIN EXTENSIVE LAMINAR BOUNDARY LAYERS ON A 15-PERCENT-THICK AIRFOIL SECTION AT HIGH REYNOLDS NUMBERS. Laurence K. Loftin, Jr., and Elmer A. Horton. June 1952. 38p. diagrs., photos., tabs. (NACA RM L52D02)

LIFT HYSTERESIS AT STALL AS AN UNSTEADY BOUNDARY-LAYER PHENOMENON. Franklin K. Moore. 1956. 11, 10p. diagrs., tab. (NACA Rept. 1291. Supersedes TN 3571)

ON POSSIBLE SIMILARITY SOLUTIONS FOR THREE-DIMENSIONAL INCOMPRESSIBLE LAMINAR BOUNDARY LAYERS. 1 - SIMILARITY WITH RESPECT TO STATIONARY RECTANGULAR COORDINATES. Arthur G. Hansen and Howard Z. Herzig. October 1956. 30p. tab. (NACA TN 3768)


COMPRESSIBLE LAMINAR BOUNDARY LAYER OVER A YAWED INFINITE CYLINDER WITH HEAT TRANSFER AND ARBITRARY PRANDTL NUMBER. Eli Reshotko and Ivan E. Beckwith. June 1957. (i), 86p. diags., tabs. (NACA TN 3986)

(1.2.1.6.1) Characteristics


A CORRECTION TO STATIONARY POLAR COORDINATES.


(1.2.1.7) REYNOLDS NUMBER EFFECTS


EXPERIMENTAL INVESTIGATION OF BOUNDARY-LAYER SUCTION THROUGH SLOTS TO OBTAIN EXTENSIVE LAMINAR BOUNDARY LAYERS ON A 15-PERCENT-THICK AIRFOIL SECTION AT HIGH REYNOLDS NUMBERS. Lawrence K. Loftin, Jr., and Elmer A. Horton. June 1952. 38p. diags., photos., tabs. (NACA RM L52D02)


AN INVESTIGATION AT SUBSONIC SPEEDS OF SEVERAL MODIFICATIONS TO THE LEADING-EDGE REGION OF THE NACA 64A010 AIRFOIL SECTION DESIGNED TO INCREASE MAXIMUM LIFT. Ralph L. Maki and Lynn W. Hunton. December 1956. 50p. diags., tab. (NACA TN 3871)

A CORRELATION OF LOW-SPEED, AIRFOIL-SECTION STALLING CHARACTERISTICS WITH REYNOLDS NUMBER AND AIRFOIL GEOMETRY. Donald E. Gault. March 1957. 9p. diags., tab. (NACA TN 3965)

(1.2.1.8) MACH NUMBER EFFECTS

FLIGHT MEASUREMENTS OF THE PRESSURE DISTRIBUTION ON THE WING OF THE X-1 AIRPLANE (10-PERCENT-THICK WING) OVER A CHORDWISE STATION NEAR THE MIDSPLAN, IN LEVEL FLIGHT AT MACH NUMBERS FROM 0.79 TO 1.00 AND IN A PULL-UP AT A MACH NUMBER OF 0.96. H. Arthur Carner and Ronald J. Knapp. September 12, 1950. 25p. diags., photo., tab. (NACA RM L50H04)
INVESTIGATION AT A MACH NUMBER OF 1.2 OF TWO 45° SWEPTBACK WINGS UTILIZING NACA 2-006 AND NACA 65A006 AIRFOIL SECTIONS. Homer B. Wilson, Jr. September 1952. 20p. diagrs., photos., tab. (NACA RM L52G17)


INVESTIGATION AT HIGH SUBSONIC SPEEDS OF THE PRESSURE DISTRIBUTIONS ON A 45° SWEPTBACK VERTICAL TAIL IN SIDESLIP WITH A 45° SWEPTBACK HORIZONTAL TAIL MOUNTED AT 50- and 100-PERCENT VERTICAL-TAIL SPAN. Harleth G. Wiley and William C. Moseley, Jr. November 1954. 89p. diagrs., photos., tabs. (NACA RM L54H08)


CONVERSION OF INVISCID NORMAL-FORCE COEFFICIENTS IN HELIUM TO EQUIVALENT COEFFICIENTS IN AIR FOR SIMPLE SHAPES AT HYPERSONIC SPEEDS. James N. Mueller. October 1956. 31p. diagrs. (NACA TN 3807)

AN INVESTIGATION AT SUBSONIC SPEEDS OF SEVERAL MODIFICATIONS TO THE LEADING-EDGE REGION OF THE NACA 64A010 AIRFOIL SECTION DESIGNED TO INCREASE MAXIMUM LIFT. Ralph L. Maki and Lyn W. Hilton. December 1956. 50p. diagrs., tab. (NACA TN 3871)


(1.2.1.9) WAKE


TURBULENCE IN THE WAKE OF A THIN AIRFOIL AT LOW SPEEDS. George S. Campbell, California Institute of Technology. January 1957. 63p. diagrs. (NACA TM 1427)

(1.2.2) COMPLETE WINGS

WIND-TUNNEL INVESTIGATION AT LOW SPEED OF A WING SWEPT BACK 65° AND TWISTED AND CAMBERED FOR A UNIFORM LOAD AT A LIFT COEFFICIENT OF 0.5. James A. Weiberg and Hubert C. Carel. May 9, 1950. 52p. diagrs., photos., tabs. (NACA RM A50A23)

WIND-TUNNEL INVESTIGATION AT LOW SPEED OF A WING SWEPT BACK 65° AND TWISTED AND CAMBERED FOR UNIFORM LOAD AT A LIFT COEFFICIENT OF 0.5 AND WITH A THICKENED TIP SECTION. James A. Weiberg and Hubert C. Carel. November 21, 1950. 42p. diagrs., photo., tabs. (NACA RM A50I14)


EFFECT OF WING FLEXIBILITY ON THE DAMPING IN ROLL OF A NOTCHED DELTA WING-BODY COMBINATION BETWEEN MACH NUMBERS 0.8 AND APPROXIMATELY 2.2 AS DETERMINED WITH ROCKET-PROPELLED MODELS. William M. Bland, Jr. June 1954. 20p. diagrs., photos. (NACA RM L54E04)


(1.2.2.1) WING THEORY


THE PROPER COMBINATION OF LIFT LOADINGS FOR LEAST DRAG ON A SUBLSONIC WING. Frederick C. Grant. 1956. ii, 9p. diagrs., tab. (NACA Rept. 1275. Supersedes TN 3533)


THREE-DIMENSIONAL TRANSFLOW THEORY APPLIED TO SLENDER WINGS AND BODIES. Max. A. Heaslet and John R. Spreiter. July 1956. 72p. diagrs. (NACA TN 3717)

METHOD FOR CALCULATING THE AERODYNAMIC LOADING ON AN OSCILLATING FINITE WING IN SUBLSONIC AND SUBLSONIC FLOW. Harry L. Runyan and Donald S. Woolston. August 1956. 76p. diagrs., tabs. (NACA TN 3694)

THEORETICAL AND EXPERIMENTAL INVESTIGATION OF THE SUBLSONIC-FLOW FIELDS BENEATH SwePT AND UNSWEPt WINGS WITH TABLES OF VORTEX-INDUCED VELOCITIES. William J. Alford, Jr. August 1956. 91p. diagrs., photo., tabs. (NACA TN 3738)


(1) AERODYNAMICS


THE LINEARIZED SUBSONIC FLOW ABOUT SYMMETRICAL WING-BODY COMBINATIONS. John B. McDevitt. April 1957. 67p. diagrs. (NACA TN 3964)

LIFT AND MOMENT RESPONSES TO PENETRATION OF SHARP-EDGED TRAVELING GUSTS, WITH APPLICATION TO PENETRATION OF WEAK BLAST WAVES. Joseph A. Drischler and Franklin W. Diedrich. May 1957. 85p. diagrs., tabs. (NACA TN 3956)

(1.2.2.2) WING VARIABLES


TABULATED PRESSURE COEFFICIENTS AND AERODYNAMIC CHARACTERISTICS MEASURED ON THE WING OF THE BELL X-1 AIRPLANE IN LEVEL FLIGHT AT MACH NUMBERS FROM 0.78 TO 1.00 AND IN A PULL-UP AT A MACH NUMBER OF 0.96. H. Arthur Carner and Mary M. Payne. September 18, 1950. 43p. diagrs., photos., tabs. (NACA RM L50H23)


LIFT, DRAG, AND PITCHING MOMENT OF LOW-ASPECT-RATIO WINGS AT SUBSONIC AND SUPERSONIC SPEEDS - PLANE TRAPEZOIDAL WING OF ASPECT RATIO 2 WITH NACA 0008-63 SECTION. Donald W. Smith and John C. Heitmeyer. February 1, 1951. 22p. diagrs., photo. (NACA RM A50K20)


LIFT, DRAG, AND PITCHING MOMENT OF LOW-ASPECT-RATIO WINGS AT SUBSONIC AND SUPERSONIC SPEEDS - PLANE 45° SWEEP-BACK WING OF ASPECT RATIO 3, TAPER RATIO 0.4 WITH 3-PERCENT-THICK, BICONVEX SECTION. John C. Heitmeyer. September 1951. 20p. diagrs. (NACA RM A51H10)

TABULATED PRESSURE COEFFICIENTS AND AERODYNAMIC CHARACTERISTICS MEASURED ON THE WING OF THE BELL X-1 AIRPLANE IN AN UNACCELERATED LOW-SPEED STALL, IN PUSH-OVERS AT MACH NUMBERS OF 0.83 AND 0.99, AND IN A PULL-UP AT A MACH NUMBER OF 1.16. Ronald J. Knapp. September 1951. 53p. diagrs., photo., tabs. (NACA RM L51F25)

DAMPING IN ROLL OF ROCKET-POWERED TEST VEHICLES HAVING SWEEP, TAPERED WINGS OF LOW ASPECT RATIO. E. Claude Sanders, Jr., and James L. Edmondson. October 1951. 25p. diagrs., photos., tab. (NACA RM L51G06)


EFFECTS OF CHORD-EXTENSION AND DROP OF COMBINED LEADING-EDGE FLAP AND CHORD-EXTENSION ON LOW-SPEED STATIC LONGITUDINAL STABILITY CHARACTERISTICS OF AN AIRPLANE MODEL HAVING A 35° SWEEPBACK WING WITH PLAIN FLAPS NEUTRAL OR DEFLECTED. Byron M. Jaquet. January 1953. 34p. diagrs., photos. (NACA RM L52K21a)


TRANSONIC CHARACTERISTICS OF A 45° SWEEPBACK WING-FUSELAGE COMBINATION. EFFECT OF LONGITUDINAL WING POSITION AND DIVISION OF WING AND FUSELAGE FORCES AND MOMENTS. Joseph M. Hallissy and Donald R. Bowman. September 1951. 20p. diagrs., photo. (NACA RM L52K04)

TRANSONIC AERODYNAMIC CHARACTERISTICS IN PITCH OF A W-WING HAVING 60° 45° PANEL SWEEP, ASPECT RATIO 3.5, AND TAPER RATIO 0.25. William D. Morrison, Jr. August 1953. 18p. diagrs., photo. (NACA RM L53F22)


FLIGHT INVESTIGATION OF THE ROLLING EFFECTIVENESS OF FINGERED SEMAPHORE SPOILERS ON A TAPERED 45° SWEEPBACK WING BETWEEN MACH NUMBERS 0.6 AND 1.3. James D. Church. January 1954. 27p. diagrs., photos. (NACA RM L53K20)

(1) AERODYNAMICS


**AERODYNAMIC CHARACTERISTICS AT SMALL SCALE AND A MACH NUMBER OF 1.38 OF UN-TAPERED WINGS HAVING M AND W PLAN FORMS.** William B. Kemp, Jr. June 1954. 17p. diagrs., tab. (NACA RM L54D15a)


**A THEORETICAL STUDY OF THE LIFTING EFFICIENCY AT SUPersonic SPEEDS OF WINGS UTILIZING INDIRECT LIFT INDUCED BY VERTICAL SURFACES.** Vernon J. Rossow. March 1956. 11, 59p. diagrs. (NACA RM A55L08)


**AERODYNAMIC STUDY OF A WING-FUSELAGE COMBINATION EMPLOYING A WING SWEPT BACK 65° - INVESTIGATION AT A MACH NUMBER OF 1.59 TO DETERMINE THE EFFECTS OF CAMBERING AND TWISTING THE WING FOR UNIFORM LOAD AT A LIFT COEFFICIENT OF 0.25.** Robert T. Madden. May 6, 1949. 33p. diagrs., photo., tabs. (NACA RM ABC07)


**SOME EFFECTS OF AEROELASTICITY AT MACH NUMBERS FROM 0.7 TO 1.6 ON THE ROLLING EFFECTIVENESS OF THIN FLAT-PLATE DELTA WINGS HAVING 45° SWEPT LEADING EDGES AND FULL-SPAN CONSTANT-CHORD ALERONS.** Edward T. Marley and Roland D. English. February 1952. 14p. diagrs., photo. (NACA RM L51L05)


**AERODYNAMIC CHARACTERISTICS OF TWO PLANE, UNSWEPT TAPERED WINGS OF ASPECT RATIO 3 AND 3-PERCENT THICKNESS FROM TESTS ON TRANSSONIC BUMP.** Horace F. Emerson and Bernard M. Gale. May 1952. 23p. diagrs., photo. (NACA RM A52C07)


(1.2.2.2.1) Profiles

**AERODYNAMIC STUDY OF A WING-FUSELAGE COMBINATION EMPLOYING A WING SWEPT BACK 65° - INVESTIGATION AT A MACH NUMBER OF 1.59 TO DETERMINE THE EFFECTS OF CAMBERING AND TWISTING THE WING FOR UNIFORM LOAD AT A LIFT COEFFICIENT OF 0.25.** Robert T. Madden. May 6, 1949. 33p. diagrs., photo., tabs. (NACA RM ABC07)


INVESTIGATION AT A MACH NUMBER OF 1.2 OF TWO 45° SWEPTBACK WINGS UTILIZING NACA 2-006 AND NACA 65A006 AIRFOIL SECTIONS. Homer B. Wilson, Jr. September 1952. 20p. diagrams, photos., tab. (NACA RM L52G17)

SOME EFFECTS OF SPOILER HEIGHT, WING FLEXIBILITY, AND WING THICKNESS ON ROLLING EFFECTIVENESS AND DRAG OF UNSWEP WINGS AT MACH NUMBERS BETWEEN 0.4 AND 1.7. E. M. Fields. October 1952. 20p. diagrams, photo. (NACA RM L52H18)


EFFECTS OF CHORD-EXTENSION AND DRÖOP OF COMBINED LEADING-EDGE FLAP AND CHORD-EXTENSION ON LOW-SPEED STATIC LONITUDINAL STABILITY CHARACTERISTICS OF AN AIRPLANE MODEL HAVING A 35° SWEPTBACK WING WITH PLAIN FLAPS NEUTRAL OR DEFLECTED. Byron M. Jaquet. January 1953. 34p. diagrams, photos. (NACA RM L52K21a)

LIFT, DRAG, AND PITCHING MOMENT OF LOW-ASPECT-RATIO WINGS AT SUBSONIC AND SUPERSONIC SPEEDS - COMPARISON OF THREE WINGS OF ASPECT RATIO 2 OF RECTANGULAR, SWEPTBACK, AND TRAJECTORY PLAN FORM, INCLUDING EFFECTS OF THICKNESS DISTRIBUTION. Ronald C. Hightower. February 1953. 30p. diagrams, tabs. (NACA RM A52L02)


A COMPARISON OF THE LONGITUDINAL AERODYNAMIC CHARACTERISTICS AT MACH NUMBERS UP TO 0.94 OF SWEPTBACK WINGS HAVING NACA 4-DIGIT OR NACA 64A THICKNESS DISTRIBUTIONS. Fred B. Sutton and Jerald K. Dickson. August 1954. 67p. diagrams, tab. (NACA RM A54F18)


LOW-SPEED WIND-TUNNEL INVESTIGATION OF LEADING-EDGE POROUS SUCTION ON A 4-PERCENT-THICK 60° DELTA WING. E. Carson Yates, Jr. March 1955. 73p. diagrams, photo., tabs. (NACA RM L54L21)

EFFECTS OF LEADING-EDGE RADIUS ON THE LONGITUDINAL STABILITY OF TWO 45° SWEPTBACK WINGS AS INFLUENCED BY REYNOLDS NUMBERS UP TO 6.20 x 10⁶ AND MACH NUMBERS UP TO 0.303. Gerald V. Foster and William C. Schneider. July 1955. 65p. diagrams. (NACA RM L55F06)

(1.2, 2, 2, 2)
Aspect Ratio


PRESSURE DISTRIBUTION AT LOW SPEED ON A MODEL INCORPORATING A WING WITH ASPECT RATIO 6, 45° SWEET, TAPER RATIO 0.6, AND AN NACA 65A006 AIRFOIL SECTION. Edward C. Polhamus and Albert G. Few, Jr. August 1952. 46p. diagrams, photo. (NACA RM L52F11)


LOW-SPEED LONGITUDINAL CHARACTERISTICS OF TWO UNSWEP T WINGS OF HEXAGONAL AIR-FOIL SECTIONS HAVING ASPECT RATIOS OF 2.5 AND 4.0 WITH FUSELAGE AND WITH HORIZONTAL TAIL LOCATED AT VARIOUS VERTICAL POSITIONS. William M. Hadaway and Patrick A. Cancro. October 1953. 29p. diagrs., photos. (NACA RM L53H14a)


A COMPARISON OF THE LONGITUDINAL AERO-DYNAMIC CHARACTERISTICS AT MACH NUMBERS UP TO 0.94 OF SWEPTBACK WINGS HAVING NACA 4-DIGIT OR NACA 64A THICKNESS DISTRIBUTIONS. Fred B. Sutton and Jerald R. Dickson. August 1954. 67p. diagrs., tab. (NACA RM A54F18)


THE HYDRODYNAMIC CHARACTERISTICS OF MODIFIED RECTANGULAR FLAT PLATES HAVING ASPECT RATIOS OF 1.00, 0.25, AND 0.125 AND OPERATING NEAR A FREE WATER SURFACE. Kenneth L. Wadlin, John A. Ramsen, and Victor L. Vaughan, Jr. 1955. 50p. diagrs., photos. (NACA Rept. 1246. Supersedes TN 3079; TN 3249)


EFFECTS OF LEADING-EDGE RADIUS ON THE LONGITUDINAL STABILITY OF TWO 45° SWEPT-BACK WINGS AS INFLUENCED BY REYNOLDS NUMBERS UP TO 8.20 X 10⁶ AND MACH NUMBERS UP TO 0.303. Gerald V. Foster and William C. Schneider. July 1955. 65p. diagrs. (NACA RM L55F06)


THEORETICAL SPAN LOAD DISTRIBUTIONS AND ROLLING MOMENTS FOR SIDESLIPPING WINGS OF ARBITRARY PLAN FORM IN INCOMPRESSIBLE FLOW. M. J. Queljo. 1956. 15p. diagrs. (NACA Rept. 1269. Supersedes TN 3605)


(1.2.2.2.3)

Sweep


AERODYNAMIC STUDY OF A WING-FUSELAGE COMBINATION EMPLOYING A WING SWEPT BACK 60°. - INVESTIGATION AT A MACH NUMBER OF 1.53 TO DETERMINE THE EFFECTS OF CAMBERING AND TWISTING THE WING FOR UNIFORM LOAD AT A LIFT COEFFICIENT OF 0.25. Robert T. Madden. May 6, 1949. 33p. diagrams., photos., tabs. (NACA RM A9007)


FLIGHT INVESTIGATION AT MACH NUMBERS FROM 0.8 TO 1.4 TO DETERMINE THE ZERO-LIFT DRAG OF WINGS WITH "M" AND "W" PLAN FORMS. Ellis Katz, Edward T. Marley, and William B. Pepper. September 18, 1950. 23p. diagrams., photos., tab. (NACA RM L50G31)


AERODYNAMIC STUDY OF A WING-FUSELAGE COMBINATION EMPLOYING A WING SWEPT BACK 60°. - EFFECT OF SIDESLIP ON AERODYNAMIC CHARACTERISTICS AT A MACH NUMBER OF 1.4 WITH THE WING TWISTED AND CAMBERED. Henry C. Lessing. September 29, 1950. 28p. diagrams., photos. (NACA RM A50F09)

AERODYNAMIC STUDY OF A WING-FUSELAGE COMBINATION EMPLOYING A WING SWEPT BACK 60°. - EFFECT OF REYNOLDS NUMBER AT SUPERSONIC MACH NUMBERS ON THE LONGITUDINAL CHARACTERISTICS OF A WING TWISTED AND CAMBERED FOR UNIFORM LOAD. John C. Heitmeyer. October 9, 1950. 36p. diagrams., photo. (NACA RM A50G10)


(1) **AERODYNAMICS**

**AERODYNAMIC CHARACTERISTICS OF WINGS DESIGNED FOR STRUCTURAL IMPROVEMENTS.** Joseph Weil and Edward C. Polhamus. May 28, 1951. 15p. diagrs. (NACA RM L51E10a)


LIFT, DRAG, AND PITCHING MOMENT OF LOW-ASPECT-RATIO WINGS AT SUBSONIC AND SUPERSONIC SPEEDS - PLANE 45° SWEEP-BACK WING OF ASPECT RATIO 3, TAPER RATIO 0.4 WITH 3-PERCENT-THICK, BICONVEX SECTION. John C. Heittmeier. September 1951. 20p. diagrs. (NACA RM A51B10)

FLIGHT INVESTIGATION AT SUBSONIC, TRANS-SONIC, AND SUPERSONIC VELOCITIES OF THE HINGE-MOMENT CHARACTERISTICS, LATERAL-CONTROL EFFECTIVENESS, AND WING DAMPING IN ROLL OF A 60° SWEEPBACK DELTA WING WITH HALF-DELTA TIP AILERONS. (Revised.) C. William Martz and James D. Church. September 1951. 32p. diagrs., photos. (NACA RM L51G18)

DAMPING IN ROLL OF ROCKET-POWERED TEST VEHICLES HAVING SWEEP, TAPERED WINGS OF LOW ASPECT RATIO. E. Claude Sanders, Jr., and James L. Edmondson. October 1951. 25p. diagrs., photos., tab. (NACA RM L51G06)

EFFECTS OF REYNOLDS NUMBER ON THE AERODYNAMIC CHARACTERISTICS OF A DELTA WING AT MACH NUMBER OF 2.41. John E. Hatch, Jr., and L. Keith Hargrave. October 1951. 36p. diagrs., photos., tab. (NACA RM L51H06)

**FREE-FLIGHT INVESTIGATION TO DETERMINE FORCE AND HINGE-MOMENT CHARACTERISTICS AT ZERO ANGLE OF ATTACK OF A 60° SWEEPBACK HALF-DELTA TIP CONTROL ON A 60° SWEEPBACK DELTA WING AT MACH NUMBERS BETWEEN 0.68 AND 1.44.** C. William Martz, James D. Church, and John W. Goslee. December 1951. 36p. diagrs., photos. (NACA RM L51I14)


SOME EFFECTS OF AEREOELASTICITY AT MACH NUMBERS FROM 0.7 TO 1.6 ON THE ROLLING EFFECTIVENESS OF THIN FLAT-PLATE DELTA WINGS HAVING 45° SWEEP LEADING EDGES AND FULL-SPAN CONSTANT-CHORD AILERONS. Edward T. Marley and Roland D. English. February 1952. 14p. diagrs., photo. (NACA RM L51L05)


TRANSONIC AERODYNAMIC CHARACTERISTICS OF THREE W-PLAN-FORM WINGS HAVING ASPECT RATIO 1.5, TAPER RATIO 0.45, AND TAPER-RATIO 0.33A- SERIES AIRFOIL SECTIONS. William D. Morrison, Jr. July 1952. 30p. diagrs., photo. (NACA RM L52E14a)


PRESSURE DISTRIBUTION AT LOW SPEED ON A MODEL INCORPORATING A W WING WITH ASPECT RATIO 6, 45° SWEET, TAPER RATIO 0.6, AND AN NACA 65A009 AIRFOIL SECTION. Edward C. Polhemus and Albert G. Few, Jr. August 1952. 46p. diagrs., photo. (NACA RM L52F11)


AERODYNAMIC LOAD MEASUREMENTS OVER A LEADING-EDGE SLAT ON A 45° SWEPTBACK WING AT MACH NUMBERS FROM 0.10 TO 0.91. Jones F. Cahill and Robert J. Nuber. September 1952. 32p. diagrs., photos., tab. (NACA RM L52G18a)

ROCKET-MODEL INVESTIGATION TO DETERMINE THE FORCE AND HINGE-MOMENT CHARACTERISTICS OF A HALF-DELTA TIP CONTROL ON A 50° SWEPTBACK DELTA WING BETWEEN MACH NUMBERS OF 0.55 AND 1.43. C. William Martz, James D. Church, and John W. Goslee. October 1952. 53p. diagrs., photos., tab. (NACA RM L52H06)


TRANSONIC AERODYNAMIC CHARACTERISTICS IN PITCH OF A W-WING HAVING 60° 48° PANEL SWEET, ASPECT RATIO 3.5, AND TAPER RATIO 0.25. William D. Morrison, Jr. August 1953. 18p. diagrs., photo. (NACA RM L53F22)


(1) AERODYNAMICS
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A WIND-TUNNEL INVESTIGATION AT HIGH SUBSONIC SPEEDS OF THE LATERAL CONTROL CHARACTERISTICS OF VARIOUS PLAIN Spoiler CONFIGURATIONS ON A 3-PERCENT-THICK 60° DELTA WING. Harih G. Wiley. May 1954. 45p. diagrs., tabs. (NACA RM L54D01)

A COMPARISON OF THE LONGITUDINAL AERODYNAMIC CHARACTERISTICS AT MACH NUMBERS UP TO 0.94 OF SWEPTBACK WINGS HAVING NACA 4-DIGIT OR NACA 64A THICKNESS DISTRIBUTIONS. Fred B. Sutton and Jerald K. Dickson. August 1954. 69p. diags., tabs. (NACA RM A54F18)

PRESSURE DISTRIBUTIONS ON PLUG- AND SEMAPHORE-TYPE SPOILER AILERONS ON A 35° SWEPTBACK WING OF ASPECT RATIO 4, TAPER RATIO 0.6, AND NACA 65A006 AIRFOIL SECTION AT HIGH SUBSONIC SPEEDS. Alexander D. Hammond and William C. Hayes, Jr. August 1954. 55p. diags., tabs. (NACA RM L54F08)


A LOW-SPEED INVESTIGATION OF A THIN 60° DELTA WING EQUIPPED WITH A DOUBLE SLOTTED FLAP TO DETERMINE THE CHORDWISE PRESSURE DISTRIBUTION AND THE EFFECT OF VANE SIZE. Delwin R. Croom. March 1955. 42p. diags., tabs. (NACA RM L54L03a)


LOW-SPEED STUDY OF THE EFFECT OF FREQUENCY ON THE STABILITY DERIVATIVES OF WINGS OSCILLATING IN YAW WITH PARTICULAR REFERENCE TO HIGH ANGLE-OF-ATTACK CONDITIONS. John P. Campbell, Joseph L. Johnson, Jr., and Donald E. Hewes. November 1955. 93p. diags., photos., tabs. (NACA RM L55H05)

THEORETICAL SPAN LOAD DISTRIBUTIONS AND ROLLING MOMENTS FOR SIDESLIPPING WINGS OF ARBITRARY PLAN FORM IN INCOMPRESSIBLE FLOW. M. J. Queijo. 1956. ii, 15p. diags. (NACA Rept. 1269. Supersedes TN 3605)

(1) AERODYNAMICS


LOW-SPEED LONGITUDINAL AERODYNAMIC CHARACTERISTICS OF A 45° SWEEPBACK WING WITH DOUBLE SLOTTED FLAPS. Roger L. Naeseth. April 1956. 31p. diagrs., tabs. (NACA RM L56A10)


EXPERIMENTAL STEADY-STATE YAWING DERIVATIVES OF A 60° DELTA-WING MODEL AS AFFECTED BY CHANGES IN VERTICAL POSITION OF THE WING AND IN RATIO OF FUSELAGE DIAMETER TO WING SPAN. Byron M. Jaquet and Herman S. Fletcher. October 1956. 20p. diagrs., tab. (NACA TN 3843)


COMPRESSIBLE LAMINAR BOUNDARY LAYER OVER A YAWED INFINITE CYLINDER WITH HEAT TRANSFER AND ARBITRARY FRANDTIL NUMBER. Eli Reshotko and Ivan E. Beckwith. June 1957. (i), 86p. diagrs., tabs. (NACA TN 3966)

(1.2.2.2.4)

Taper and Twist


(1.2.2.5)

Inlets and Exits


(1.2.2.6)

Surface Conditions

AERODYNAMIC CHARACTERISTICS OF TWO PLANE, UNSWEPT TAPERED WINGS OF ASPECT RATIO 3 AND 3-PERCENT THICKNESS FROM TESTS ON TRANSONIC BUMP. Horace F. Emerson and Bernard M. Gale. May 1952. 23p. diagrs., photo. (NACA RM A52C07)


SOME EFFECTS OF LEADING-EDGE ROUGHNESS ON THEAILERON EFFECTIVENESS AND DRAG OF A THIN RECTANGULAR WING EMPLOYING A FULL-SPAN PLAIN AILERON AT MACH NUMBERS FROM 0.6 TO 1.5. Roland D. English. November 1953. 16p. diagrs., photos. (NACA RM L53I25)


(1.2.2.7)

Dihedral


(1.2.2.3)

HIGH-LIFT DEVICES

WIND-TUNNEL INVESTIGATION AT LOW SPEED OF A WING SWEPT BACK 63° AND TWISTED AND CAMBERED FOR A UNIFORM LOAD AT A LIFT COEFFICIENT OF 0.5. James A. Welberg and Hubert C. Carel. May 9, 1950. 53p. diagrs., photos., tabs. (NACA RM A50A23)
(1) AERODYNAMICS

WIND-TUNNEL INVESTIGATION AT LOW SPEED OF A WING SWEPT BACK 63° AND TWISTED AND Cambered FOR UNIFORM LOAD AT A LIFT COEFFICIENT OF 0.5 AND WITH A THICKENED TIP SECTION. James A. Weiberg and Hubert C. Carel. November 21, 1950. 42p. diagrs., photo., tabs. (NACA RM A50I14)


WIND-TUNNEL INVESTIGATION OF AN EXTERNAL-FLOW JET-AUGMENTED SLOTTED FLAP SUITABLE FOR APPLICATION TO AIRPLANES WITH POD-MOUNTED JET ENGINES. John P. Campbell and Joseph L. Johnson, Jr. December 1956. 47p. diagrs., tab. (NACA TN 3866)


(1.2.2.3.1) Trailing-Edge Flaps

FLIGHT-TEST EVALUATION OF THE LONGITUDINAL STABILITY AND CONTROL CHARACTERISTICS OF 0.5-SCALE MODELS OF THE LARK PILOTLESS- AIRCRAFT CONFIGURATION. David G. Stone. February 6, 1948. 60p. diagrs., photos., tabs. (NACA RM L7125)


CONTROL CHARACTERISTICS OF TRAILING-EDGE SPOILERS ON UNTAPERED BLUNT TRAILING-EDGE WINGS OF ASPECT RATIO 2.7 WITH 60° AND 45° SWEEPBACK AT MACH NUMBERS OF 1.41 AND 1.96. Cari R. Jacobsen. December 1952. 35p. diagrs., photo. (NACA RM L52226)


LOW-SPEED LONGITUDINAL CHARACTERISTICS OF TWO UNSWEPT WINGS OF HEXAGONAL AIR-FOIL SECTIONS HAVING ASPECT RATIOS OF 2.5 AND 4.0 WITH FUSELAGE AND WITH HORIZONTAL TAIL LOCATED AT VARIOUS VERTICAL POSITIONS. William M. Hadaway and Patrick A. Cancro. October 1953. 29p. diagrs., photos. (NACA RM L53H14a)


A LOW-SPEED INVESTIGATION OF THE AERODYNAMIC, CONTROL, AND HINGE-MOMENT CHARACTERISTICS OF TWO TYPES OF CONTROLS AND BALANCING TABS ON A LARGE-SCALE THIN DELTA-WING—FUSELAGE MODEL. Marvin P. Fink and Bennie W. Cocke. March 1954. 69p. diagrs., photos., tabs. (NACA RM L54B03)


A LOW-SPEED INVESTIGATION OF A THIN 60° DELTA WING EQUIPPED WITH A DOUBLE SLOTTED FLAP TO DETERMINE THE CHORDWISE PRESSURE DISTRIBUTION AND THE EFFECT OF VANE SIZE. Delwin R. Croom. March 1955. 42p. diags., tabs. (NACA RM L54L03a)


GROUND EFFECTS ON THE LONGITUDINAL CHARACTERISTICS OF TWO MODELS WITH WINGS HAVING LOW ASPECT RATIO AND POINTED TIPS. Donald A. Buell and Bruce E. Tintegral. July 1955. 48p. diags., photos., tabs. (NACA RM A55E04)


LOW-SPEED LONGITUDINAL AERODYNAMIC CHARACTERISTICS OF A 49° SWEPTBACK WING WITH DOUBLE SLOTTED FLAPS. Rodger L. Naeseth. April 1956. 31p. diags., tabs. (NACA RM L56A10)


(1.2.2.3.2) Slots and Slats


AERODYNAMIC LOAD MEASUREMENTS OVER A LEADING-EDGE SLAT ON A 45° SWEPTBACK WING AT MACH NUMBERS FROM 0.10 TO 0.91. Jones F. Cahill and Robert J. Nuber. September 1952. 32p. diagrs., photos., tab. (NACA RM L52G18a)


(1.2.2.3.3) Leading-Edge Flaps

EFFECT OF PROPELLER LOCATION AND FLAP DEFLECTION ON THE AERODYNAMIC CHARACTERISTICS OF A WING-PROPELLER COMBINATION FOR ANGLES OF ATTACK FROM 0° TO 89°. William A. Newsom, Jr. January 1957. 45p. diagrs. (NACA TN 3917)


EFFECT OF LEADING-EDGE CHORD-EXTENSIONS ON THE AERODYNAMIC CHARACTERISTICS OF A 45° SWEPTBACK WING-FUSELAGE COMBINATION AT MACH NUMBERS OF 0.40 TO 1.03. F. E. West, Jr., George Liner, and Gladys S. Martz. April 1953. 40p. diagrs., photo. (NACA RM L53B02)
(1) AERODYNAMICS

INVESTIGATION OF THE EFFECTS OF LEADING-EDGE FLAPS ON THE AERODYNAMIC CHARACTERISTICS IN PITCH AT MACH NUMBERS FROM 0.40 TO 0.63 OF A WING-FUSELAGE CONFIGURATION WITH A 45° SWEPTBACK WING OF ASPECT RATIO 4. Kenneth P. Spreemann and William J. Alford, Jr. August 1953. 36p. diagrs., photo., tabs. (NACA RM L53G13)


LOW-SPEED LONGITUDINAL CHARACTERISTICS OF TWO UNSWEPT WINGS OF HEXAGONAL AIR-FOIL SECTIONS HAVING ASPECT RATIOS OF 2.5 AND 4.0 WITH FUSELAGE AND WITH HORIZONTAL TAIL LOCATED AT VARIOUS VERTICAL POSITIONS. William M. Hadaway and Patrick A. Cancro. October 1953. 29p. diagrs., photos. (NACA RM L53H14a)


(1.2.2.4) CONTROLS


A LOW-SPEED INVESTIGATION OF THE AERODYNAMIC, CONTROL, AND HINGE-MOMENT CHARACTERISTICS OF TWO TYPES OF CONTROLS AND BALANCING TABS ON A LARGE-SCALE THIN DELTA-WING-FUSELAGE MODEL. Marvin P. Fink and Bennie W. Cocke. March 1954. 69p. diagrs., photo., tabs. (NACA RM L54B03)


EFFECTS OF SPLIT FLAPS, ELEVONS, AND LEADING-EDGE DEVICES AT LOW SPEED.


SOME EFFECTS OF AEREOELASTICITY AT MACH NUMBERS FROM 0.7 TO 1.6 ON THE ROLLING EFFECTIVENESS OF THIN FLAT-PLATE DELTA WINGS HAVING 45° SWEPT-LEADING EDGES AND FULL-SPAN CONSTANT-CHORD AILERONS. Edward T. Marley and Roland D. English. February 1952. 14p. diagrs., photo. (NACA RM L52L05)


CONTROL HINGE-MOMENT AND EFFECTIVENESS CHARACTERISTICS OF A 60° HALF-DELTA TIP CONTROL ON A 60° DELTA WING AT MACH NUMBERS OF 1.41 AND 1.96. Lawrence D. Guy. October 1952. 46p. diagrs., photo, tab. (NACA RM L52H13)


(1) AERODYNAMICS

SOME EFFECTS OF LEADING-EDGE ROUGHNESS ON THE AILERON EFFECTIVENESS AND DRAG OF A THIN RECTANGULAR WING EMPLOYING A FULL-SPAN PLAIN AILERON AT MACH NUMBERS FROM 0.6 TO 1.5. Roland D. English. November 1953. 16p. diagrs., photos. (NACA RM L53125)


EFFECT ON THE LOW-SPEED AERODYNAMIC CHARACTERISTICS OF A 49° SWEPTBACK WING HAVING AN ASPECT RATIO OF 3.78 OF BLOWING AIR OVER THE TRAILING-EDGE FLAP AND AILERON. Edward F. Whittle, Jr., and Stanley Lipson. April 1954. 51p. diagrs., photo., tab. (NACA RM L54C05)


GROUND EFFECTS ON THE LONGITUDINAL CHARACTERISTICS OF TWO MODELS WITH WINGS HAVING LOW ASPECT RATIO AND POINTED TIPS. Donald A. Buell and Bruce E. Tinning. July 1956. 48p. diagrs., photos., tabs. (NACA RM A56E04)

GROUND EFFECTS ON THE LONGITUDINAL CHARACTERISTICS OF TWO MODELS WITH WINGS HAVING LOW ASPECT RATIO AND POINTED TIPS. Donald A. Buell and Bruce E. Tinning. July 1956. 48p. diagrs., photos., tabs. (NACA RM A56E04)

SOME EFFECTS OF LEADING-EDGE ROUGHNESS ON THE AILERON EFFECTIVENESS AND DRAG OF A THIN RECTANGULAR WING EMPLOYING A FULL-SPAN PLAIN AILERON AT MACH NUMBERS FROM 0.6 TO 1.5. Roland D. English. November 1953. 16p. diagrs., photos. (NACA RM L53125)


WIND-TUNNEL INVESTIGATION OF AN EXTERNAL-FLOW JET-AUGMENTED SLOTTED FLAP SUITABLE FOR APPLICATION TO AIRPLANES WITH POD-MOUNTED JET ENGINES. John P. Campbell and Joseph L. Johnson, Jr. December 1955. 47p. diagrs., tab. (NACA TN 3898)


AN INVESTIGATION AT SUBSONIC SPEEDS OF THE ROLLING EFFECTIVENESS OF A SMALL PERFORATED SPOILER ON A WING HAVING 45° OF SWEEPBACK. Angelo Bandettini. September 1952. 31p. diagrs., photos. (NACA RM A52G02)

SOME EFFECTS OF SPOILER HEIGHT, WING FLEXIBILITY, AND WING THICKNESS ON ROLLING EFFECTIVENESS AND DRAG OF UNSWEPT WINGS AT MACH NUMBERS BETWEEN 0.4 AND 1.7. E. M. Fields. October 1952. 20p. diagrs., photo. (NACA RM L52H18)

CONTROL CHARACTERISTICS OF TRAILING-EDGE SPOILERS ON UNTAPERED BLUNT TRAILING-EDGE WINGS OF ASPECT RATIO 2.7 WITH 0° AND 45° SWEEPBACK AT MACH NUMBERS OF 1.41 AND 1.96. Carl R. Jacobsen. December 1952. 31p. diagrs., photo. (NACA RM L52228)


FLIGHT INVESTIGATION OF THE ROLLING EFFECTIVENESS OF FINGERED SEMAPHORE SPOILERS ON A TAPERED 45° SWEETBACK WING BETWEEN MACH NUMBERS 0.6 AND 1.3. James D. Church. January 1954. 27p. diagrs., photos. (NACA RM L53K20)


A WIND-TUNNEL INVESTIGATION AT HIGH SUBSONIC SPEEDS OF THE LATERAL CONTROL CHARACTERISTICS OF VARIOUS PLAIN SPOILER CONFIGURATIONS ON A 3-PERCENT-THICK 60° DELTA WING. Harlieth G. Wiley. May 1954. 45p. diagrs., tabs. (NACA RM L54D01)


(1) AERODYNAMICS

(1.2.2.4.3) All-Movable


FLIGHT INVESTIGATION TO DETERMINE LIFT AND DRAG CHARACTERISTICS OF A CANARD RAM-JET MISSILE CONFIGURATION IN THE MACH NUMBER RANGE OF 0.8 TO 2.0. Abraham A. Gammal and Thomas L. Kennedy. June 1954. 20p. diagrs., photos. (NACA RM L54I28)


(1.2.2.5) REYNOLDS NUMBER EFFECTS

AERODYNAMIC STUDY OF A WING-FUSELAGE COMBINATION EMPLOYING A WING SWEEP BACK 63°. - INVESTIGATION AT A MACH NUMBER OF 1.53 TO DETERMINE THE EFFECTS OF CAMBERING AND TWISTING THE WING FOR UNIFORM LOAD AT A LIFT COEFFICIENT OF 0.25. Robert T. Madden. May 6, 1949. 33p. diagrs., photo., tabs. (NACA RM A50C07)


AERODYNAMIC STUDY OF A WING-FUSELAGE COMBINATION EMPLOYING A WING SWEEP BACK 63° - EFFECT OF REYNOLDS NUMBER AT SUBSONIC MACH NUMBERS ON THE LONGITUDINAL CHARACTERISTICS OF A WING TWISTED AND CAMBERED FOR UNIFORM LOAD. John C. Heitmeyer. October 9, 1950. 36p. diagrs., photo. (NACA RM A50G01)


LIFT, DRAG, AND PITCHING MOMENT OF LOW-ASPECT-RATIO WINGS AT SUBSONIC AND SUPERSONIC SPEEDS - PLANЕ TRIАNGULAR WING OF ASPECT RATIO 2 WITH NACA 0005-63 SECTION.
Donald W. Smith and John C. Heitmeyer.
February 1, 1951. 25p. diagrs., photo. (NACA RM A50K21)

LIFT, DRAG, AND PITCHING MOMENT OF LOW-ASPECT-RATIO WINGS AT SUBSONIC AND SUPERSONIC SPEEDS - PLANE TRIАNGULAR WING OF ASPECT RATIO 4 WITH NACA 0005-63 SECTION.
John C. Heitmeyer and Jack D. Stephenson.
February 2, 1951. 21p. diagrs., photo. (NACA RM A50K24)

LIFT, DRAG, AND PITCHING MOMENT OF LOW-ASPECT-RATIO WINGS AT SUBSONIC AND SUPERSONIC SPEEDS - PLANЕ TRIАNGULAR WING OF ASPECT RATIO 2 WITH NACA 0003-63 SECTION.
John C. Heitmeyer and Willard G. Smith.
February 2, 1951. 22p. diagrs., photo. (NACA RM A50K24a)

A COMPARISON OF THE CHORDWISE PRESSURE DISTRIBUTION AND SPANWISE DISTRIBUTION OF LOADING AT SUBSONIC SPEEDS ON TWO TRIАNGULAR WINGS OF ASPECT RATIO 3 HAVING NACA 0005 AND 0008 SECTIONS.
Donald W. Smith and Verlin D. Reed.
May 1952. 143p. diagrs., photos., tabs. (NACA RM A532D23)

LIFT, DRAG, AND PITCHING MOMENT OF LOW-ASPECT-RATIO WINGS AT SUBSONIC AND SUPERSONIC SPEEDS - PLANE TAPERED WING OF ASPECT RATIO 3.1 WITH 3-PERCENT-THICK BICONVEX SECTION.
Duane W. Dugan.
July 1952. 34p. diagrs., photos., tab. (NACA RM A52E01)

AN INVESTIGATION AT SUBSONIC SPEEDS OF THE ROLLING EFFECTIVENESS OF A SMALL PERFORATED SPOILER ON A WING HAVING 45° OF SWEEPBACK.
Angelo Bandettini.
September 1952. 37p. diagrs., photos. (NACA RM A52G02)

INVESTIGATION AT A MACH NUMBER OF 1.2 OF TWO 45° SWEEPBACK WINGS UTILIZING NACA 2-006 AND NACA 65A006 AIRFOIL SECTIONS.
Homer B. Wilson, Jr.
September 1952. 20p. diagrs., photo., tab. (NACA RM L52G17)

LIFT, DRAG, AND PITCHING MOMENT OF LOW-ASPECT-RATIO WINGS AT SUBSONIC AND SUPERSONIC SPEEDS - COMPARISON OF THREE WINGS OF ASPECT RATIO 2 OF RECTANGULAR, SWEEPBACK, AND TRIАNGULAR PLAN FORM, INCLUDING EFFECTS OF THICKNESS DISTRIBUTION.
Ronald C. Hightower.
February 1953. 35p. diagrs., tabs. (NACA RM A52L02)

SUBSONIC STATIC LONGITUDINAL STABILITY AND CONTROL CHARACTERISTICS OF A WING-BODY COMBINATION HAVING A POINTED WING OF ASPECT RATIO 2 WITH CONSTANT-PERCENT CHORD TRAILING-EDGE ELEVONS.
Donald W. Smith and Verlin D. Reed.
May 1953. 134p. diagrs., photos., tab. (NACA RM A53C20)
(1) AERODYNAMICS


AERODYNAMIC CHARACTERISTICS OF A 66.4° DELTA WING AT MACH NUMBERS OF 1.0 AND 1.9 OVER A RANGE OF REYNOLDS NUMBER RANGE. John E. Hatch, Jr., and James J. Gallagher. November 1953. 44p. diagrs., photos., tabs. (NACA RM L5308)


A LOW-SPEED INVESTIGATION OF THE AERODYNAMIC, CONTROL, AND HINGE-MOMENT CHARACTERISTICS OF TWO TYPES OF CONTROLS AND BALANCING TABS ON A LARGE-SCALE THIN DELTA-WING-FUSELAGE MODEL. Marvin P. Fink and Bennie W. Cocke. March 1954. 69p. diagrs., photo., tabs. (NACA RM L54B03)

A COMPARISON OF THE LONGITUDINAL AERODYNAMIC CHARACTERISTICS AT MACH NUMBERS UP TO 0.94 OF SWEEPBACK WINGS HAVING NACA 4-DIGIT OR NACA 64A THICKNESS DISTRIBUTIONS. Fred B. Sutton and Jerald K. Dickson. August 1954. 67p. diagrs., tabs. (NACA RM A54F18)


HYDRODYNAMIC CHARACTERISTICS OVER A RANGE OF SPEEDS UP TO 80 FEET PER SECOND OF A RECTANGULAR MODIFIED FLAT PLATE HAVING AN ASPECT RATIO OF 0.25 AND OPERATING AT SEVERAL DEPTHS OF SUBMERSION. Victor L. Vaughan, Jr., and John A. Ramsen. April 1957. 25p. diagrs. (NACA TN 3908)

(1.2.2.6) MACH NUMBER EFFECTS

FLIGHT-TEST EVALUATION OF THE LONGITUDINAL STABILITY AND CONTROL CHARACTERISTICS OF 0.5-SCALE MODELS OF THE LARK PILOTLESS- AIRCRAFT CONFIGURATION. David G. Stone. February 6, 1948. 60p. diagrs., photos., tabs. (NACA RM L7126)


TABULATED PRESSURE COEFFICIENTS AND AERODYNOMIC CHARACTERISTICS MEASURED ON THE WING OF THE BELL X-1 AIRPLANE IN LEVEL FLIGHT AT MACH NUMBERS FROM 0.79 TO 1.00 AND IN A PULL-UP AT A MACH NUMBER OF 0.96. H. Arthur Carner and Mary M. Payne. September 18, 1950. 43p. diagrs., photos., tabs. (NACA RM L50H25)


BUFFETTING INFORMATION OBTAINED FROM ROCKET-PROPELLED AIRPLANE MODELS HAVING THIN UNSWEPT WINGS. Clarence L. Gillis. October 18, 1950. 15p. diagrs., photos. (NACA RM L50H22a)


LIFT, DRAG, AND PITCHING MOMENT OF LOW-ASPECT-RATIO WINGS AT SUBSONIC AND SUPER-Sonic SPEEDS - PLANE 45° SWEEP-BACK WING OF ASPECT RATIO 5, TAPER RATIO 0.6 WITH 3-PERCENT-THICK, BICONVEX SECTION. John C. Heitmeyer. September 1951. 20p. diagrs. (NACA RM A51H10)
# 1) Aerodynamics

**Tabulated Pressure Coefficients and Aerodynamic Characteristics Measured on the Wing of the Bell X-1 Airplane in an Unaccelerated Low-Speed Stall, in Pushovers at Mach Numbers of 0.83 and 0.99, and in a Pull-Up at a Mach Number of 1.16.**

Ronald J. Knapp. September 1951. 53p. diagrams, photos, tabs. (NACA RM LS1F29)

**Damping in Roll of Rocket-Powered Test Vehicles Having Swept, Tapered Wings of Low Aspect Ratio.**

E. Claude Sanders, Jr., and James L. Edmondson. October 1951. 25p. diagrams, photos, tabs. (NACA RM LS1G06)

**Wind-Tunnel Investigation at Transonic Speeds of a Leading-Edge Slat on a Modified-Double-Wedge Wing.**

Richard G. MacLeod. December 1951. 12p. diagrams. (NACA RM LS1J22a)

**Recent Data on Controls.**


**Characteristics of Swept Wings at High Speeds.**


**Some Effects of Aeroelasticity at Mach Numbers from 0.7 to 1.6 on the Rolling Effectiveness of Thin Flat-Plate Delta Wings Having 45\(^\circ\) Swept Leading Edges and Full-Span Constant-Chord Ailerons.**


**A Comparison of the Chordwise Pressure Distribution and Spanwise Distribution of Loading at Subsonic Speeds on Two Triangular Wings of Aspect Ratio 2 Having NACA 0005 and 0008 Sections.**

Donald W. Smith and Verlin D. Reed. May 1952. 142p. diagrams, photos, tabs. (NACA RM AS1L21)

**Aerodynamic Characteristics of Two Plane, Unswept Tapered Wings of Aspect Ratio 3 and 3-Percent Thickness from Tests on Transonic Bump.**

Horace F. Emerson and Bernard M. Gale. May 1952. 55p. diagrams, photos. (NACA RM AL2C07)

**Longitudinal Stability and Drag Characteristics at Mach Numbers from 0.70 to 1.37 of Rocket-Powered Modified Model Having a Modified Triangular Wing.**

Rowe Chapman, Jr., and John D. Morrow. May 1952. 35p. diagrams, photos, tabs. (NACA RM LS2A31)

**Lift, Drag, and Pitching Moment of Low-Aspect-Ratio Wings at Subsonic and Supersonic Speeds - Plane Triangular Wing of Aspect Ratio 3 with Air-To-Air Missile.**

Donald Conrad. June 1952. 28p. diagrams, photo. (NACA RM AS2C10a)

**Aerodynamic Characteristics of Two 25-Percent-Area Trailing-Edge Flaps on an Aspect Ratio 2 Triangular Wing at Subsonic and Supersonic Speeds.**

John W. Boyd. July 1952. 82p. diagrams, photos, tabs. (NACA RM AS2D01c)

**Transonic Aerodynamic Characteristics of Three Thin Triangular Wings and a Trapezoidal Wing, All of Low Aspect Ratio.**


**Effects of Three Types of Blunt Trailing Edges on the Aerodynamic Characteristics of a Plane Tapered Wing of Aspect Ratio 3.1.**

Wane W. Dugan. July 1952. 34p. diagrams. (NACA RM AS2E01)

**Transonic Aerodynamic Characteristics of Three W-Plan-Form Wings Having Aspect Ratio 8, Taper Ratio 0.45, and NACA 63a-Series Airfoil Sections.**

William D. Morrison, Jr. July 1952. 30p. diagrams, photo. (NACA RM LS2E14a)

**A Summary and Analysis of the Low-Speed Longitudinal Characteristics of Swept Wings at High Reynolds Number.**


**An Investigation at Subsonic Speeds of the Rolling Effectiveness of a Small Perforated Spoiler on a Wing Having 45\(^\circ\) of a Sweepback.**

Angelo Bandettini. September 1952. 37p. diagrams, photos. (NACA RM AS2G02)

**Aerodynamic Characteristics of a 45\(^\circ\) Sweptback Wing-Fuselage Combination and the Fuselage Alone Obtained in the Langley 8-Foot Transonic Tunnel.**

Robert S. Osborne and John P. Mugler, Jr. September 1952. 11p. diagrams, photos, tabs. (NACA RM LS2E14)

AERODYNAMIC LOAD MEASUREMENTS OVER A LEADING-EDGE SLAT ON A 40° SWEPTBACK WING AT MACH NUMBERS FROM 0.10 TO 0.91. Jones F. Caill and Robert J. Nuber. September 1952. 32p. diags., photos., tab. (NACA RM L52G18a)

ROCKET-MODEL INVESTIGATION TO DETERMINE THE FORCE AND HINGE-MOMENT CHARACTERISTICS OF A HALF-DELTA TIP CONTROL ON A 60° SWEPTBACK DELTA WING BETWEEN MACH NUMBERS OF 0.55 AND 1.43. C. William Martz, James D. Church, and John W. Goslee. October 1952. 53p. diags., photos., tab. (NACA RM L52H06)

SOME EFFECTS OF SPOILER HEIGHT, WING FLEXIBILITY, AND WING THICKNESS ON ROLLING EFFECTIVENESS AND DRAG OF UNSWEPT WINGS AT MACH NUMBERS BETWEEN 0.4 AND 1.7. E. M. Fields. October 1952. 20p. diags., photo. (NACA RM L52H18)


TRANSONIC WIND-TUNNEL INVESTIGATION OF THE AERODYNAMIC CHARACTERISTICS OF A 60° TRIANGULAR WING IN COMBINATION WITH A SYSTEMATIC SERIES OF THREE BODIES. Thomas C. Kelly. April 1953. 25p. diags., photo. (NACA RM L52L22a)
(1) AERODYNAMICS

EFFECT OF LEADING-EDGE CHORD-EXTENSIONS ON THE AERODYNAMIC CHARACTERISTICS OF A 45° SWEPTBACK WING-FUSELAGE COMBINATION AT MACH NUMBERS FROM 0.40 TO 1.03. F. E. West, Jr., George Liner, and Gladys S. Marts. April 1953. 40p. diagrs., photo. (NACA RM L53B02)


TRANSONIC AERODYNAMIC CHARACTERISTICS IN PITCH OF A W-WING HAVING 60° 48° PANEL SWEEP, ASPECT RATIO 3.5, AND TAPER RATIO 0.25. William D. Morrison, Jr. August 1953. 18p. diagrs., photo. (NACA RM L53F32)


INVESTIGATION OF THE EFFECTS OF LEADING-EDGE FLAPS ON THE AERODYNAMIC CHARACTERISTICS IN PITCH AT MACH NUMBERS FROM 0.40 TO 0.93 OF A WING-FUSELAGE CONFIGURATION WITH A 45° SWEPTBACK WING OF ASPECT RATIO 4. Kenneth P. Spreemann and William J. Alford, Jr. August 1953. 36p. diagrs., photo., tabs. (NACA RM L53G13)


SOME EFFECTS OF LEADING-EDGE ROUGHNESS ON THE AILERON EFFECTIVENESS AND DRAG OF A THIN RECTANGULAR WING EMPLOYING A FULL-SPAN PLAIN AILERON AT MACH NUMBERS FROM 0.6 TO 1.5. Roland D. English. November 1953. 16p. diagrs., photos. (NACA RM L53J25)


CALCULATED LATERAL FREQUENCY RESPONSE AND LATERAL OSCILLATORY CHARACTERISTICS FOR SEVERAL HIGH-SPEED AIRPLANES IN VARIOUS FLIGHT CONDITIONS. Byron M. Jaquet. December 1953. 72p. diagrs., tabs. (NACA RM L53J01)


FLIGHT INVESTIGATION OF THE ROLLING EFFECTIVENESS OF FINGERED SEMAPHORE SPOILERS ON A TAPERED 45° SWEEPBACK WING BETWEEN SUBSONIC SPEEDS OF 0.6 AND 1.3. James D. Church. January 1954. 27p. diagrs., photos. (NACA RM L53K20)


ROCKET-POWERED-MODEL INVESTIGATION OF THE HINGE-MOMENT AND NORMAL-FORCE CHARACTERISTICS OF A HALF-DIAMOND TIP CONTROL ON A 60° SWEEPBACK DIAMOND WING BETWEEN MACH NUMBERS OF 0.5 AND 1.3. James D. Church. April 1954. 30p. diagrs., photos., tab. (NACA RM L54C10)


A WIND-TUNNEL INVESTIGATION AT HIGH SUBSONIC SPEEDS OF THE LATERAL CONTROL CHARACTERISTICS OF SEVERAL PLAN SPOILER CONFIGURATIONS ON A 3-PERCENT-THICK 60° DELTA WING. Harleth G. Wiley. May 1954. 45p. diagrs., tabs. (NACA RM L54D01)

SUBSONIC FLIGHT INVESTIGATION OF METHODS TO IMPROVE THE DAMPING OF LATERAL OSCILLATIONS BY MEANS OF A VISCID DAMPER IN THE RUDDER SYSTEM IN CONJUNCTION WITH ADJUSTED HINGE-MOMENT PARAMETERS. Harold L. Crane, George J. Hurt, Jr., and John M. Elliott. June 1954. 46p. diagrs., photos., tab. (NACA RM L54D09)

FLIGHT INVESTIGATION OF AN AILERON AND A SPOILER ON A WING OF THE X-3 AIRPLANE PLAN FORM AT MACH NUMBERS FROM 0.5 TO 1.6. Roland D. English. June 1954. 16p. diagrs., photos. (NACA RM L54D26a)

A COMPARISON OF THE LONGITUDINAL AERODYNAMIC CHARACTERISTICS AT MACH NUMBERS UP TO 0.94 OF SWEEPBACK WINGS HAVING NACA 4-DIGIT OR NACA 64A006 AIRFOIL SECTION DISTRIBUTIONS. Fred B. Sutton and Jerald K. Dickson. August 1954. 67p. diagrs., tab. (NACA RM A54F18)

PRESSURE DISTRIBUTIONS ON PLUG- AND SEMAPHORE-TYPE SPOILER AILERONS ON A 35° SWEEPBACK WING OF ASPECT RATIO 4, TAPER RATIO 0.6, AND NACA 65A006 AIRFOIL SECTION AT HIGH SUBSONIC SPEEDS. Alexander D. Hammond and William C. Hayes, Jr. August 1954. 55p. diagrs., tabs. (NACA RM L54F08)

A FLIGHT STUDY OF COMPRESSIBILITY EFFECTS ON THE GUST LOADS OF A 30° SWEEPBACK-WING AIRPLANE. Harry C. Mickieboro and Jack Funk. August 1954. 23p. diagrs., tabs. (NACA RM L54G09a)


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### 1.2.7 Wake

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PRESSURE DISTRIBUTION AT LOW SPEED ON A MODEL INCORPORATING A WING WITH ASPECT RATIO 6, 45° SWEET, TAPER RATIO 0.6, AND AN NACA 65A006 AIRFOIL SECTION. Edward C. Polhamus and Albert G. Few, Jr. August 1952. 46p. diagrs., photo. (NACA RM L52F11)


(1.2.2.8) BOUNDARY LAYER


THE HYDRODYNAMIC CHARACTERISTICS OF MODIFIED RECTANGULAR FLAT PLATES HAVING ASPECT RATIOS OF 1.0, 0.25, AND 0.125 AND OPERATING NEAR A FREE WATER SURFACE. Kenneth L. Wadlin, John A. Ramsen, and Victor L. Vaughan, Jr. 1953. ii, 50p. diagrs., photos. (NACA Rept. 1246. Supersedes TN 3079, TN 3249)


(1.2.2.8.1) Characteristics

AERODYNAMIC CHARACTERISTICS OF A 68.4° DELTA-WING AT MACH NUMBERS OF 1.6 AND 1.9 OVER A WIDE REYNOLDS NUMBER RANGE. John E. Hatch, Jr., and James J. Gallagher. November 1953. 44p. diagrs., photos., tabs. (NACA RM L53108)

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NOTE ON SOME OBSERVED EFFECTS OF ROCKET-MOTOR operation ON THE BASE PRESSURES OF BODIES IN FREE FLIGHT. Paul E. Purser, Joseph G. Tibboudaux, and H. Herbert Jackson. November 16, 1950. 28p. diagrs., tabs. (NACA RM L50118)


OBSERVATIONS OF UNSTEADY FLOW PHENOMENA FOR AN INCLINED BODY FITTED WITH STABILIZING FINS. Merrill H. Mead. January 1952. 23p. diagrs., photos. (NACA RM A51K05)

AERODYNAMIC INTERFERENCE EFFECTS ON NORMAL AND AXIAL FORCE COEFFICIENTS OF SEVERAL ENGINE-STRUT-BODY CONFIGURATIONS AT MACH NUMBERS OF 1.8 AND 2.0. Emil J. Kremzier and Murray Dryer. April 1952. 35p. diagrs., tab. (NACA RM E52B21)


ON STOKES' STREAM FUNCTION IN COMPRESSIBLE SMALL-DISTURBANCE THEORY. Milton D. Van Dyke. February 1957. 15p. diagrs. (NACA TN 3977)

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(1.3.2) SHAPE VARIABLES

FLIGHT INVESTIGATION OF THE DRAG OF ROUND-NOSED BODIES OF REVOLUTION AT MACH NUMBERS FROM 0.6 TO 1.5 USING ROCKET-PROPELLED TEST VEHICLES. Roger G. Hart. July 1951. 9p. diagrs., photos. (NACA RM L51E25)

FLOW SEPARATION FROM RODS AHEAD OF BLUNT NOSES AT MACH NUMBER 2.72. Jim J. Jones. July 1952. 18p. diagrs., photos. (NACA RM L52E05a)

BUFFETING OF A VERTICAL TAIL ON AN INCLINED BODY AT SUPERSONIC MACH NUMBERS. Forrest E. Gowen. March 1953. 35p. diagrs., photos., tab. (NACA RM A53A09)


MINIMUM-DRAG DUCTED AND CLOSED THREE-POINT BODY OF REVOLUTION BASED ON LINEARIZED SUPERSONIC THEORY. Hermann M. Parker. December 1956. 20p. diagrs., tab. (NACA TN 3704)


TABLES OF CHARACTERISTIC FUNCTIONS FOR SOLVING BOUNDARY-VALUE PROBLEMS OF THE WAVE EQUATION WITH APPLICATION TO SUPERSONIC INTERFERENCE. Jack N. Nielsen. February 1957. 245p. diagrs., tabs. (NACA TN 3873)


(1.3.2.1) FINENESS RATIO

SOME EFFECTS OF FIN PLAN FORM ON THE STATIC STABILITY OF FIN-BODY COMBINATIONS AT MACH NUMBER 4.06. Edward F. Ulmann and Robert W. Dunning. July 1952. 20p. diagrs., photos. (NACA RM L52D15a)


EXPERIMENTAL STEADY-STATE YAWING DERIVATIVES OF A 60° DELTA-WING MODEL AS AFFECTED BY CHANGES IN VERTICAL POSITION OF THE WING AND IN RATIO OF FUSELAGE DIAMETER TO WING SPAN. Byron M. Jaquet and Herman S. Fletcher. October 1956. 20p. diagrs., tab. (NACA TN 3843)

EFFECTS OF FUSELAGE NOSE LENGTH AND A CANOPY ON THE STATIC LONGITUDINAL AND LATERAL STABILITY CHARACTERISTICS OF 45° SWEEPBACK AIRPLANE MODELS HAVING FUSELAGES WITH SQUARE CROSS SECTIONS. Byron M. Jaquet and H. S. Fletcher April 1957. 47p. diagrs., photos., tabs. (NACA TN 3961)

(1.3.2.2) CROSS SECTION

EFFECT OF VERTICAL POSITION OF THE WING ON THE AERODYNAMIC CHARACTERISTICS OF THREE WING-BODY COMBINATIONS. John C. Heitmeyer. February 1953. 56p. diagrs., photo., tabs. (NACA RM A52L15a)


EFFECTS OF FUSELAGE NOSE LENGTH AND A CANOPY ON THE STATIC LONGITUDINAL AND LATERAL STABILITY CHARACTERISTICS OF 45° SWEEPBACK AIRPLANE MODELS HAVING FUSELAGES WITH SQUARE CROSS SECTIONS. Byron M. Jaquet and H. S. Fletcher. April 1957. 47p. diagrs., photos., tabs. (NACA TN 3961)
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FLIGHT INVESTIGATION OF THE DRAG OF ROUND-NOSED BODIES OF REVOLUTION AT MACH NUMBERS FROM 0.6 TO 1.5 USING ROCKET-PROPELLED TEST VEHICLES. Roger G. Hart. July 1951. 9p. diagrs., photos., tab. (NACA RM L51E25)


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ZERO-LIFT DRAG OF A SERIES OF BOMB SHAPES AT MACH NUMBERS FROM 0.60 TO 1.10. William E. Stoney, Jr., and John F. Royall. July 1956. 12p. diagrs., photos., tabs. (NACA RM L56D16)

(1.3.2.5) PROTUBERANCES


PRELIMINARY INVESTIGATION OF USE OF CONICAL FLOW SEPARATION FOR EFFICIENT SUPERSONIC DIFFUSION. W. E. Moeckel and P. J. Evans, Jr. December 1951. 15p. photos., diagrs. (NACA RM E51J08)

AERODYNAMIC INTERFERENCE EFFECTS ON NORMAL AND AXIAL FORCE COEFFICIENTS OF SEVERAL ENGINE-STRUT-BODY CONFIGURATIONS AT MACH NUMBERS OF 1.8 AND 2.0. Emil J. Kremzier and Murray Dryer. April 1952. 35p. diagrs., tabs. (NACA RM E52B21)

FLOW SEPARATION FROM RODS AHEAD OF BLUNT NOSES AT MACH NUMBER 2.72. Jim J. Jones. July 1952. 18p. diagrs., photos. (NACA RM L52E05a)


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EFFECTS OF FUSELAGE NOSE LENGTH AND A CANOPY ON THE STATIC LONGITUDINAL AND LATERAL STABILITY CHARACTERISTICS OF 450 SWEPTBACK AIRPLANE MODELS HAVING FUSELAGES WITH SQUARE CROSS SECTIONS. Byron M. Jaquet and H. S. Fletcher. April 1957. 47p. diagrs., photos., tabs. (NACA TN 3961)

(1.3.4) DUCTED BODIES


PRELIMINARY INVESTIGATION OF USE OF CONICAL FLOW SEPARATION FOR EFFICIENT SUPERSONIC DIFFUSION. W. E. Moeckel and P. J. Evans, Jr. December 1951. 15p. photos., diagrs. (NACA RM E51J08)


MINIMUM-DRAG DUCTED AND CLOSED THREE-POINT BODY OF REVOLUTION BASED ON LINEARIZED SUPERSONIC THEORY. Hermon M. Parker. December 1956. 20p. diagrams, tables. (NACA TN 3704)

FLIGHT INVESTIGATION OF THE DRAG OF BODIES OF REVOLUTION AT MACH NUMBERS FROM 0.6 TO 1.5 USING ROCKET-PROPELLED TEST VEHICLES. Roger G. Hart. July 1951. 9p. diagrams, photos, table. (NACA RM L51E25)

FLIGHT DETERMINATION OF DRAG AND PRESSURE RECOVERY OF A NOSE INLET OF PARABOLIC PROFILE AT MACH NUMBERS FROM 0.8 TO 1.7. Richard I. Sears and C. F. Merlet. October 1951. 22p. diagrams, photo. (NACA RM L51E02)


FLIGHT DETERMINATION OF DRAG OF NORMAL-SHOCK NOSE INLETS WITH VARIOUS COWLING PROFILES AT MACH NUMBERS FROM 0.9 TO 1.5. R. I. Sears, C. F. Merlet, and L. W. Putland. 1956. ii, 19p. diagrams, photos, tables. (NACA Rept. 1281. Supersedes RM L53I25a)

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MEASUREMENTS AND PREDICTIONS OF FLOW CONDITIONS ON A TWO-DIMENSIONAL BASE SEPARATING A MACH NUMBER 3.36 JET AND A MACH NUMBER 1.55 OUTER STREAM. Donald E. Coletti. May 1954. 56p. diagrs., photos. (NACA RM L54C08)

ATTENUATION IN A SHOCK TUBE DUE TO UNSTEADY-BOUNDARY-LAYER ACTION. Harold Mirels. August 1953. 66p. diagrs. (NACA TN 3278)


(1.4.1) AIR INLETS


PERFORMANCE COMPARISON OF THREE CANARD-TYPE RAM-JET MISSILE CONFIGURATIONS AT MACH NUMBERS FROM 1.5 TO 2.0. Evan A. Fradenburgh and Emil J. Kremzier. August 1953. 31p. diagrs., tabs. (NACA RM E53P11)


IMPINGEMENT OF DROPLETS IN 60\(^\circ\) ELBOWS WITH POTENTIAL FLOW. Paul T. Hacker, Paul G. Saper, and Charles F. Kadow. October 1956. 54p. diagrs., tabs. (NACA TN 3770)


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EXPERIMENTAL INVESTIGATION OF THE EFFECT OF ENTRANCE WIDTH-TO-HEIGHT RATIO ON THE PERFORMANCE OF AN AUXILIARY SCOOPE-TYPE INLET AT MACH NUMBERS FROM 0 TO 1.5. George B. Brajinikoff and John F. Stroud. July 1953. 16p. diagrs., photos. (NACA RM A53E28)


FLIGHT DETERMINATION OF DRAG OF NORMAL-SHOCK NOSE INLETS WITH VARIOUS COWLING PROFILES AT MACH NUMBERS FROM 0.9 TO 1.5. R. I. Sears, C. F. Merlet, and L. W. Putland. 1956. 11p. diagrs., photos., tabs. (NACA Rept. 1281. Supersedes RM L53I25a)

(1.4.1.1.1) Propeller-Spinner-Cowl Combinations

EFFECT OF ROTATION OF AN NACA 1-SERIES E-TYPE COWLING ON THE INTERNAL FLOW AND FORCE CHARACTERISTICS OF THE COWLING AT MACH NUMBERS UP TO 0.84 AND AT AN ANGLE OF ATTACK OF \(0^\circ\). Robert I. Sammonds and Robert M. Reynolds. October 1954. 54p. diagrs., photos., tabs. (NACA RM A54G14)


(1.4.1.1.2) Subsonic

EFFECT OF ROTATION OF AN NACA 1-SERIES E-TYPE COWLING ON THE INTERNAL FLOW AND FORCE CHARACTERISTICS OF THE COWLING AT MACH NUMBERS UP TO 0.84 AND AT AN ANGLE OF ATTACK OF 0°. Robert I. Sammonds and Robert M. Reynolds. October 1954. 54p. diagrs., photos., tabs. (NACA RM A54G14)

(1.4.1.1.3) Supersonic

FLIGHT DETERMINATION OF DRAG AND PRESSURE RECOVERY OF A NOSE INLET OF PARABOLIC PROFILE AT MACH NUMBERS FROM 0.8 TO 1.7. Richard I. Sears and C. F. Merlet. October 1951. 22p. diagrs., photo. (NACA RM L51E02)


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PRELIMINARY INVESTIGATION OF USE OF CONICAL FLOW SEPARATION FOR EFFICIENT SUPERSONIC DIFFUSION. W. E. Moeckel and P. J. Evans, Jr. December 1951. 15p. photos., diagrs. (NACA RM E51J08)


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AN INVESTIGATION AT TRANSonic SPEEDS OF THE AERODYNAMIC CHARACTERISTICS OF AN AIR INLET INSTALLED IN THE ROOT OF A 45° SWEEP-BACK WING. Robert R. Howell and Arvid L. Keith, Jr. October 1952. 47p. diagrs., photos., tabs. (NACA RM L52H08a)
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AN INVESTIGATION AT TRANSONIC SPEEDS OF THE AERODYNAMIC CHARACTERISTICS OF AN AIR INLET INSTALLED IN THE ROOT OF A 45° SWEPT-BACK WING. Robert R. Howell and Arvid L. Keith, Jr. October 1952. 47p. diagrs., photos., tabs. (NACA RM L52H06a)


FLIGHT DETERMINATION OF DRAG AND PRESSURE RECOVERY OF A NOSE INLET OF PARABOLIC PROFILE AT MACH NUMBERS FROM 0.8 TO 1.7. Richard L. Sears and C. F. Merlet. October 1951. 22p. diagrs., photo. (NACA RM L51E02)


EFFECTS OF COMBINING AUXILIARY BLEED WITH EJECTOR PUMPING ON THE POWER REQUIREMENTS AND TEST-SECTION FLOW OF AN 8-INCH BY 8-INCH SLOTTED TUNNEL. B. H. Little, Jr., and James M. Cubbage, Jr. July 1955. 44p. diagrs., photo. (NACA RM L55E29)


THE INFLUENCE OF VORTEX GENERATORS ON THE PERFORMANCE OF A SHORT 1.9:1 STRAIGHT-WALL ANNULAR DIFFUSER WITH A WHIRLING INLET FLOW. Charles C. Wood and James T. Higginbotham. February 1953. 38p. diagrs., photo., tab. (NACA RM L52L01a)

(1) AERODYNAMICS


EXPLORATORY INVESTIGATION OF THE USE OF AIR INJECTION AT THE INTERFACE OF AIR FLOW SEPARATION IN DIFFUSERS HAVING LARGE EXPANSION ANGLES. Curt A. Holzhauser and Leo P. Hall. October 1956. 18p. diags. (NACA TN 3793)


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Supersonic

PRELIMINARY INVESTIGATION OF USE OF CONICAL FLOW SEPARATION FOR EFFICIENT SUPERSONIC DIFFUSION. W. E. Moeckel and P. J. Evans, Jr. December 1951. 15p. photos., diags. (NACA RM E51J06)


PERFORMANCE COMPARISON OF THREE CANARD-TYPE RAM-JET MISSILE CONFIGURATIONS AT MACH NUMBERS FROM 1.5 TO 2.0. Evan A. Frazen and Emil J. Kremzier. August 1953. 31p. diags., tabs. (NACA RM E53F11)


1.4.2.2

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EFFECT OF PROPERTIES OF PRIMARY FLUID ON PERFORMANCE OF CYLINDRICAL SHROUD EJECTORS. Fred D. Kochendorfer. March 1954. 32p. diagrs. (NACA RM E53L24a)

NOTE ON PERFORMANCE OF AIRCRAFT EJECTOR NOZZLES AT HIGH SECONDARY FLOWS. Fred D. Kochendorfer. August 1954. 20p. diagrs. (NACA RM E54F17a)


(1. 4. 2. 3) PIPES


CHARTS FOR THE ANALYSIS OF FLOW IN A WHIRLING DUCT. Robert A. Makowski. May 1957. 21p. diagrs. (NACA TN 3950)

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EFFECT OF PROPERTIES OF PRIMARY FLUID ON PERFORMANCE OF CYLINDRICAL SHROUD EJECTORS. Fred D. Kochendorfer. March 1954. 32p. diagrs. (NACA RM E53L24a)


NOTE ON PERFORMANCE OF AIRCRAFT EJECTOR NOZZLES AT HIGH SECONDARY FLOWS. Fred D. Kochendorfer. August 1954. 20p. diagrs. (NACA RM E54F17a)


AN EXPERIMENTAL INVESTIGATION OF STRING- 
SUPPORT EFFECTS ON DRAG AND A COMPARISON 
WITH JET EFFECTS AT TRANSONIC SPEEDS. 
Maurice S. Cahn. September 1956. 67p. diagrs., 
tabs. (NACA RM L67F18a)

PERFORMANCE CHARACTERISTICS OF RING- 
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McArdle. November 1956. 53p. diagrs., photos., 
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Morris D. Rousse and L. Eugene Baughman. 
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(NACA TN 3836. Supersedes RM E51L10)

WIND-TUNNEL TECHNIQUE FOR SIMULTANEOUS 
SIMULATION OF EXTERNAL FLOW FIELD ABOUT 
NACELLE INLET AND EXIT AIRSTREAMS AT 
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FULL-SCALE INVESTIGATION OF SEVERAL JET- 
ENGINE NOSE-REDUCTION NOZZLES. Willard D. 
Coles and Edmund E. Callaghan. April 1957. 
45p. diagrs., photos., tabs. (NACA TN 3974)

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NOTE ON SOME OBSERVED EFFECTS OF ROCKET- 
MOTOR OPERATION ON THE BASE PressURES 
OF BODIES IN FREE FLIGHT. Paul E. Purser, 
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November 16, 1956. 28p. diagrs., tabs. 
(NACA RM L5011B)

PRELIMINARY INVESTIGATION OF COOLING-AIR 
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EXPERIMENTAL INVESTIGATION OF EFFECT OF 
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Edmund E. Callaghan and Willard D. Coles. 
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(NACA RM E51J22)

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RESEARCH AIRPLANE AT TRANSONIC SPEEDS, 
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NOTE ON PERFORMANCE OF AIRCRAFT EJECTOR 
NOZZLES AT HIGH SECONDARY FLOWS. Fred D. 
Kochendorfer. August 1954. 20p. diagrs. 
(NACA RM E54F17a)

EXPLORATORY STUDY OF GROUND PROXIMITY 
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46p. diagrs., photos. (NACA TN 3982)

NACA 65-SERIES COMPRESSOR ROTOR PERFORM- 
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Ashby, Jr. February 1955. 42p. diagrs., photos., 
tab. (NACA RM L52L17)

COMPARISON OF LOW-SPEED ROTOR AND 
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CAMBER NACA 65-(C, A0)10 COMPRESSOR- 
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LOW-SPEED WAKE CHARACTERISTICS OF TWO- 
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PERFORMANCE CHARACTERISTICS OF RING- 
CASCADE-TYPE THRUST REVERSERS. Jack G. 
McArdle. November 1956. 53p. dia., photos., 
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(1.4.7) BOUNDARY LAYER

THE INFLUENCE OF VORTEX GENERATORS ON THE PERFORMANCE OF A SHORT 1.9:1 STRAIGHT-WALL ANNULAR DIFFUSER WITH A WHIRLING INLET FLOW. Charles C. Wood and James T. Higginbotham. February 1953. 36p. diagrs., photo., tab. (NACA RM L52L01a)


ON POSSIBLE SIMILARITY SOLUTIONS FOR THREE-DIMENSIONAL INCOMPRESSIBLE LAMINAR BOUNDARY LAYERS. I - SIMILARITY WITH RESPECT TO STATIONARY POLAR COORDINATES. Arthur G. Hansen and Howard Z. Herzig. October 1956. 30p. tab. (NACA TN 3768)


(1) AERODYNAMICS


ON FLOW OF ELECTRICALLY CONDUCTING FLUIDS OVER A FLAT PLATE IN THE PRESENCE OF A TRANSVERSE MAGNETIC FIELD. Vernon J. Rossow. May 1957. 54p. tabs. (NACA TN 3971)

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FLOW SEPARATION FROM RODS AHEAD OF BLUNT NOSES AT MACH NUMBER 2.72. Jim J. Jones. July 1952. 18p. diagrs., photos. (NACA RM L52E05a)


EXPLORATORY INVESTIGATION OF THE USE OF AREA SUCTION TO ELIMINATE AIR-FLOW SEPARATION IN DIFFUSERS HAVING LARGE EXPANSION ANGLES. Curt A. Holzhauser and Leo P. Hall. October 1956. 18p. diagrs. (NACA TN 3793)


(1. 4. 7. 2)

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AN INVESTIGATION AT TRANSONIC SPEEDS OF THE AERODYNAMIC CHARACTERISTICS OF AN AIR INLET INSTALLED IN THE ROOT OF A 45° SWEPT-BACK WING. Robert R. Howell and Arvid L. Keith, Jr. October 1952. 47p. diagrs., photos., tabs. (NACA RM L52H06a)


EXPLORATORY INVESTIGATION OF THE USE OF AREA SUCTION TO ELIMINATE AIR-FLOW SEPARATION IN DIFFUSERS HAVING LARGE EXPANSION ANGLES. Curt A. Holzhauser and Leo P. Hall. October 1956. 18p. diagrs. (NACA TN 3793)


(1.5) Propellers

(1.5.1) Theory


(1.5.2) Design Variables


(1.5.2.2) Solidity


Static-thrust characteristics of the NACA 8.75-(5)(05)-037 dual-rotation pro-


(1.5.2.4) Blade Plan Forms

Investigation of the NACA 4-(0)(03)-045 two-

blade propeller at forward Mach numbers to 0.925. James B. Delano and Melvin M. Carmel. January 18, 1950. 22p. diags., photo. (NACA RM L9L06a)


Investigation of the NACA 4-(0)(03)-045 two-

blade propeller at forward Mach numbers to 0.925. Melvin M. Carmel and Joseph R. Milillo. March 14, 1950. 29p. diags., photo., tab. (NACA RM L50A31a)

The effect of thickness ratio on section thrust distribution as determined from a study of wake surveys of the NACA 4-(0)(03)-045 and 4-(0)(08)-045 two-blade pro-

pellers up to forward Mach numbers of 0.925. Daniel E. Harrison and Joseph R. Milillo. March 14, 1950. 29p. diags., photo., tab. (NACA RM L50A31a)

The effect of thickness ratio on section thrust distribution as determined from a study of wake surveys of the NACA 4-(0)(03)-045 and 4-(0)(08)-045 two-blade pro-

pellers up to forward Mach numbers of 0.925. Daniel E. Harrison and Joseph R. Milillo. April 5, 1951. 62p. diags., photo., tabs. (NACA RM L51B05)

Investigation of the NACA 1.167-(0)(03)-058 and NACA 1.167-(0)(05)-058 three-blade propellers at forward Mach numbers to 0.92 including effects of thrust-axis inclina-

(1) AERODYNAMICS


(1.5.2.7)

DUAL ROTATION


(1.5.2.8)

INTERFERENCE OF BODIES


(1.5.2.9)

PITCH AND YAW


(1.5.3)

DESIGNATED TYPES


(1.5.4)

SLIPSTREAM


EFFECT OF PROPELLER LOCATION AND FLAP DEFORMATION ON THE AERODYNAMIC CHARACTERISTICS OF A WING-PROPELLER COMBINATION FOR ANGLES OF ATTACK FROM 0° TO 80°. William A. Newsom, Jr. January 1957. 45p. diagrs. (NACA TN 3917)


(1.5.6) OPERATING CONDITIONS


(1.5.7) PROPELLER-SPINNER-COWL COMBINATIONS

EFFECT OF ROTATION OF AN NACA 1-SERIES E-TYPE COWLING ON THE INTERNAL FLOW AND FORCE CHARACTERISTICS OF THE COWLING AT MACH NUMBERS UP TO 0.84 AND AT AN ANGLE OF ATTACK OF 0°. Robert I. Sammonds and Robert M. Reynolds. October 1954. 54p. diagrs., photos., tabs. (NACA RM A54G14)

(1.6) Rotating Wings

(1.6.1) Theory


Equations and procedures for numerically calculating the aerodynamic characteristics of lifting rotors. Alfred Gessow. October 1956. 21p. diagr., tab. (NACA TN 3747)

A theoretical estimate of the effects of compressibility on the performance of a helicopter rotor in various flight conditions. Alfred Gessow and Almer D. Crim. October 1956. 33p. diags. (NACA TN 3798)


Approximate solution for streamlines about a lifting rotor having uniform loading and operating in hovering or low-speed vertical-ascent flight conditions. Walter Castles, Jr., Georgia Institute of Technology. February 1957. 41p. diags., tabs. (NACA TN 3921)


(1.6.2) Experimental Studies


(1.6.2.1) Power-Driven

(1.7) Aircraft

(1.7.1) AIRPLANES


COMPONENTS IN COMBINATION

FLIGHT INVESTIGATION FROM HIGH SUBSONIC TO SUPERSONIC SPEEDS TO DETERMINE THE ZERO-LIFT DRAG OF A TRANSONIC RESEARCH VEHICLE HAVING WINGS OF 45° SWEEPBACK, ASPECT RATIO 4, TAPER RATIO 0.6, AND NACA 65A006 AIRFOIL SECTIONS. Ellis Katz. October 27, 1949. 16p. diags., photos., tab. (NACA RM L69B30)


COMPARISON OF LARGE-SCALE FLIGHT MEASUREMENTS OF ZERO-LIFT DRAG AT MACH NUMBERS FROM 0.9 TO 1.7 OF TWO WING-BODY COMBINATIONS HAVING SIMILAR 60° TRIANGULAR WINGS WITH NACA 65A003 SECTIONS. Eugene D. Schult. October 25, 1950. 15p. diags., photo., tab. (NACA RM L50I22)


AERODYNAMIC INTERFERENCE EFFECTS ON NORMAL AND AXIAL FORCE COEFFICIENTS OF SEVERAL ENGINE-STRUT-BODY CONFIGURATIONS AT MACH NUMBERS OF 1.8 AND 2.0. Emil J. Kremzier and Murray Dryer. April 1952. 35p. diags., tab. (NACA RM E52B21)


EFFECT OF VERTICAL POSITION OF THE WING ON THE AERODYNAMIC CHARACTERISTICS OF THREE WING-BODY COMBINATIONS. John C. Heitmeyer. February 1953. 56p. diags., photos., tabs. (NACA RM A52L15a)


(NACA TM 1421)

(NACA TN 3907)

(NACA TN 3873)


A THEORY FOR THE LATERAL RESPONSE OF AIRPLANES TO RANDOM ATMOSPHERIC TURBULENCE. John M. Eggleston. May 1957. 1, 75p. diagrs., tabs. (NACA TN 3954)


(1.7.1.1.1) Wing-Fuselage


COMPARISON OF LARGE-SCALE FLIGHT MEASUREMENTS OF ZERO-LIFT DRAG AT MACH NUMBERS FROM 0.9 TO 1.7 OF TWO WING-BODY COMBINATIONS HAVING SIMILAR 63° TRIANGULAR WINGS WITH NACA 65A003 SECTIONS. Eugene D. Schult. October 25, 1950. 15p. diagrs., photo, tab. (NACA RM L50122)


LIFT, DRAG, AND PITCHING MOMENT OF LOW-ASPECT-RATIO WINGS AT SUBSONIC AND SUPERSONIC SPEEDS - PLANE TAPERED WING OF ASPECT RATIO 2 WITH NACA 0008-63 SECTION. Donald W. Smith and John C. Heitmeyer. February 1, 1951. 22p. diagrs., photo. (NACA RM A50K20)


AERODYNAMICS

LIFT, DRAG, AND PITCHING MOMENT OF LOW-ASPECT-RATIO WINGS AT SUBSONIC AND SUPERSONIC SPEEDS - PLANE TRIANGULAR WING OF ASPECT RATIO 3 WITH NACA 0003-63 SECTION.
John C. Heitmeyer. September 1951. 20p. diagrs. (NACA RM A51H02)

LIFT, DRAG, AND PITCHING MOMENT OF LOW-ASPECT-RATIO WINGS AT SUBSONIC AND SUPERSONIC SPEEDS - PLANE 45° SWEEP-BACK WING OF ASPECT RATIO 3. TAPER RATIO 0.4 WITH 3-PERCENT-THICK, BICONVEX SECTION.
John C. Heitmeyer. September 1951. 20p. diagrs. (NACA RM A51H10)

EXPERIMENTAL AND THEORETICAL STUDY OF THE EFFECTS OF BODY SIZE ON THE AERODYNAMIC CHARACTERISTICS OF AN ASPECT RATIO 3.0 WING-BODY COMBINATION.
Edward J. Hopkins and Hubert C. Carel. October 1951. 52p. diagrs., photos., tabs. (NACA RM A51G24)

LIFT, DRAG, AND PITCHING MOMENT OF LOW-ASPECT-RATIO WINGS AT SUBSONIC AND SUPERSONIC SPEEDS - AN INVESTIGATION AT LARGE REYNOLDS NUMBERS OF THE LOW-SPEED CHARACTERISTICS OF SEVERAL WING-BODY COMBINATIONS.


A COMPARISON OF THE CHORDWISE PRESSURE DISTRIBUTION AND SPANWISE DISTRIBUTION OF LOADING AT SUBSONIC SPEEDS ON TWO TRIANGULAR WINGS OF ASPECT RATIO 2 HAVING NACA 0005 AND 0008 SECTIONS.

LONGITUDINAL STABILITY AND DRAG CHARACTERISTICS AT MACH NUMBERS FROM 0.70 TO 1.37 OF ROCKET-PROPELLED MODELS HAVING A MODIFIED TRIANGULAR WING.

LIFT, DRAG, AND PITCHING MOMENT OF LOW-ASPECT-RATIO WINGS AT SUBSONIC AND SUPERSONIC SPEEDS - PLANE TRIANGULAR WING OF ASPECT RATIO 3 WITH AIR-TO-AIR MISSILE MODELS MOUNTED EXTERNALLY.

LIFT, DRAG, AND PITCHING MOMENT OF LOW-ASPECT-RATIO WINGS AT SUBSONIC AND SUPERSONIC SPEEDS - PLANE TAPERED WING OF ASPECT RATIO 3.1 WITH 3-PERCENT-THICK ROUNDED-NOSE SECTION.

PRESSURE DISTRIBUTION AT LOW SPEED ON A MODEL INCORPORATING A WING WITH ASPECT RATIO 6, 45° SWEEP, TAPER RATIO 0.6, AND AN NACA 65A009 AIRFOIL SECTION.

FLUTTER OF A 60° DELTA WING (NACA 65A003 AIRFOIL) ENCOUNTERED AT SUPERSONIC SPEEDS DURING THE FLIGHT TEST OF A ROCKET-PROPELLED MODEL.
Joseph H. Judd and William T. Lauten, Jr. September 1952. 34p. diagrs., photos., tabs. (NACA RM L52E06a)

AERODYNAMIC CHARACTERISTICS OF A 45° SWEEPBACK WING-FUSELAGE COMBINATION AND THE FUSELAGE ALONE OBTAINED IN THE LANGLEY 8-FOOT TRANSONIC TUNNEL.

WIND-TUNNEL INVESTIGATION OF THE STATIC LATERAL STABILITY CHARACTERISTICS OF WING-FUSELAGE COMBINATIONS AT HIGH SUBSONIC SPEEDS. SWEEP SERIES.

TRANSONIC WIND-TUNNEL INVESTIGATION OF THE INTERFERENCE BETWEEN A 45° SWEEPBACK WING AND A SYSTEMATIC SERIES OF FOUR BODIES.
Donald L. Loving and Dewey E. Wornom. November 1952. 42p. diagrs., photos., tabs. (NACA RM L52J01)

A TRANSONIC WIND-TUNNEL INVESTIGATION OF THE CHARACTERISTICS OF A TWISTED AND CAMEBERED 45° SWEEPBACK WING-FUSELAGE CONFIGURATION.

TRANSONIC WIND-TUNNEL INVESTIGATION OF THE EFFECTS OF WING INCIDENCE ANGLE ON THE CHARACTERISTICS OF TWO WING-BODY COMBINATIONS.
Francis G. Morgan, Jr. January 1953. 28p. diagrs., photo. (NACA RM L52K06a)

TRANSONIC WIND-TUNNEL INVESTIGATION OF AN UNSWEEP WING IN COMBINATION WITH A SYSTEMATIC SERIES OF FOUR BODIES.

LIFT, DRAG, AND PITCHING MOMENT OF LOW-ASPECT-RATIO WINGS AT SUBSONIC AND SUPERSONIC SPEEDS - COMPARISON OF THREE WINGS OF ASPECT RATIO 2 OF RECTANGULAR, SWEP TBACK, AND TRIANGULAR PLAN FORM, INCLUDING EFFECTS OF THICKNESS DISTRIBUTION.
Ronald C. Hightower. February 1953. 30p. diagrs., tabs. (NACA RM A52L02)
EFFECT OF VERTICAL POSITION OF THE WING ON THE AERODYNAMIC CHARACTERISTICS OF THREE WING-BODY COMBINATIONS. John C. Heilmeyer. February 1953. 56p. diagrs., photo., tabs. (NACA RM A52L15a)


TRANSONIC WIND-TUNNEL INVESTIGATION OF THE AERODYNAMIC CHARACTERISTICS OF A 60° TRIANGULAR WING IN COMBINATION WITH A SYMMETRICAL SERIES OF THREE BODIES. Thomas C. Kelly. April 1953. 22p. diagrs., photo. (NACA RM L52L22a)

EFFECT OF LEADING-EDGE CHORD-EXTENSIONS ON THE AERODYNAMIC CHARACTERISTICS OF A 45° SWEEPBACK WING-FUSELAGE COMBINATION AT MACH NUMBERS OF 0.40 TO 1.03. F. E. West, Jr., George Liner, and Gladys S. Martz. April 1953. 40p. diagrs., photo. (NACA RM L53B02)


FREE-FLIGHT LONGITUDINAL-STABILITY INVESTIGATION INCLUDING SOME EFFECTS OF WING ELASTICITY FROM MACH NUMBERS OF 0.85 TO 1.34 OF A TAILLESS MISSILE CONFIGURATION HAVING A 45° SWEEPBACK WING OF ASPECT RATIO 5.5. Richard G. Arbic and Warren Gillespie, Jr. August 1953. 30p. diagrs., photos., tabs. (NACA RM L53F18)


A LOW-SPEED INVESTIGATION OF THE AERODYNAMIC, CONTROL, AND HINGE-MOMENT CHARACTERISTICS OF TWO TYPES OF CONTROLS AND BALANCING TABS ON A LARGE-SCALE THIN DELTA-WING-FUSELAGE MODEL. Marvin P. Fink and Bennie W. Cocke. March 1954. 69p. diagrs., photo., tabs. (NACA RM L54B03)

A WIND-TUNNEL INVESTIGATION AT HIGH SUBSONIC SPEEDS OF THE LATERAL CONTROL CHARACTERISTICS OF VARIOUS PLAIN SPOILER CONFIGURATIONS ON A 3-PERCENT-THICK 60° DELTA WING. Harleth G. Wiley. May 1954. 45p. diagrs., tabs. (NACA RM L54D01)

SUPERSONIC FLUTTER OF A 60° DELTA WING ENCOUNTERED DURING THE FLIGHT TEST OF A ROCKET-PROPELLED MODEL. William T. Lauten, Jr., and Joseph H. Judd. June 1954. 20p. diagrs., photos., tabs. (NACA RM L54D12a)


GROUND EFFECTS ON THE LONGITUDINAL CHARACTERISTICS OF TWO MODELS WITH WINGS HAVING LOW ASPECT RATIO AND POINTED TIPS. Donald A. Bueh and Bruce E. Tinling. July 1955. 48p. diagrs., photos., tabs. (NACA RM A55E04)


AN ANALYSIS OF ONCE-PER-REVOLUTION OSCILLATING AERODYNAMIC THRUST LOADS ON SINGLE-ROTATION PROPELLERS ON TRACTOR AIRPLANES AT ZERO YAW. Vernon L. Rogallo, Paul F. Yaggy, and John L. McCcloud. III. 1956. ii, 30p. diagrs., photos. (NACA Rept. 1295. Supersedes TN 3395)


COMPARISON OF FLIGHT AND WIND-TUNNEL MEASUREMENTS OF HIGH-SPEED-AIRPLANE STABILITY AND CONTROL CHARACTERISTICS. Walter C. Williams, Hubert M. Drake, and Jack Fischel. (The information in this report was also contained in a paper by the same authors which was presented to Wind Tunnel and Model Testing Panel of Advisory Group for Aeronautical Research and Development, Brussels, Belgium, August 27-31, 1956). August 1956. 16p. diagrs. (NACA TN 3859)


THE LINEARIZED SUBSONIC FLOW ABOUT SYMMETRICAL NONLIFTING WING-BODY COMBINATIONS. John B. McDevitt. April 1957. 67p. diagrs. (NACA TN 3964)

(1.7.1.1.2) Wing-Nacelle


AN ANALYSIS OF ONCE-PER-REVOLUTION OSCILLATING AERODYNAMIC THRUST LOADS ON SINGLE-ROTATION PROPELLERS ON TRACTOR AIRPLANES AT ZERO YAW. Vernon L. Rogallo, Paul F. Yaggy, and John L. McCurdy. III. 1956. 31p. diagrs., photos., tab. (NACA Rept. 1295. Supersedes TN 3395)


WIND-TUNNEL INVESTIGATION OF AN EXTERNAL-FLOW JET-AUGMENTED SLOT FLAP SUITABLE FOR APPLICATION TO AIRPLANES WITH POD-MOUNTED JET ENGINES. John P. Campbell and Joseph L. Johnson, Jr. December 1956. 47p. diagrs., tab. (NACA TN 3899)

(1.7.1.1.3) Tail-Wing and Fuselage


LONGITUDINAL STABILITY AND DRAG CHARACTERISTICS AT MACH NUMBERS FROM 0.70 TO 1.37 OF ROCKET-PROPELLED MODELS HAVING A MODIFIED TRIANGULAR WING. Rowe Chapman, Jr., and John D. Morrow. May 1952. 35 p., diagrs., photos., tabs. (NACA RM L52A31)


LOW-SPEED LONGITUDINAL CHARACTERISTICS OF TWO UNSWEPT WINGS OF HEXAGONAL AIR-FOIL SECTIONS HAVING ASPECT RATIOS OF 2.5 AND 4.0 WITH FUSELAGE AND WITH HORIZONTAL TAIL LOCATED AT VARIOUS VERTICAL POSITIONS. William M. Hadaway and Patrick A. Cancro. October 1953. 29 p., diagrs., photos. (NACA RM L53H14a)


THE EFFECTS OF CHANGES IN ASPECT RATIO AND TAIL HEIGHT ON THE LONGITUDINAL STABILITY CHARACTERISTICS AT HIGH SUBSONIC SPEEDS OF A MODEL WITH A WING HAVING 32.6° SWEEPBACK. William J. Alford, Jr. and Thomas B. Pasteur, Jr. February 1954. 61 p., diagrs., photos., tab. (NACA RM L53L09)


COMPARISON OF FLIGHT AND WIND-TUNNEL MEASUREMENTS OF HIGH-SPEED-AIRPLANE STABILITY AND CONTROL CHARACTERISTICS. Walter C. Williams, Hubert M. Drake, and Jack Fischel. (The information contained in this report was also presented to Wind Tunnel and Model Testing Panel of Advisory Group for Aeronautical Research and Development, Brussels, Belgium, August 27-31, 1956.) August 1956. 16p. diagrs. (NACA TN 3859)


EXPERIMENTAL STEADY-STATE YAWING DERIVATIVES OF A 60° DELTA-WING MODEL AS AFFECTED BY CHANGES IN VERTICAL POSITION OF THE WING AND IN RATIO OF FUSELAGE DIAMETER TO WING SPAN. Byron M. Jaquet and Herman S. Fletcher. October 1956. 20p. diagrs., tab. (NACA TN 3843)


WIND-TUNNEL INVESTIGATION OF AN EXTERNAL-FLOW JET-AUGMENTED SLOTTED FLAP SUITABLE FOR APPLICATION TO AIRPLANES WITH POD-MOUNTED JET ENGINES. John P. Campbell and Joseph L. Johnson, Jr. December 1956. 47p. diagrs., tab. (NACA TN 3898)

TURBULENCE IN THE WAKE OF A THIN AIRFOIL AT LOW SPEEDS. George S. Campbell, California Institute of Technology. January 1957. 65p. diagrs. (NACA TN 1427)


EFFECTS OF FUSELAGE NOSE LENGTH AND A CANOPY ON THE STATIC LONGITUDINAL AND LATERAL STABILITY CHARACTERISTICS OF 45° SWEPTBACK AIRPLANE MODELS HAVING FUSELAGES WITH SQUARE SECTIONS. Byron M. Jaquet and H. S. Fletcher. April 1957. 47p. diagrs., photos., tabs. (NACA TN 3961)


(1.7.1.1.4) Propeller and Jet Interference


(1.7.1.1.5) External Stores


INCOMPRESSIBLE FLUTTER CHARACTERISTICS OF REPRESENTATIVE AIRCRAFT WINGS. C. H. Wilts, California Institute of Technology. April 1957. 121p. diagrs., tabs. (NACA TN 3760)

(1.7.1.2) SPECIFIC AIRPLANES


RESULTS OBTAINED DURING A DIVE RECOVERY OF THE BELL XS-1 AIRPLANE TO HIGH LIFT COEFFICIENTS AT A MACH NUMBER GREATER THAN 1.0. Milton D. McLaughlin and Dorothy C. Clift. April 6, 1948. 6p. diagrs. (NACA RM L8C23a)

RESULTS OBTAINED DURING ACCELERATED TRANSONIC TESTS OF THE BELL XS-1 AIRPLANE IN FLIGHTS TO A MACH NUMBER OF 0.92. Hubert M. Drake, Milton D. McLaughlin, and Harold R. Goodman. April 19, 1948. 29p. diagrs., tab. (NACA RM L8A05a)


FLIGHT MEASUREMENTS WITH THE DOUGLAS D-558-II (BUAERO NO. 37974) RESEARCH AIRPLANE. LATERAL AND DIRECTIONAL STABILITY CHARACTERISTICS AS MEASURED IN SIDESLIPS AT MACH NUMBERS UP TO 0.87. S. A. Sjoberg. May 19, 1950. 29p. diagrs., photos., tab. (NACA RM L50C14)


PRELIMINARY MEASUREMENTS OF STATIC LATERAL STABILITY CHARACTERISTICS OF THE DOUGLAS D-558-II AIRPLANE IN HIGH-SPEED FLIGHT FOR VARIOUS WING LOADINGS AND ALTITUDES. M. J. Queijo and Alex Goodman. October 3, 1950. 31p. diagrs., tabs. (NACA RM L50H16a)

FLIGHT MEASUREMENTS WITH THE DOUGLAS D-558-II (BUAERO NO. 37974) RESEARCH AIRPLANE. STATIC LONGITUDINAL STABILITY AND CONTROL CHARACTERISTICS AT MACH NUMBERS UP TO 0.87. S. A. Sjoberg, James R. Peele, and John H. Griffith. January 17, 1951. 48p. diagrs., photos., tab. (NACA RM L50K13)


CALCULATED LATERAL FREQUENCY RESPONSE AND LATERAL OSCILLATORY CHARACTERISTICS FOR SEVERAL HIGH-SPEED AIRPLANES IN VARIOUS FLIGHT CONDITIONS. Byron M. Jaquet. December 1953. 72p. diagrs., tabs. (NACA RM L53J01)


(1) AERODYNAMICS


(1.7.1.3) PERFORMANCE


PERFORMANCE COMPARISON OF THREE CANARD-TYPE RAM-JET MISSILE CONFIGURATIONS AT MACH NUMBERS FROM 1.5 TO 2.0. Evan A. Fradenburgh and Emil J. Kremzier. August 1953. 31p. diagrs., tabs. (NACA RM E53F11)

CALCULATED LATERAL FREQUENCY RESPONSE AND LATERAL OSCILLATORY CHARACTERISTICS FOR SEVERAL HIGH-SPEED AIRPLANES IN VARIOUS FLIGHT CONDITIONS. Byron M. Jaquet. December 1953. 72p. diagrs., tabs. (NACA RM L53J01)


EFFECT OF PROPELLER LOCATION AND FLAP DEFLECTION ON THE AERODYNAMIC CHARACTERISTICS OF A WING-PROPELLER COMBINATION FOR ANGLES OF ATTACK FROM 0\degree TO 80\degree. William A. Newsom, Jr. January 1957. 45p. diagrs. (NACA TN 3917)


(1.7.2) MISSILES

OBSERVATIONS OF UNSTEADY FLOW PHENOMENA FOR AN INCLINED BODY FITTED WITH STABILIZING FINS. Merrill H. Mead. January 1952. 23p. diagrs., photos. (NACA RM A51K05)


(1721) COMPONENTS IN COMBINATION


FLIGHT INVESTIGATION FROM HIGH SUBSONIC TO SUPERSONIC SPEEDS TO DETERMINE THE ZERO-LIFT DRAG OF A TRANSonic RESEARCH VEHICLE HAVING WINGS OF 45° SWEEPBACK, ASPECT RATIO 4, TAPER RATIO 0.6, AND NACA 65A006 AIRFOIL SECTIONS. Ellis Katz. October 27, 1949. 16p. diagrs., photos., tab. (NACA RM L9H30)

COMPARISON OF LARGE-SCALE FLIGHT MEASUREMENTS OF ZERO-LIFT DRAG AT MACH NUMBERS FROM 0.9 TO 1.7 OF TWO WING-BODY COMBINATIONS HAVING SIMILAR 60° TRIANGULAR WINGS WITH NACA 65A003 SECTIONS. Eugene D. Schult. October 25, 1950. 15p. diagrs., photos., tab. (NACA RM L50122)

DAMPING IN ROLL OF A MISSILE CONFIGURATION WITH A MODIFIED TRIANGULAR WING AND A CRUCIFORM TAIL AT A MACH NUMBER OF 1.52. Richard Scherrer and David H. Dennis. March 6, 1951. 25p. diagrs., photos., tab. (NACA RM A51A03)


FLIGHT INVESTIGATION OF A SUPERSONIC CANARD MISSILE EQUIPPED WITH AN AUXILIARY DAMPING-IN-PITCH CONTROL SYSTEM. Martin T. Moul. February 1953. 31p. diagrs., photos., tabs. (NACA RM L52K14b)


PERFORMANCE COMPARISON OF THREE CANARD-TYPE RAM-JET MISSILE CONFIGURATIONS AT MACH NUMBERS FROM 1.5 TO 2.0. Evan A. Fadenburgh and Emil J. Kremzier. August 1953. 31p. diagrs., tabs. (NACA RM E53F11)


(1) AERODYNAMICS

FLIGHT INVESTIGATION TO DETERMINE LIFT AND DRAG CHARACTERISTICS OF A CANARD RAM-JET MISSILE CONFIGURATION IN THE MACH NUMBER RANGE OF 0.8 TO 2.0. Abraham A. Gammal and Thomas L. Kennedy. June 1954. 20p. diagrs., photos. (NACA RM L54D28)


TABLES OF CHARACTERISTIC FUNCTIONS FOR SOLVING BOUNDARY-VALUE PROBLEMS OF THE WAVE EQUATION WITH APPLICATION TO SUPERSONIC INTERFERENCE. Jack N. Nielsen. February 1957. 245p. diagrs., tabs. (NACA TN 3873)


Wing-Body

FLIGHT INVESTIGATION FROM HIGH SUBSONIC TO SUPERSONIC SPEEDS TO DETERMINE THE ZERO-LIFT DRAG OF A TRANSONIC RESEARCH VEHICLE HAVING WINGS OF 45° SWEEPBACK, ASPECT RATIO 4, TAPER RATIO 0.6, AND NACA 65A006 AIRFOIL SECTIONS. Ellis Katz. October 27, 1949. 16p. diagrs., photos., tab. (NACA RM L9H30)

FLIGHT INVESTIGATION AT MACH NUMBERS FROM 0.8 TO 1.4 TO DETERMINE THE ZERO-LIFT DRAG OF WINGS WITH "M" AND "W" PLAN FORMS. Ellis Katz, Edward T. Marley, and William B. Pepper. September 18, 1950. 28p. diagrs., photos., tab. (NACA RM L50G31)

COMPARISON OF LARGE-SCALE FLIGHT MEASUREMENTS OF ZERO-LIFT DRAG AT MACH NUMBERS FROM 0.9 TO 1.7 OF TWO-WING-BODY COMBINATIONS HAVING SIMILAR 60° TRIANGULAR WINGS WITH NACA 65A003 SECTIONS. Eugene D. Schult. October 25, 1950. 15p. diagrs., photo., tab. (NACA RM L50I22)


LIFT, DRAG, AND PITCHING MOMENT OF LOW-ASPECT-RATIO WINGS AT SUBSONIC AND SUPERSONIC SPEEDS - PLANE TRIANGULAR WING OF ASPECT RATIO 2 WITH NACA 0006-63 SECTION. Donald W. Smith and John C. Heitmeyer. February 1, 1951. 22p. diagrs., photo. (NACA RM A50K20)

LIFT, DRAG, AND PITCHING MOMENT OF LOW-ASPECT-RATIO WINGS AT SUBSONIC AND SUPERSONIC SPEEDS - PLANE TRIANGULAR WING OF ASPECT RATIO 2 WITH NACA 0005-63 SECTION. Donald W. Smith and John C. Heitmeyer. February 1, 1951. 23p. diagrs., photo. (NACA RM A50K21)


LIFT, DRAG, AND PITCHING MOMENT OF LOW-ASPECT-RATIO WINGS AT SUBSONIC AND SUPERSONIC SPEEDS - PLANE 45° SWEPT-BACK WING OF ASPECT RATIO 3, TAPER RATIO 0.4 WITH 3-PERCENT-THICK, BICONVEX SECTION. John C. Heitmeyer. September 1951. 20p. diagrs. (NACA RM A51H10)


LONGITUDINAL STABILITY AND DRAG CHARACTERISTICS AT MACH NUMBERS FROM 0.70 TO 1.37 OF ROCKET-PROPELLED MODELS HAVING A MODIFIED TRIANGULAR WING. Rowe Chapman, Jr., and John D. Morrow. May 1952. 36p. diagrs., photos., tab. (NACA RM L52A51)


THE USE OF THE ROLLED-UP VORTEX CONCEPT FOR PREDICTING WING-TAIL INTERFERENCE AND COMPARISON WITH EXPERIMENT AT MACH NUMBER OF 1.62 FOR A SERIES OF MISSILE CONFIGURATIONS HAVING TANDEM CRUCIFORM LIFTING SURFACES. Carl E. Grigsby. September 1952. 41p. diagrs., photos. (NACA RM L52H05)

THE LONGITUDINAL STABILITY AND CONTROL CHARACTERISTICS OF A 60° DELTA-WING MISSILE HAVING HALF DELTA TIP CONTROLS AS OBTAINED FROM A FREE-FLIGHT INVESTIGATION AT TRANSONIC AND SUPERSONIC SPEEDS. Martin T. Moul and Hal T. Baber, Jr. October 1952. 35p. diagrs., photos. (NACA RM A52K14)


FREE-FLIGHT LONGITUDINAL-STABILITY INVESTIGATION INCLUDING SOME EFFECTS OF WING ELASTICITY FROM MACH NUMBERS OF 0.85 TO 1.34 OF A TAILLESS MISSILE CONFIGURATION HAVING A 45° SWEEPBACK WING OF ASPECT RATIO 5.5. Richard G. Arbic and Warren Gillespie, Jr. August 1953. 30p. diagrs., photos., tabs. (NACA RM L53F16)


(1.7.2.1.2) Tail-Body

FLIGHT INVESTIGATION FROM HIGH SUBSONIC TO SUPersonic SPEEDS TO DETERMINE THE ZERO-LIFT DRAG OF A TRANSONIC RESEARCH VEHICLE HAVING WINGS OF 45º SWEPTBACK, ASPECT RATIO 4, TAPER RATIO 0.6, AND NACA 65A006 AIRFOIL SECTIONS. Ellis Katz. October 27, 1949. 16p. diagr., photos., tab. (NACA RM L9H30)


OBSERVATIONS OF UNSTEADY FLOW PHENOMENA FOR AN INCLINED BODY FITTED WITH STABILIZING FINS. Merrill H. Mead. January 1952. 25p. diagr., photos. (NACA RM A51K05)

SOME EFFECTS OF FIN PLAN FORM ON THE STATIC STABILITY OF FIN-BODY COMBINATIONS AT MACH NUMBER 4.06. Edward F. Ulmann and Robert W. Dunning. July 1952. 20p. diags. (NACA RM L52D15a)


BUFFETING OF A VERTICAL TAIL ON AN INCLINED BODY AT SUPersonic MACH NUMBERS. Forrest E. Gowen. March 1953. 35p. diags., photos., tab. (NACA RM A53A09)


ZERO-LIFT DRAG OF A SERIES OF BOMB SHAPES AT MACH NUMBERS FROM 0.60 TO 1.10. William E. Stoney, Jr., and John F. Royall. July 1956. 12p. diagr., photos., tabs. (NACA RM L56D16)


(1.7.2.1.3) Jet Interference


(1) AERODYNAMICS


AN EXPERIMENTAL INVESTIGATION OF STING-SUPPORT EFFECTS ON DRAG AND A COMPARISON WITH JET EFFECTS AT TRANSONIC SPEEDS. Maurice S. Cahn. September 1956. 67p. diags., tabs. (NACA RM L56F18a)


(1.7.2.1.4) Wing-Tail-Body

FLIGHT INVESTIGATION FROM MACH NUMBER 0.8 TO MACH NUMBER 2.0 TO DETERMINE SOME EFFECTS OF WING-TO-TAIL DISTANCE ON THE LONGITUDINAL STABILITY AND CONTROL CHARACTERISTICS OF A 60° DELTA-WING-CANARD MISSILE. Clarence A. Brown, Jr., and Reginald R. Lundstrom. June 1952. 42p. diags., photos. (NACA RM L52J19)


AERODYNAMICS OF AN AIR-TO-AIR MISSILE EMPLOYING CRUCIFORM WINGS AND TAIL OF RECTANGULAR PLAN FORM AT MACH NUMBERS OF 1.4 AND 1.9. Merrill H. Mead. February 1953. 31p. diags. (NACA RM A52K14)


(1.7.2.2) SPECIFIC MISSILES

FLIGHT-TEST EVALUATION OF THE LONGITUDINAL STABILITY AND CONTROL CHARACTERISTICS OF 0.5-SCALE MODELS OF THE LARK PILOTLESS AIRCRAFT CONFIGURATION. David G. Stone. February 6, 1948. 60p. diags., photos., tabs. (NACA RM L7126)


ROCKET-MODEL INVESTIGATION TO DETERMINE THE FORCE AND HINGE-MOMENT CHARACTERISTICS OF A HALF-DELTA TIP CONTROL ON A 59° SWEEPBACK DELTA WING BETWEEN MACH NUMBERS OF 0.55 AND 1.43. C. William Martz, James D. Church, and John W. Goslee. October 1952. 53p. diags., photos., tab. (NACA RM L52H08)
### (1) AERODYNAMICS

**Performance Comparison of Three Canard-Type RAM-Jet Missile Configurations at Mach Numbers from 1.5 to 2.0.**


**Free-Flight Longitudinal-Stability Investigation Including Some Effects of Wing Elasticity from Mach Numbers of 0.85 to 1.34 of a Tailless Missile Configuration Having a 45° Sweptback Wing of Aspect Ratio 5.5.**


**Rocket-Powered-Model Investigation of the Hinge-Moment and Normal-Force Characteristics of a Half-Diamond Tip Control on a 60° Sweptback Diamond Wing Between Mach Numbers of 0.5 and 1.3.**

James D. Church. April 1954. 30p. diagrs., photos., tab. (NACA RM L54C10)

**Turbulent Convective Heat-Transfer Coefficients Measured from Flight Tests of Four Research Models (NACA RM-10) at Mach Numbers from 1.0 to 3.6.**


**Flight Investigation of the Performance of a Two-Stage Solid-Propellant Nike-Deacon (DAN) Meteorological Sounding Rocket.**


### (1.7.3) ROTATING-WING AIRCRAFT

#### (1.7.3.1) Autogiros

**Charts for Estimating Performance of High-Performance Helicopters.**


**Equations and Procedures for Numerically Calculating the Aerodynamic Characteristics of Lifting Rotors.**

Alfred Gessow. October 1956. 21p. diagr., tab. (NACA TN 3747)

### (1.7.3.2) Helicopters

**An Experimental Investigation of the Effect of Various Parameters Including Tip Mach Number on the Flutter of Some Model Helicopter Rotor Blades.**


**Aspects of Internal-Flow-System Design for Helicopter Propulsive Units.**


**Studies of the Speed Stability of a Tandem Helicopter in Forward Flight.**


**Charts for Estimating Performance of High-Performance Helicopters.**


**An Experimental Investigation of a Flat Ram-Jet Engine on a Helicopter Rotor.**


**Static-Flight Measurements of the Aerodynamic Loading on a Helicopter Rotor Blade.**


**Equations and Procedures for Numerically Calculating the Aerodynamic Characteristics of Lifting Rotors.**

Alfred Gessow. October 1956. 21p. diagr., tab. (NACA TN 3747)

**A Theoretical Estimate of the Effects of Compressibility on the Performance of a Helicopter Rotor in Various Flight Conditions.**

Alfred Gessow and Almer D. Clrm. October 1956. 35p. diagrs. (NACA TN 3798)

**Charts for Estimating the Hovering Endurance of a Helicopter.**

Robert A. Makofskl. October 1956. 15p. diagrs. (NACA TN 3810)

**Distribution of Normal Component of Induced Velocity in Lateral Plane of a Lifting Rotor.**


FLIGHT MEASUREMENTS OF THE VIBRATIONS ENCOUNTERED BY A TANDEM HELICOPTER AND A METHOD FOR MEASURING THE COUPLED RESPONSE IN FLIGHT. John E. Yeates, Jr. December 1956. 28p. diagrs., photo, tab. (NACA TN 3852)


INVESTIGATION OF VERTICAL DRAG AND PERIODIC AIRLOADS ACTING ON FLAT PANELS IN A ROTOR SLIPSTREAM. Robert A. Makofski and George F. Menkick. December 1956. 23p. diagrs., photo. (NACA TN 3900)


APPROXIMATE SOLUTION FOR STREAMLINES ABOUT A LIFTING ROTOR HAVING UNIFORM LOADING AND OPERATING IN HOVERING OR LOW-SPEED VERTICAL-ASCENT FLIGHT CONDITIONS. Walter Castles, Jr., Georgia Institute of Technology. February 1957. 41p. diagrs., tabs. (NACA TN 3921)


SOME EFFECTS OF VALVE FRICTION AND STICK FRICTION ON CONTROL QUALITY IN A HELICOPTER WITH HYDRAULIC-POWER CONTROL SYSTEMS. B. Porter Brown and John P. Reeder. May 1957. 8p. diagr. (NACA TN 4004)

(1.7.4) SEAPLANES

(1.7.4.1) GENERAL STUDIES


HYDRODYNAMIC PRESSURE DISTRIBUTION OBTAINED WITH A STREAMLINE BODY EQUIPPED WITH CHINE STRIPS. Bernard Weinflash. September 1955. 29p. diagrs., photos., tabs. (NACA RM L55F20)

(1.7.6) BIPLANES AND TRIPLANES

(1.8) Stability and Control

**(1.8.1) Stability**


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**(1.8.1.1) Static**


**(1.8.1.1.1) Longitudinal**

Flight-test evaluation of the longitudinal stability and control characteristics of 0.5-scale models of the Lark pilotless-aircraft configuration. David G. Stone. February 6, 1948. 60p. diagrs., photos., tabs. (NACA RM L7126)

Results of preliminary flight tests of the XS-1 airplane (8-percent wing) to a Mach number of 1.25. W. C. Williams and De E. Beeler. April 6, 1948. 14p. diagrs. (NACA RM L8A25a)

Results obtained during accelerated transonic tests of the Bell XS-1 airplane in flights to a Mach number of 0.92. Hubert M. Drake, Milton D. McLaughlin, and Harold R. Goodman. April 19, 1946. 22p. diagrs., tab. (NACA RM L8A05a)


High-speed wind-tunnel investigation of the longitudinal stability and control characteristics of a 1/16-scale model of the D-558-2 research airplane at high subsonic Mach numbers and at a Mach number of 1.2. Robert S. Osborne. April 5, 1949. 87p. diagrs., photos., tabs. (NACA RM L6C04)


Aerodynamic study of a wing-fuselage combination employing a wing swept back 63°. - Characteristics throughout the subsonic speed range with the wing cambered and twisted for a uniform load at a lift coefficient of 0.25. J. Lloyd Jones and Fred A. Demele. August 15, 1949. 41p. diagrs., photos., tab. (NACA RM A9D26)
AERODYNAMIC STUDY OF A WING-FUSELAGE COMBINATION EMPLOYING A WING SWEPT BACK 63° - EFFECT OF REYNOLDS NUMBER AT SUPERSONIC MACH NUMBERS ON THE LONGITUDINAL CHARACTERISTICS OF A WING TWISTED AND CAMBERED FOR UNIFORM LOAD. John C. Heitmeyer. October 9, 1950. 36p. diagrams, photos. (NACA RM A50G10)


WIND-TUNNEL INVESTIGATION AT LOW SPEED OF A WING SWEPT BACK 63° AND TWISTED AND CAMBERED FOR UNIFORM LOAD AT A LIFT COEFFICIENT OF 0.5 AND WITH A THICKENED TIP SECTION. James A. Weberg and Hubert C. Carel. November 21, 1950. 42p. diagrams, photo, tabs. (NACA RM A50H09)


FLIGHT MEASUREMENTS WITH THE DOUGLAS D-558-II (BUAERO NO. 37974) RESEARCH AIRPLANE. STATIC LONGITUDINAL STABILITY AND CONTROL CHARACTERISTICS AT MACH NUMBERS UP TO 0.87. S. A. Sjoberg, James R. Peele, and John H. Griffith. January 17, 1951. 46p. diagrams, photos, tab. (NACA RM L50L06a)


(1) AERODYNAMICS

LIFT, DRAG, AND PITCHING MOMENT OF LOW-ASPECT-RATIO WINGS AT SUBSONIC AND SUPERSONIC SPEEDS - PLANE TRIANGULAR WING OF ASPECT RATIO 2 WITH NACA 0008-63 SECTION. Donald W. Smith and John C. Heitmeyer. February 1, 1951. 22p. diagrs., photo. (NACA RM A50K20)

LIFT, DRAG, AND PITCHING MOMENT OF LOW-ASPECT-RATIO WINGS AT SUBSONIC AND SUPERSONIC SPEEDS - PLANE TRIANGULAR WING OF ASPECT RATIO 2 WITH NACA 0005-63 SECTION. Donald W. Smith and John C. Heitmeyer. February 1, 1951. 23p. diagrs., photo. (NACA RM A50K21)


LIFT, DRAG, AND PITCHING MOMENT OF LOW-ASPECT-RATIO WINGS AT SUBSONIC AND SUPERSONIC SPEEDS - PLANE 45° SWEEP-BACK WING OF ASPECT RATIO 3, TAPER RATIO 0.4 WITH 3-PERCENT-THICK, BICONVEX SECTION. John C. Heitmeyer. September 1951. 20p. diagrs. (NACA RM A51H10)


LONGITUDINAL STABILITY AND DRAG CHARACTERISTICS AT MACH NUMBERS FROM 0.70 TO 1.37 OF ROCKET-PROPELLED MODELS HAVING A MODIFIED TRIANGULAR WING. Rowe Chapman, Jr., and John D. Morrison. May 1952. 35p. diagrs., photos., tabs. (NACA RM L52A31)


FLIGHT INVESTIGATION FROM MACH NUMBER 0.8 TO MACH NUMBER 2.0 TO DETERMINE SOME EFFECTS OF WING-TO-TAIL DISTANCE ON THE LUNBERG STABILITY AND CONTROL CHARACTERISTICS OF A 60° DELTA-WING-CANARD MISSILE. Clarence A. Brown, Jr., and Reginald R. Lundstrom. June 1952. 42p. diagrs., photos. (NACA RM L52C29)


TRANSonic AERODYNAMIC CHARACTERISTICS OF THREE W-PLAN-FORM WINGS HAVING ASPECT RATIO 8, TAPER RATIO 0.45, AND NACA 63A-SERIES AIRFOIL SECTIONS. William D. Morrison, Jr. July 1952. 30p. diagrs., photo. (NACA RM L52E14a)


LONGITUDINAL FREQUENCY-RESPONSE AND STABILITY CHARACTERISTICS OF THE DOUGLAS D-558-II AIRPLANE AS DETERMINED FROM TRANSIENT RESPONSE TO A MACH NUMBER OF 0.96. Euclid C. Holeman. September 1952. 35p. diagrs., tabs. (NACA RM L52E02)


INVESTIGATION AT A MACH NUMBER OF 1.2 OF TWO 45° SWEEPBACK WINGS UTILIZING NACA 2-006 AND NACA 65A006 AIRFOIL SECTIONS. Homer B. Wilson, Jr. September 1952. 20p. diagrs., photos., tab. (NACA RM L52G17)

THE USE OF THE ROLLED-UP VORTEX CONCEPT FOR PREDICTING WING-TAIL INTERFERENCE AND COMPARISON WITH EXPERIMENT AT MACH NUMBER OF 1.62 FOR A SERIES OF MISSILE CONFIGURATIONS HAVING TANDEM CRUCIFORM LIFTING SURFACES. Carl E. Grigsby. September 1952. 41p. diagrs., photos. (NACA RM L52H05)

THE LONGITUDINAL STABILITY AND CONTROL CHARACTERISTICS OF A 60° DELTA-WING MISSILE HAVING HALF-DELTA TIP CONTROLS AS OBTAINED FROM A FREE-FLIGHT INVESTIGATION AT TRANSONIC AND SUPersonic SPEEDS. Martin T. Moul and Hal T. Baber, Jr. October 1952. 35p. diagrs., photos. (NACA RM L52H14)


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FREE-FLIGHT LONGITUDINAL-STABILITY INVESTIGATION INCLUDING SOME EFFECTS OF WING ELASTICITY FROM MACH NUMBERS OF 0.85 TO 1.34 OF A TAILLESS MISSILE CONFIGURATION HAVING A 45° SWEPTBACK WING OF ASPECT RATIO 5.5. Richard G. Arbic and Warren Gillespie, Jr. August 1953. 36p. diags., photos., tabs. (NACA RM L53F18)

TRANSONIC AERODYNAMIC CHARACTERISTICS IN PITCH OF A W-WING HAVING 60° 48' PANEL SWEET, ASPECT RATIO 3.5, AND TAPER RATIO 0.25. William D. Morrison, Jr. August 1953. 18p. diags., photo. (NACA RM L53F22)


THE EFFECTS OF CHANGES IN ASPECT RATIO AND TAIL HEIGHT ON THE LONGITUDINAL STABILITY CHARACTERISTICS AT HIGH SUBSONIC SPEEDS OF A MODEL WITH A WING HAVING 32.6° SWEPTBACK. William J. Alford, Jr. and Thomas B. Pasteur, Jr. February 1954. 61p. diags., photos., tab. (NACA RM L53L00)


A WIND-TUNNEL INVESTIGATION AT HIGH SUBSONIC SPEEDS OF THE LATERAL CONTROL CHARACTERISTICS OF VARIOUS PLAIN SPOILER CONFIGURATIONS ON A 3-PERCENT-THICK 60º DELTA WING. Harleth G. Wiley. May 1954. 45p. diagrs., tabs. (NACA RM L54D01)


FLIGHT INVESTIGATION TO DETERMINE LIFT AND DRAG CHARACTERISTICS OF A CANARD RAM-JET MISSILE CONFIGURATION IN THE MACH NUMBER RANGE OF 0.8 TO 2.0. Abraham A. Gammal and Thomas L. Kennedy. June 1954. 20p. diagrs., photos. (NACA RM L54D28)


A LOW-SPEED INVESTIGATION OF A THIN 60º DELTA WING EQUIPPED WITH A DOUBLE SLOTTED FLAP TO DETERMINE THE CHORDWISE PRESSURE DISTRIBUTION AND THE EFFECT OF VANE SIZE. Delwin R. Croom. March 1955. 42p. diagrs., tabs. (NACA RM L54L03a)


GROUND EFFECTS ON THE LONGITUDINAL CHARACTERISTICS OF TWO MODELS WITH WINGS HAVING LOW ASPECT RATIO AND POINTED TIPS. Donald A. Buell and Bruce E. Tinling. July 1955. 48p. diagrs., photos., tabs. (NACA RM A55E04)


EFFECTS OF LEADING-EDGE RADIUS ON THE LONGITUDINAL STABILITY OF TWO 45° SWEETBACK WINGS AS INFLUENCED BY REYNOLDS NUMBERS UP TO 8.20 x 10^6 AND MACH NUMBERS UP TO 0.303. Gerald V. Foster and William C. Schneider. July 1955. 65p. diagrs. (NACA RM L55F06)


LOW-SPEED STUDY OF THE EFFECT OF FREQUENCY ON THE STABILITY DERIVATIVES OF WINGS OSCILLATING IN YAW WITH PARTICULAR REFERENCE TO HIGH ANGLE-OF-ATTACK CONDITIONS. John P. Campbell, Joseph L. Johnson, Jr., and Donald E. Hewes. November 1955. 93p. diagrs., photos., tabs. (NACA RM L55H05)


LOW-SPEED LONGITUDINAL AERODYNAMIC CHARACTERISTICS OF A 45° SWEETBACK WING WITH DOUBLE SLOTTED FLAPS. Rodger L. Naeaseth. April 1956. 31p. diagrs., tabs. (NACA RM L55A10)

COMPARISON OF FLIGHT AND WIND-TUNNEL MEASUREMENTS OF HIGH-SPEED-AIRPLANE STABILITY AND CONTROL CHARACTERISTICS. Walter C. Williams, Hubert M. Drake, and Jack Fischel. (The information in this report was also contained in a paper by the same authors which was presented to Wind Tunnel and Model Testing Panel of Advisory Group for Aeronautical Research and Development, Brussels, Belgium, August 27-31, 1956). August 1956. 16p. diagrs. (NACA TN 3859)


WIND-TUNNEL INVESTIGATION OF AN EXTERNAL-FLOW JET-AUGMENTED SLOTTED FLAP SUITABLE FOR APPLICATION TO AIRPLANES WITH POD-MOUNTED JET ENGINES. John P. Campbell and Joseph L. Johnson, Jr. December 1956. 47p. diagrs., tab. (NACA TN 3898)


EFFECT OF PROPELLER LOCATION AND FLAP DEFLECTION ON THE AERODYNAMIC CHARACTERISTICS OF A WING-PROPELLER COMBINATION FOR ANGLES OF ATTACK FROM 0° TO 80°. William A. Newsom, Jr. January 1957. 45p. diagrs. (NACA TN 3917)


EFFECTS OF FUSELAGE NOSE LENGTH AND A CANOPY ON THE STATIC LON5ITUDINAL AND LATERAL STABILITY CHARACTERISTICS OF 45° SWEEPBACK AIRPLANE MODELS HAVING FUSELAGES WITH SQUARE CROSS SECTIONS. Byron M. Jaquet and H. S. Fletcher. April 1957. 47p. diagrs., photos., tabs. (NACA TN 3961)


(1.8.1.1.2) Lateral


FLIGHT MEASUREMENTS WITH THE DOUGLAS D-558-II (BUAERO NO. 37974) RESEARCH AIRPLANE. STATIC LATERAL AND DIRECTIONAL STABILITY CHARACTERISTICS AS MEASURED IN SIDESLIPS AT MACH NUMBERS UP TO 0.87. S. A. Sjoberg. May 19, 1950. 29p. diags., photos., tab. (NACA RM L50C14)


CALCULATED LATERAL FREQUENCY RESPONSE AND LATERAL OSCILLATORY CHARACTERISTICS FOR SEVERAL HIGH-SPEED AIRPLANES IN VARIOUS FLIGHT CONDITIONS. Byron M. Jaquet. December 1953. 12p. diags., tabs. (NACA RM L53J01)


A WIND-TUNNEL INVESTIGATION AT HIGH SUBSONIC SPEEDS OF THE LATERAL CONTROL CHARACTERISTICS OF VARIOUS PLAIN SPOILER CONFIGURATIONS ON A 3-PERCENT-THICK 60° DELTA WING. Harleth G. Wiley. May 1954. 45p. diagrs., tabs. (NACA RM L54D01)

SUBSONIC FLIGHT INVESTIGATION OF METHODS TO IMPROVE THE DAMPING OF LATERAL OSCILLATIONS BY MEANS OF A VISCIOUS DAMPER IN THE RUDDER SYSTEM IN CONJUNCTION WITH ADJUSTED HINGE-MOMENT PARAMETERS. Harold L. Crane, George J. Hurt, Jr., and John M. Elliott. June 1954. 46p. diagrs., photos., tab. (NACA RM L54D09)


LOW-SPEED STUDY OF THE EFFECT OF FREQUENCY ON THE STABILITY DERIVATIVES OF WINGS OSCILLATING IN YAW WITH PARTICULAR REFERENCE TO HIGH ANGLE-OF-ATTACK CONDITIONS. John P. Campbell, Joseph L. Johnson, Jr., and Donald E. Hewes. November 1955. 93p. diagrs., photos., tab. (NACA RM L55H05)

THEORETICAL SPAN LOAD DISTRIBUTIONS AND ROLLING MOMENTS FOR SIDESLIPPING WINGS OF ARBITRARY PLAN FORM IN INCOMPRESSIBLE FLOW. M. J. Queijo. 1956. ii, 15p. diagrs. (NACA Rept. 1269. Supersedes TN 3605)


EFFECTS OF FUSELAGE NOSE LENGTH AND A CANOPY ON THE STATIC LONGITUDINAL AND LATERAL STABILITY CHARACTERISTICS OF 45° SWEEPBACK AIRPLANE MODELS HAVING FUSELAGES WITH SQUARE CROSS SECTIONS. Byron M. Jaquet and H. S. Fletcher. April 1957. 47p. diagrs., photos., tabs. (NACA TN 4057)


(1.8.1.1.3) Directional


FLIGHT MEASUREMENTS WITH THE DOUGLAS D-558-II (BUAERO NO. 37974) RESEARCH AIRPLANE. STATIC LATERAL AND DIRECTIONAL STABILITY CHARACTERISTICS AS MEASURED IN SIDESLIPS AT MACH NUMBERS UP TO 0.87. S. A. Sjoberg. May 19, 1950. 29p. diagrs., photos., tab. (NACA RM L50C14)


CALCULATED LATERAL FREQUENCY RESPONSE AND LATERAL OSCILLATORY CHARACTERISTICS FOR SEVERAL HIGH-SPEED AIRPLANES IN VARIOUS FLIGHT CONDITIONS. Byron M. Jaquet. December 1953. 72p. diags., tabs. (NACA RM L53J01)


SUBSONIC FLIGHT INVESTIGATION OF METHODS TO IMPROVE THE DAMPING OF LATERAL OSCILLATIONS BY MEANS OF A VISCOUS DAMPER IN THE Rudder SYSTEM IN CONJUNCTION WITH ADJUSTED HINGE-MOMENT PARAMETERS. Harold L. Crane, George J. Hurt, Jr., and John M. Elliott. June 1954. 46p. diags., photos., tab. (NACA RM L54D09)


LOW-SPEED STUDY OF THE EFFECT OF FREQUENCY ON THE STABILITY DERIVATIVES OF WINGS OSCILLATING IN YAW WITH PARTICULAR REFERENCE TO HIGH ANGLE-OF-ATTACK CONDITIONS. John P. Campbell, Joseph L. Johnson, Jr., and Donald E. Hewes. November 1955. 93p. diags., photos., tab. (NACA RM L55H05)

LOW-SPEED STATIC STABILITY CHARACTERISTICS OF A COMPLETE MODEL WITH AN M-WING IN MID AND HIGH POSITIONS AND WITH THREE HORIZONTAL-TAIL HEIGHTS. Paul G. Fournier. January 1956. 32p. diags. (NACA RM L55J05)

COMPARISON OF FLIGHT AND WIND-TUNNEL MEASUREMENTS OF HIGH-SPEED-AIRPLANE STABILITY AND CONTROL CHARACTERISTICS. Walter C. Williams, Hubert M. Drake, and Jack Fialchel. (The information in this report was also contained in a paper by the same authors which was presented to Wind Tunnel and Model Testing Panel of Advisory Group for Aeronautical Research and Development, Brussels, Belgium, August 27-31, 1956). August 1956. 16p. diags. (NACA TN 3859)


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(1.8.1.2) Dynamic

(1.8.1.2.1) Longitudinal

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LONGITUDINAL STABILITY AND DRAG CHARACTERISTICS AT MACH NUMBERS FROM 0.70 TO 1.37 OF ROCKET-PROPELLED MODELS HAVING A MODIFIED TRIANGULAR WING. Rowe Chapman, Jr., and John D. Morrow. May 1952. 35p. diagrs., photos. (NACA RM L52A31)

FLIGHT INVESTIGATION FROM MACH NUMBER 0.8 TO MACH NUMBER 2.0 TO DETERMINE SOME EFFECTS OF WING-TO-TAIL DISTANCE ON THE LONGITUDINAL STABILITY AND CONTROL CHARACTERISTICS OF A 60° DELTA-WING-CANARD MISSILE. Clarence A. Brown, Jr., and Reginald R. Lundstrom. June 1952. 42p. diagrs., photos. (NACA RM L52C26)


LONGITUDINAL FREQUENCY-RESPONSE AND STABILITY CHARACTERISTICS OF THE DOUGLAS D-558-II AIRPLANE AS DETERMINED FROM TRANSIENT RESPONSE TO A MACH NUMBER OF 0.96. Euclid C. Holleman. September 1952. 35p. diagrs., tabs. (NACA RM L52E02)

THE LONGITUDINAL STABILITY AND CONTROL CHARACTERISTICS OF A 60° DELTA-WING MISSILE HAVING HALF-DELTA TIP CONTROLS AS OBTAINED FROM A FREE-FLIGHT INVESTIGATION AT TRANSONIC AND SUPersonic SPEEDS. Martin T. Moul and Hal T. Baber, Jr. October 1952. 35p. diagrs., photos. (NACA RM L52H14)


FLIGHT INVESTIGATION OF A SUPersonic CANARD MISSILE EQUIPPED WITH AN AUXILIARY DAMPING-IN-PITCH CONTROL SYSTEM. Martin T. Moul. February 1953. 31p. diagrs., photos., tabs. (NACA RM L52K14b)


FREE-FLIGHT LONGITUDINAL-STABILITY INVESTIGATION INCLUDING SOME EFFECTS OF WING ELASTICITY FROM MACH NUMBERS OF 0.85 TO 1.34 OF A TAILLESS MISSILE CONFIGURATION HAVING A 45° SWEEPBACK WING OF ASPECT RATIO 5.5. Richard G. Arbic and Warren Gillespie, Jr. August 1953. 30p. diagrs., photos., tabs. (NACA RM L53F18)


STABILITY DERIVATIVES OF CONES AT SUBSONIC SPEEDS. Murray Tobak and William R. Wehrand. September 1956. 43p. diagrs. (NACA TN 3788)


THEORETICAL INVESTIGATION OF THE EFFECT OF RUDDER AND STABILIZER DEFLECTIONS ON THE ANGLES OF ATTACK AND SIDESLIP IN RAPID ROLLS. C. H. Woodling. March 1957. 43p. diagrs., tabs. (NACA RM L57A30a)


LIFT AND MOMENT RESPONSES TO PENETRATION OF SHARP-EDGED TRAVELING GUSTS, WITH APPLICATION TO PENETRATION OF WEAK BLAST WAVES. Joseph A. Drischler and Franklin W. Diederich. May 1957. 85p. diagrs., tabs. (NACA TN 3956)


(1.8.1.2.2) Lateral and Directional


OBSERVATIONS OF UNSTEADY FLOW PHENOMENA FOR AN INCLINED BODY FITTED WITH STABILIZING FINS. Merrill H. Mead. January 1952. 23p. diagrs., photos. (NACA RM A51K05)


CALCULATED LATERAL FREQUENCY RESPONSE AND LATERAL OSCILLATORY CHARACTERISTICS FOR SEVERAL HIGH-SPEED AIRPLANES IN VARIOUS FLIGHT CONDITIONS. Byron M. Jaquet. December 1953. 72p. diagrs., tabs. (NACA RM L53J01)


SUBSONIC FLIGHT INVESTIGATION OF METHODS TO IMPROVE THE DAMPING OF LATERAL OSCILLATIONS BY MEANS OF A VISCOUS DAMPER IN THE RUDDER SYSTEM IN CONJUNCTION WITH ADJUSTED HINGE-MOMENT PARAMETERS. Harold L. Crane, George J. Hurt, Jr., and John M. Elliott. June 1954. 46p. diagrs., photos., tabs. (NACA RM L54D09)


THEORETICAL INVESTIGATION OF THE EFFECT OF RUDDER AND STABILIZER DEFLECTIONS ON THE ANGLES OF ATTACK AND SIDESLIP IN RAPID ROLLS. C. H. Woodling. March 1957. 43p. diagrs., tabs. (NACA RM L57A30a)


A THEORY FOR THE LATERAL RESPONSE OF AIRPLANES TO RANDOM ATMOSPHERIC TURBULENCE. John M. Eggleston. May 1957. 1, 75p. diagrs., tabs. (NACA TN 3954)

(1.8.1.2.3)

Damping Derivatives


DAMPING IN ROLL OF A MISSILE CONFIGURATION WITH A MODIFIED TRIANGULAR WING AND A CRUCIFORM TAIL AT A MACH NUMBER OF 1.52. Richard Scherrer and David H. Dennis. March 6, 1951. 23p. diagrs., photo., tab. (NACA RM A51A03)

FLIGHT INVESTIGATION AT SUBSONIC, TRANSONIC, AND SUPERSONIC VELOCITIES OF THE HINGE-MOMENT CHARACTERISTICS, LATERAL-CONTROL EFFECTIVENESS, AND WING DAMPING IN ROLL OF A 60° SWEPTBACK DELTA WING WITH HALF-DELTA TIP AILERONS. (Revised.) C. William Martz and James D. Church. September 1951. 32p. diagrs., photos. (NACA RM L51G06)

DAMPING IN ROLL OF ROCKET-POWERED TEST VEHICLES HAVING SWEPT, TAPERED WINGS OF LOW ASPECT RATIO. E. Claude Sanders, Jr., and James L. Edmondson. October 1951. 25p. diagrs., photos., tab. (NACA RM L51G18)

LONGITUDINAL STABILITY AND DRAG CHARACTERISTICS AT MACH NUMBERS FROM 0.70 TO 1.37 OF ROCKET-PROPELLED MODELS HAVING A MODIFIED TRIANGULAR WING. Rowe Chapman, Jr., and John D. Morrow. May 1952. 35p. diagrs., photos., tab. (NACA RM L52A31)


LONGITUDINAL FREQUENCY-RESPONSE AND STABILITY CHARACTERISTICS OF THE DOUGLAS D-558-II AIRPLANE AS DETERMINED FROM TRANSIENT RESPONSE TO A MACH NUMBER OF 0.96. Euclid C. Holleman. September 1952. 35p. diagrs., tabs. (NACA RM L52E02)


FREE-FLIGHT LONGITUDINAL-STABILITY INVESTIGATION INCLUDING SOME EFFECTS OF WING ELASTICITY FROM MACH NUMBERS OF 0.85 TO 1.34 OF A TAILLESS MISSILE CONFIGURATION HAVING A 45° SWEPTBACK WING OF ASPECT RATIO 5.5. Richard G. Arbic and Warren Gillespie, Jr. August 1953. 50p. diagrs., photos., tabs. (NACA RM L53F16)


CALCULATED LATERAL FREQUENCY RESPONSE AND LATERAL OSCILLATORY CHARACTERISTICS FOR SEVERAL HIGH-SPEED AIRPLANES IN VARIOUS FLIGHT CONDITIONS. Byron M. Jaquet. December 1953. 72p. diagrs., tabs. (NACA RM L53J01)


FLIGHT INVESTIGATION OF THE ROLLING EFFECTIVENESS OF FINGERED SEMAPHORE SPOILERS ON A TAPERED 45° SWEPTBACK WING BETWEEN MACH NUMBERS 0.6 AND 1.3. James D. Church. January 1954. 27p. diagrs., photos. (NACA RM L53K20)


EFFECT OF WING FLEXIBILITY ON THE DAMPING IN ROLL OF A NOTCHED DELTA WING-BODY COMBINATION BETWEEN MACH NUMBERS 0.6 AND APPROXIMATELY 2.3 AS DETERMINED WITH ROCKET-PROPELLED MODELS. William M. Bland, Jr. June 1954. 20p. diagrs., photos. (NACA RM L54E04)


LOW-SPEED STUDY OF THE EFFECT OF FREQUENCY ON THE STABILITY DERIVATIVES OF WINGS OSCILLATING IN YAW WITH PARTICULAR REFERENCE TO HIGH ANGLE-OF-ATTACK CONDITIONS. John P. Campbell, Joseph L. Johnson, Jr., and Donald E. Hewes. November 1955. 93p. diagrs., photos., tab. (NACA RM L55B05)


EXPERIMENTAL STEADY-STATE YAWING DERIVATIVES OF A 60° DELTA-WING MODEL AS AFFECTED BY CHANGES IN VERTICAL POSITION OF THE WING AND IN RATIO OF FUSELAGE DIAMETER TO WING SPAN. Byron M. Jaquet and Herman S. Fletcher. October 1956. 20p. diagrs., tab. (NACA TN 3843)

(1) AERODYNAMICS


(1.8.2) CONTROL


(1.8.2.1) LONGITUDINAL

FLIGHT-TEST EVALUATION OF THE LONGITUDINAL STABILITY AND CONTROL CHARACTERISTICS OF 0.5-SCALE MODELS OF THE LARK PILOTLESS-AIRCRAFT CONFIGURATION. David G. Stone. February 6, 1948. 60p. diagrs., photos., tabs. (NACA RM L7126)


RESULTS OBTAINED DURING A DIVE RECOVERY OF THE BELL XS-1 AIRPLANE TO HIGH LIFT COEFFICIENTS AT A MACH NUMBER GREATER THAN 1.0. Milton D. McLaughlin and Dorothy C. Clift. April 6, 1948. 6p. diagrs. (NACA RM L8C23a)

RESULTS OBTAINED DURING ACCELERATED TRANSONIC TESTS OF THE BELL XS-1 AIRPLANE IN FLIGHTS TO A MACH NUMBER OF 0.92. Hubert M. Drake, Milton D. McLaughlin, and Harold R. Goodman. April 19, 1948. 23p. diagrs., tab. (NACA RM L8A05a)


FLIGHT MEASUREMENTS WITH THE DOUGLAS D-558-II (BUAERO NO. 37974) RESEARCH AIRPLANE. STATIC LONGITUDINAL STABILITY AND CONTROL CHARACTERISTICS AT MACH NUMBERS UP TO 0.87. S. A. Sjoberg, James R. Peele, and John H. Griffith. January 17, 1951. 48p. diagrs., photos., tab. (NACA RM L9K13)


A LOW-SPEED INVESTIGATION OF THE AERO-DYNAMIC, CONTROL, AND HINGE-MOMENT CHARACTERISTICS OF TWO TYPES OF CONTROLS AND BALANCING TABS ON A LARGE-SCALE THIN DELTA-WING—FUSELAGE MODEL. Marvin P. Fink and Bennie W. Cocke. March 1954. 69p. diagrs., photo., tabs. (NACA RM L54B03)


ROCKET-POWERED-MODEL INVESTIGATION OF THE HINGE-MOMENT AND NORMAL-FORCE CHARACTERISTICS OF A HALF-DIAMOND TIP CONTROL ON A 60° SWEEPBACK DIAMOND WING BETWEEN MACH NUMBERS OF 0.5 AND 1.3. James D. Church. April 1954. 30p. diagrs., photos., tab. (NACA RM L54C10)

FLIGHT INVESTIGATION TO DETERMINE LIFT AND DRAG CHARACTERISTICS OF A CANARD RAM-JET MISSILE CONFIGURATION IN THE MACH NUMBER RANGE OF 0.8 TO 2.0. Abraham A. Gammai and Thomas L. Kennedy. June 1954. 20p. diagrs., photos., tab. (NACA RM L54D28)


GROUND EFFECTS ON THE LONGITUDINAL CHARACTERISTICS OF TWO MODELS WITH WINGS HAVING LOW ASPECT RATIO AND POINTED TIPS. Donald A. Buell and Bruce E. Tinling. July 1955. 48p. diagrs., photos., tabs. (NACA RM A55E04)


COMPARISON OF FLIGHT AND WIND-TUNNEL MEASUREMENTS OF HIGH-SPEED-AIRPLANE STABILITY AND CONTROL CHARACTERISTICS. Walter C. Williams, Hubert M. Drake, and Jack Fischel. (The information in this report was also contained in a paper by the same authors which was presented to Wind Tunnel and Model Testing Panel of Advisory Group for Aeronautical Research and Development, Brussels, Belgium, August 27-31, 1956). August 1956. 16p. diagrs. (NACA TN 3859)


WIND-TUNNEL INVESTIGATION OF AN EXTERNAL-FLOW JET-AUGMENTED SLOTTED FLAP SUITABLE FOR APPLICATION TO AIRPLANES WITH POD-MOUNTED JET ENGINES. John P. Campbell and Joseph L. Johnson, Jr. December 1956. 47p. diagrs., tab. (NACA TN 3898)

THEORETICAL INVESTIGATION OF THE EFFECT OF RUDDER AND STABILIZER DEFLECTIONS ON THE ANGLES OF ATTACK AND SIDESLIP IN RAPID ROLLS. C. H. Woodling. March 1957. 43p. diagrs., tabs. (NACA RM L57A30a)


LIFT AND MOMENT RESPONSES TO PENETRATION OF SHARP-EDGED TRAVELING GUSTS, WITH APPLICATION TO PENETRATION OF WEAK BLAST WAVES. Joseph A. Drischler and Franklin W. Diederich. May 1957. 85p. diagrs., tabs. (NACA TN 3956)

SOME EFFECTS OF VALVE FRICTION AND STICK FRICTION ON CONTROL QUALITY IN A HELICOPTER WITH HYDRAULIC-POWER CONTROL SYSTEMS. B. Porter Brown and John P. Reeder. May 1957. 8p. diagr. (NACA TN 4004)


AERODYNAMICS


FLIGHT INVESTIGATION AT SUBSONIC, TRAN­SONIC, AND SUPERSONIC VELOCITIES OF THE HINGE-MOMENT CHARACTERISTICS, LATERAL-CONTROL EFFECTIVENESS, AND WING DAMPING IN ROLL OF A 60° SWEPTBACK DELTA WING WITH HALF-DELTA TIP AILERONS. (Revised.) C. William Martz and James D. Church. September 1951. 32p. diagrams, photos. (NACA RM L5G18)


FREE-FLIGHT INVESTIGATION TO DETERMINE FORCE AND HINGE-MOMENT CHARACTERISTICS AT ZERO ANGLE OF ATTACK OF A 60° SWEPTBACK HALF-DELTA TIP CONTROL ON A 60° SWEPTBACK DELTA WING AT MACH NUMBERS BETWEEN 0.68 AND 1.44. C. William Martz, James D. Church, and John W. Goslee. December 1951. 36p. diagrams, photos. (NACA RM L51114)


SOME EFFECTS OF AEROELASTICITY AT MACH NUMBERS FROM 0.7 TO 1.6 ON THE ROLLING EF­FECTIVENESS OF THIN FLAT-PLATE DELTA WINGS HAVING 45° SWEPT LEADING EDGES AND FULL-SPAN CONSTANT-CHORD AILERONS. Edward T. Marley and Roland D. English. February 1952. 14p. diagrams, photos. (NACA RM L51L05)


AN INVESTIGATION AT SUBSONIC SPEEDS OF THE ROLLING EFFECTIVENESS OF A SMALL PERFO­LATED SPOILER ON A WING HAVING 45° OF SWEPTBACK. Angelo Bandettini. September 1952. 37p. diagrams, photos. (NACA RM A52G02)

INVESTIGATION OF VANES IMMERSED IN THE JET OF A SOLID-FUEL ROCKET MOTOR. Leo V. Giladett and Andrew R. Wineman. September 1952. 30p. diagrams, photos, tables. (NACA RM L52F12)

ROCKET-MODEL INVESTIGATION TO DETER­MINE THE FORCE AND HINGE-MOMENT CHAR­ACTERISTICS OF A HALF-DELTA TIP CONTROL ON A 59° SWEPTBACK DELTA WING BETWEEN MACH NUMBERS OF 0.55 AND 1.43. C. William Martz, James D. Church, and John W. Goslee. October 1952. 53p. diagrams, photos, tables. (NACA RM L52H06)

CONTROL HINGE-MOMENT AND EFFECTIVENESS CHARACTERISTICS OF A 60° HALF-DELTA TIP CONTROL ON A 60° DELTA WING AT MACH NUMBERS OF 1.41 AND 1.96. Lawrence D. Guy. October 1952. 40p. diagrams, photos, tables. (NACA RM L52H13)

SOME EFFECTS OF SPOILER HEIGHT, WING FLEXIBILITY, AND WING THICKNESS ON ROLLING EFFECTIVENESS AND DRAG OF UNSWEPT WINGS AT MACH NUMBERS BETWEEN 0.4 AND 1.7. E. M. Fields. October 1952. 20p. diagrams, photos. (NACA RM L52H18)
CONTROL CHARACTERISTICS OF TRAILING-EDGE SPOILERS ON UNTAPERED BLUNT-TIP DELTA WINGS WITH ASPECT RATIO 2.7 WITH 0° AND 45° SWEEPBACK AT MACH NUMBERS OF 1.41 AND 1.96. Carl R. Jacobsen. December 1952. 35p. diagrs., photo. (NACA RM L52172)


SOME EFFECTS OF LEADING-EDGE ROUGHNESS ON THE AILERON EFFECTIVENESS AND DRAG OF A THIN RECTANGULAR WING EMPLOYING A FULL-SPAN PLAIN AILERON AT MACH NUMBERS FROM 0.6 TO 1.5. Roland D. English. November 1953. 16p. diagrs., photos. (NACA RM L53J25)


CALCULATED LATERAL FREQUENCY RESPONSE AND LATERAL OSCILLATORY CHARACTERISTICS FOR SEVERAL HIGH-SPEED AIRPLANES IN VARIOUS FLIGHT CONDITIONS. Byron M. Jaquet. December 1953. 75p. diagrs., tabs. (NACA RM L53J01)


FLIGHT INVESTIGATION OF THE ROLLING EFFECTIVENESS OF FINGERED SEMAPHORE SPOILERS ON A TAPERED 45° SWEEPBACK WING BETWEEN MACH NUMBERS 0.6 AND 1.3. James D. Church. January 1954. 27p. diagrs., photos. (NACA RM L53K20)


A LOW-SPEED INVESTIGATION OF THE AERODYNAMIC, CONTROL, AND HINGE-MOMENT CHARACTERISTICS OF TWO TYPES OF CONTROLS AND BALANCING TABS ON A LARGE-SCALE THIN DELTA-WING-FUSELAGE MODEL. Marvin P. Fink and Bennie W. Cocke. March 1954. 69p. diagrs., photo., tabs. (NACA RM L54B03)


A WIND-TUNNEL INVESTIGATION AT HIGH SUBSONIC SPEEDS OF THE LATERAL CONTROL CHARACTERISTICS OF VARIOUS PLAIN SPOILER CONFIGURATIONS ON A 3-PERCENT-THICK 60° DELTA WING. Harleth G. Wiley. May 1954. 45p. diagrs., tabs. (NACA RM L54D01)

SUBSONIC FLIGHT INVESTIGATION OF METHODS TO IMPROVE THE DAMPING OF LATERAL OSCILLATIONS BY MEANS OF A VISCOS DAMPER IN THE Rudder SYSTEM IN CONJUNCTION WITH ADJUSTED HINGE-MOMENT PARAMETERS. Harold L. Crane, George J. Hurt, Jr., and John M. Elliott. June 1954. 46p. diagrs., photos., tab. (NACA RM L54D09)
(1) AERODYNAMICS


COMPARISON OF FLIGHT AND WIND-TUNNEL MEASUREMENTS OF HIGH-SPEED-AIRPLANE STABILITY AND CONTROL CHARACTERISTICS. Walter C. Williams, Hubert M. Drake, and Jack Fischel. (The information in this report was also contained in a paper by the same authors which was presented to Wind Tunnel and Model Testing Panel of Advisory Group for Aeronautical Research and Development, Brussels, Belgium, August 27-31, 1956.) August 1956. 16p. diagrs. (NACA TN 3859)


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SOME EFFECTS OF VALVE FRICTION AND STICK FRICTION ON CONTROL QUALITY IN A HELICOPTER WITH HYDRAULIC-POWER CONTROL SYSTEMS. B. Porter Brown and John P. Reeder. May 1957. 8p. diagr. (NACA TN 4004)
(1.8.2.3)

DIRECTIONAL

WIND-TUNNEL INVESTIGATION OF A RAM-JET CANARD MISSILE MODEL HAVING A WING AND CANARD SURFACES OF DELTA PLAN FORM WITH 70° SWEPT LEADING EDGES. LONGITUDINAL AND LATERAL STABILITY AND CONTROL CHARACTERISTICS AT A MACH NUMBER OF 1.60.

CALCULATED LATERAL FREQUENCY RESPONSE AND LATERAL OSCILLATORY CHARACTERISTICS FOR SEVERAL HIGH-SPEED AIRPLANES IN VARIOUS FLIGHT CONDITIONS. Byron M. Jaquez. December 1953. 72p. diagrs., tabs. (NACA RM L53J01)

SUBSONIC FLIGHT INVESTIGATION OF METHODS TO IMPROVE THE DAMPING OF LATERAL OSCILLATIONS BY MEANS OF A VISCOUS DAMPER IN THE RUDDER SYSTEM IN CONJUNCTION WITH ADJUSTED HINGE-MOMENT PARAMETERS. Harold L. Crane, George J. Hutt, Jr., and John M. Elliott. June 1954. 46p. diagrs., photos., tab. (NACA RM L54D09)


(1.8.2.4)

AIR BRAKES


(1.8.2.5)

HINGE MOMENTS


FLIGHT INVESTIGATION AT SUBSONIC, TRANSONIC, AND SUPERSONIC VELOCITIES OF THE HINGE-MOMENT CHARACTERISTICS, LATERAL CONTROL EFFECTIVENESS, AND WING DAMPING IN ROLL OF A 60° SWEPTBACK DELTA WING WITH HALF-DELTA TIP AILERONS. (Revised.) C. William Marts and James D. Church. September 1951. 32p. diagrs., photos. (NACA RM L51G18)


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**Abbreviations**

- NACA RM: National Advisory Committee for Aeronautics Report
- RM: Report Number
- L: Report Series
- H: Report Series
- M: Report Series
- A: Report Series
- J: Report Series
- G: Report Series
- C: Report Series
- D: Report Series
- F: Report Series
- L: Report Series
- W: Report Series
- I: Report Series
- H: Report Series
- B: Report Series

**References**

1. **FLIGHT INVESTIGATION FROM MACH NUMBER 0.8 TO MACH NUMBER 2.0 TO DETERMINE SOME EFFECTS OF WING-TO-TAIL DISTANCE ON THE LATERAL STABILITY AND CONTROL CHARACTERISTICS OF A 60° DELTA-WING-MISSILE.** Clarence A. Brown, Jr., and Reginald R. Lundstrom. June 1952. 42p. diags., photos. (NACA RM L52F12)


11. **ROCKET-POWERED-MODEL INVESTIGATION OF THE HINGE-MOMENT AND NORMAL-FORCE CHARACTERISTICS OF A HALF-DIAMOND TIP CONTROL ON A 60° SWEPTBACK DIAMOND WING BETWEEN MACH NUMBERS OF 0.5 AND 1.3.** James D. Church. April 1954. 36p. diags., photos., tab. (NACA RM L54C10)

12. **SUBSONIC FLIGHT INVESTIGATION OF METHODS TO IMPROVE THE DAMPING OF LATERAL OSCILLATIONS BY MEANS OF A VISCOS DAMPER IN THE RUDDER SYSTEM IN CONJUNCTION WITH ADJUSTED HINGE-MOMENT PARAMETERS.** Harold L. Crane, George J. Hurt, Jr., and John M. Elliott. June 1954. 46p. diags., photos., tab. (NACA RM L54D09)


| GROUN D EFFEC T S ON C HARA C TERI S TICS OF TWO MODELS HAVING LOW ASP E CT RATIO AND TOP PITCH |
THE APPLICATION OF MATRIX METHODS TO COORDINATE TRANSFORMATIONS OCCURRING IN SYSTEMS STUDIES INVOLVING LARGE MOTIONS OF AIRCRAFT. Brian F. Doolin. May 1957. 39p. (NACA TN 3968)


(1.8.3) SPINNING


(1.8.4) STALLING

RESULTS OBTAINED DURING ACCELERATED TRANSONIC TESTS OF THE BELL XS-1 AIRPLANE IN FLIGHTS TO A MACCH NUMBER OF 0.92. Hubert M. Drake, Milton D. McLaughlin, and Harold R. Goodman. April 19, 1946. 22p. diags., tab. (NACA RM L8A05a)


BUFFETING INFORMATION OBTAINED FROM ROCKET-PROPELLED AIRPLANE MODELS HAVING THIN UNSWEPT WINGS. Clarence L. Gillis. October 18, 1950. 15p. diags., photos. (NACA RM L50H22a)


LOW-SPEED WIND-TUNNEL INVESTIGATION OF LEADING-EDGE POROUS SUCTION ON A 4-


FULL-SCALE WIND TUNNEL TESTS OF A 35° SWEPTBACK WING AIRPLANE WITH HIGH-


A CORRELATION OF LOW-SPEED, AIRFOIL-SECTION STALLING CHARACTERISTICS WITH REYNOLDS NUMBER AND AIRFOIL GEOMETRY. Donald E. Gault. March 1957. 9p. diagrs., tab. (NACA TN 3943)


FLYING QUALITIES

RESULTS OBTAINED DURING ACCELERATED TRANSONIC TESTS OF THE BELL XS-1 AIRPLANE IN FLIGHTS TO A MACH NUMBER OF 0.92. Hubert M. Drake, Milton D. McLaughlin, and Harold R. Goodman. April 19, 1948. 22p. diagrs., photos., tab. (NACA RM L54A05a)


BUFFETING INFORMATION OBTAINED FROM ROCKET-PROPELLED AIRPLANE MODELS HAVING THIN UNSWEEPED WINGS. Clarence L. Gillis. October 18, 1950. 15p. diagrs., photos. (NACA RM L50H22a)


LONGITUDINAL STABILITY AND DRAG CHARACTERISTICS AT MACH NUMBERS FROM 0.70 TO 1.37 OF ROCKET-PROPELLED MODELS HAVING A MODIFIED TRIANGULAR WING. Rowe Chapman, Jr., and John D. Morrow. May 1952. 35p. diagrs., photos., tab. (NACA RM L52A31)


(1) AERODYNAMICS


CALCULATED LATERAL FREQUENCY RESPONSE AND LATERAL OSCILLATORY CHARACTERISTICS FOR SEVERAL HIGH-SPEED AIRPLANES IN VARIOUS FLIGHT CONDITIONS. Byron M. Jaquet. December 1953. 12p. diagrs., tabs. (NACA RM L53J01)

SUBSONIC FLIGHT INVESTIGATION OF METHODS TO IMPROVE THE DAMPING OF LATERAL OSCILLATIONS BY MEANS OF A VISCOS DAMPER IN THE RUDDER SYSTEM IN CONJUNCTION WITH ADJUSTED HINGE-MOMENT PARAMETERS. Harold L. Crane, George J. Hurl, Jr., and John M. Elliott. June 1954. 46p. diagrs., photos., tab. (NACA RM L54D09)


(1.8.6)

MASS AND GYROSCOPIC PROBLEMS


AN ANALYTICAL STUDY OF SIDESLIP ANGLES AND VERTICAL-TAIL LOADS IN ROLLING PULLOUTS AS AFFECTED BY SOME CHARACTERISTICS OF MODERN HIGH-SPEED AIRPLANE CONFIGURATIONS. Ralph W. Stone, Jr. October 1955. 41p. diagrs., tabs. (NACA RM L53G21)


RECENT STABILITY AND AERODYNAMIC PROBLEMS AND THEIR IMPLICATIONS AS TO LOAD ESTIMATION. Charles H. Zimmerman. 28 p. diagrs., tables. (NACA RM L55G05)


THEORETICAL INVESTIGATION OF THE EFFECT OF RUDDER AND STABILIZER DEFLECTIONS ON THE ANGLES OF ATTACK AND SIDELIPS IN RAPID ROLLS. C. H. Woodling. March 1957. 43 p. diagrs., tabs. (NACA RM L57A30a)

(1.8.8) AUTOMATIC STABILIZATION


FLIGHT INVESTIGATION OF A SUPERSONIC CANARD MISSILE EQUIPPED WITH AN AUXILIARY DAMPING-IN-PITCH CONTROL SYSTEM. Martin T. Moul. February 1955. 31 p. diagrs., photos., tabs. (NACA RM L52K14b)


STUDY OF THE ATTACK OF AN AUTOMATICALLY CONTROLLED INTERCEPTOR ON A MANEUVERING BOMBER WITH EMPHASIS ON PROPER COORDINATION OF LIFT-ACCELERATION AND ROLL-ANGLE COMMANDS DURING ROLLING MANEUVERS. Charles W. Mathews. August 1954. 52 p. diagrs., photos., tabs. (NACA RM L54B27)


(1) AERODYNAMICS


THE APPLICATION OF MATRIX METHODS TO COORDINATE TRANSFORMATIONS OCCURRING IN SYSTEMS STUDIES INVOLVING LARGE MOTIONS OF AIRCRAFT. Brian F. Doolin. May 1957. 36p. (NACA TN 3968)
AERODYNAMIC STUDY OF A WING-FUSELAGE COMBINATION EMPLOYING A WING SWEPT BACK 63° - EFFECT OF REYNOLDS NUMBER AT SUPERSONIC MACH NUMBERS ON THE LATERAL STABILITY CHARACTERISTICS OF A WING TWISTED AND CAMBERED FOR UNIFORM LOAD. John C. Heitmeier. October 9, 1950. 36p. diags., photos. (NACA RM A50G10)


SOME EFFECTS OF AEROELASTICITY AT MACH NUMBERS FROM 0.7 TO 1.6 ON THE ROLLING EFFECTIVENESS OF THIN FLAT-PLATE DELTA WINGS HAVING 45° SWEPT LEADING EDGES AND FULL-SPAN CONSTANT-CHORD AILERONS. Edward T. Marley and Roland D. English. February 1952. 14p. diags., photo. (NACA RM L51L05)


SOME EFFECTS OF SPOILER HEIGHT, WING FLEXIBILITY, AND WING THICKNESS ON ROLLING EFFECTIVENESS AND DRAG OF UNSWEPT WINGS AT MACH NUMBERS BETWEEN 0.4 AND 1.7. E. M. Fields. October 1952. 20p. diag., photo. (NACA RM L52H18)


FREE-FLIGHT LONGITUDINAL-STABILITY INVESTIGATION INCLUDING SOME EFFECTS OF WING ELASTICITY FROM MACH NUMBERS OF 0.85 TO 1.34 OF A TAILLESS MISSILE CONFIGURATION HAVING A 45° SWEPTBACK WING OF ASPECT RATIO 5.5. Richard G. Arbic and Warren Gillespie, Jr. August 1953. 30p. diags., photos., tabs. (NACA RM L53F18)


FLIGHT INVESTIGATION OF AN AILERON AND A SPOILER ON A WING OF THE X-3 AIRPLANE PLAN FORM AT MACH NUMBERS FROM 0.5 TO 1.6. Roland D. English. June 1954. 16p. diags., photos. (NACA RM L54D26a)

EFFECT OF WING FLEXIBILITY ON THE DAMPING IN ROLL OF A NOTCHED DELTA WING-BODY COMBINATION BETWEEN MACH NUMBERS 0.6 AND APPROXIMATELY 2.2 AS DETERMINED WITH ROCKET-PROPELLED MODELS. William M. Bland, Jr. June 1954. 20p. diags., photos. (NACA RM L54E04)
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(1.10)
Parachutes

HYDRODYNAMICS
(2.1) Theory

WATER-IMPACT THEORY FOR AIRCRAFT EQUIPPED WITH NONTRIMMING HYDRO-SKIS MOUNTED ON SHOCK STRUTS. Emanuel Schnitzer. October 1954. 29p. diagrs. (NACA RM L54H10)

THE HYDRODYNAMIC CHARACTERISTICS OF MODIFIED RECTANGULAR FLAT PLATES HAVING ASPECT RATIOS OF 1.00, 0.25, AND 0.125 AND OPERATING NEAR A FREE WATER SURFACE. Kenneth L. Wadlin, John A. Ramsen, and Victor L. Vaughan, Jr. 1955. ii, 50p. diagrs., photos. (NACA Rept. 1246. Supersedes TN 3079; TN 3249)


THEORETICAL DETERMINATION OF WATER LOADS ON PITCHING HULLS AND SHOCK-MOUNTED HYDRO-SKIS. Emanuel Schnitzer. October 1956. 65p. diagrs., tab. (NACA RM L56E31)

IMPACT-LOADS INVESTIGATION OF CHINE-IMMERSED MODELS HAVING CONCAVE-CONVEX TRANSVERSE SHAPE AND STRAIGHT OR CURVED KEEL LINES. Philip M. Edge, Jr. February 1957. 66p. diagrs., photos., tabs. (NACA TN 3940)

(2.2) General Arrangement Studies


WATER-IMPACT THEORY FOR AIRCRAFT EQUIPPED WITH NONTRIMMING HYDRO-SKIS MOUNTED ON SHOCK STRUTS. Emanuel Schnitzer. October 1954. 29p. diagrs. (NACA RM L54H10)


(2.3) Seaplane Hull Variables

PLANING CHARACTERISTICS OF SIX SURFACES REPRESENTATIVE OF HYDRO-SKI FORMS.
Kenneth L. Wadlin and John R. McGeehee.
February 10, 1950. 150p. diagrs., photos., tab. (NACA RM L9L20)

IMPACT-LOADS INVESTIGATION OF CHINE-IMMERSED MODELS HAVING CONCAVE-CONVEX TRANSVERSE SHAPE AND STRAIGHT OR CURVED KEEL LINES. Philip M. Edge, Jr. February 1957. 66p. diagrs., photos., tabs. (NACA TN 3940)

(2.3.1) LENGTH-BEAM RATIO


(2.3.2) DEAD RISE

PLANING CHARACTERISTICS OF SIX SURFACES REPRESENTATIVE OF HYDRO-SKI FORMS.
Kenneth L. Wadlin and John R. McGeehee.
February 10, 1950. 150p. diagrs., photos., tab. (NACA RM L9L20)


(2.3.4) AFTERBODY SHAPE


HYDRODYNAMIC PRESSURE DISTRIBUTION OBTAINED WITH A STREAMLINE BODY EQUIPPED WITH CHINE STRIPS. Bernard Welnflash. September 1955. 28p. diagrs., photos., tabs. (NACA RM L55F20)
(2.3.5) FOREBODY SHAPE


(2.3.6) CHINES


HYDRODYNAMIC PRESSURE DISTRIBUTION OBTAINED WITH A STREAMLINE BODY EQUIPPED WITH CHINE STRIPS. Bernard Weinflash. September 1955. 29p. diagrs., photos., tabs. (NACA RM L55F20)

(2.4) Specific Seaplanes and Hulls

(2.5) Lateral Stabilizers

(2.5.1) WING-TIP FLOAT


HYDRODYNAMIC PRESSURE DISTRIBUTION OBTAINED WITH A STREAMLINE BODY EQUIPPED WITH CHINE STRIPS. Bernard Weinflash. September 1955. 29p. diagrs., photos., tabs. (NACA RM L55F20)
(2.6) Planing Surfaces

Planing Characteristics of Six Surfaces Representative of Hydro-Ski Forms.

Tank Investigation of the Grumman JRF-5 Airplane Fitted with Hydro-Skis Suitable for Operation on Water, Snow, and Ice.

Tank Investigation of the Grumman JRF-5 Airplane with a Single Hydro-Ski and an Extended Afterbody.

Force Characteristics in the Submerged and Planing Condition of a 1/5.78-Scale Model of a Hydro-Ski-Wheel Combination for the Grumman JRF-5 Airplane.

Preliminary Tank Tests of Some Hydro-Ski-Wheel Combinations in the Planing Condition.

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THE HYDRODYNAMIC CHARACTERISTICS OF MODIFIED RECTANGULAR FLAT PLATES HAVING ASPECT RATIOS OF 1.00, 0.25, AND 0.125 AND OPERATING NEAR A FREE WATER SURFACE. Kenneth L. Wadlin, John A. Ramsen, and Victor L. Vaughan, Jr. 1955. ii, 50p. diagrs., photos. (NACA Rept. 1246. Supersedes TN 3079; TN 3249)

THEORETICAL DETERMINATION OF WATER LOADS ON PITCHING HULLS AND SHOCK-MOUNTED HYDRO-SKIS. Emanuel Schnitzer. October 1956. 65p. diagrs., tab. (NACA RM L56E31)


HYDRODYNAMIC CHARACTERISTICS OVER A RANGE OF SPEEDS UP TO 80 FEET PER SECOND OF A RECTANGULAR MODIFIED FLAT PLATE HAVING AN ASPECT RATIO OF 0.25 AND OPERATING AT SEVERAL DEPTHS OF SUBMERSION. Victor L. Vaughan, Jr., and John A. Ramsen. April 1957. 23p. diagrs. (NACA TN 3908)
(2.8) Surface Craft

WATER-IMPACT THEORY FOR AIRCRAFT EQUIPPED WITH NONTRIMMING HYDRO-SKIS MOUNTED ON SHOCK STRUTS. Emanuel Schnitzer. October 1954. 29p. diagrs. (NACA RM L54H10)
(2.9) Ditching Characteristics


(2.10) Stability and Control

(2.10.1) Longitudinal

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PROPULSION
(3.1)  Complete Systems


(3.1.1)  Reciprocating Engines


(3.1.3)  Turbojet Engines


SOME DYNAMIC CHARACTERISTICS OF A TURBOJET ENGINE FOR LARGE ACCELERATIONS. Herbert Heppler, David Novik, and Marcel Dandois. August 1952. 20p. diagrs., photos. (NACA RM E52H04)


PROPOSED INITIATING SYSTEM FOR CRASH-FIRE PREVENTION SYSTEMS. Jacob C. Moaser and Dugald O. Black. December 1956. 18p. diagrs. (NACA TN 3774)


EFFECT OF STANDING TRANSVERSE ACOUSTIC OSCILLATIONS ON FUEL-OXIDANT MIXING IN CYLINDRICAL COMBUSTION CHAMBERS. William R. Mickelsen. May 1957. (i), 48p. diagrs. (NACA TN 3983)


(3.1.4) TURBO-PROPELLER ENGINES


PROPOSED INITIATING SYSTEM FOR CRASH-FIRE PREVENTION SYSTEMS. Jacob C. Moser and Dugald O. Black. December 1956. 18p. diagrs. (NACA TN 3774)

(3.1.6) PULSE-JET ENGINES


(3.1.7) RAM-JET ENGINES

(3) PROPULSION


AN EXPERIMENTAL INVESTIGATION OF THE COMBUSTION PROPERTIES OF A HYDROCARBON FUEL AND SEVERAL MAGNESIUM AND BORON SLURRIES. Albert M. Lord. April 1952. 30p. diagrs. (NACA RM E52B01)


PERFORMANCE COMPARISON OF THREE CANARD-TYPE RAM-JET MISSILE CONFIGURATIONS AT MACH NUMBERS FROM 1.5 TO 2.0. Evan A. Fradenburgh and Emil J. Kremzier. August 1953. 31p. diagrs., tabs. (NACA RM E53F11)


AN EXPERIMENTAL INVESTIGATION OF A FLAT RAM-JET ENGINE ON A HELICOPTER ROTOR. Robert D. Powell, Jr., and James P. Shivers. January 1956. 27p. diagrs., photo. (NACA RM L55F28)


EFFECT OF STANDING TRANSVERSE OSCILLATIONS ON FUEL-OXIDANT MIXING IN CYLINDRICAL COMBUSTION CHAMBERS. William R. Mickelsen. May 1957. (i), 49p. diagrs. (NACA TN 3983)

(3.1.8) ROCKET ENGINES


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<td>Virginia E. Morrell</td>
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<td>INVESTIGATION OF VANES IMMERSED IN THE JET OF A SOLID-FUEl ROCKET MOTOR</td>
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(3) PROPULSION

HYDROGEN-OXYGEN EXPLOSIONS IN EXHAUST DUCTING. Paul M. Ordin. April 1957. 31p. diagrs., photos., tab. (NACA TN 3935)


EFFECT OF STANDING TRANSVERSE ACOUSTIC OSCILLATIONS ON FUEL-OXIDANT MIXING IN CYLINDRICAL COMBUSTION CHAMBERS. William R. Mickelsen. May 1957. (i), 49p. diagrs. (NACA TN 3983)

(3.1.9) JET-DRIVEN ROTORS


AN EXPERIMENTAL INVESTIGATION OF A FLAT RAM-JET ENGINE ON A HELICOPTER ROTOR. Robert D. Powell, Jr., and James P. Shivers. January 1956. 27p. diagrs., photo. (NACA RM L55F28)


CHARTS FOR THE ANALYSIS OF FLOW IN A WHIRLING DUCT. Robert A. Makofski. May 1957. 21p. diagrs. (NACA TN 3950)

(3.1.10) NUCLEAR-ENERGY SYSTEMS


(3.2)

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Analysis of a form of peak holding control. G. J. Delio. March 1956. 57p. diagrs. (NACA RM E56B10)

Radiation and recovery corrections and time constants of several chromel-alumel thermocouple probes in high-temperature, high-velocity gas streams. George E. Glawe, Frederick S. Simmons, and Truman M. Stickney. October 1956. 25p. diagrs., photo., tabs. (NACA TN 3766)

(3.2.2)

Control of Turbojet Engines


(3.2.4)

Control of Turbine-Propeller Engines

Auxiliary Booster Systems

(3.3.2) GAS TURBINES


EXPLORATORY STUDY OF GROUND PROXIMITY EFFECTS ON THRUST OF ANNULAR AND CIRCULAR NOZZLES. Uwe H. von Glahn. April 1957. 48p. diagrs., photos. (NACA TN 3982)

(3.3.2.1) LIQUID INJECTION


(3.3.2.2) AFTERBURNING


EFFECT OF STANDING TRANSVERSE ACOUSTIC OSCILLATIONS ON FUEL-OXIDANT MIXING IN CYLINDRICAL COMBUSTION CHAMBERS. William R. Mickelsen. May 1957. (i), 49p. diagrs. (NACA TN 3963)
(3.4) Fuels


(3.4.1) PREPARATION


THE EFFECT OF MAGNESIUM PARTICLES OF VARIOUS EQUIVALENT DIAMETERS ON SOME PHYSICAL PROPERTIES OF PETROLATUM-STABILIZED MAGNESIUM-HYDROCARBON SLURRIES. Joseph M. Lamberti. April 1954. 48p. diagrs., photos., tabs. (NACA RM E54A22)


PREPARATION AND PROPERTIES OF CONCENTRATED BORON-HYDROCARBON SLURRY FUELS. Irving A. Goodman and Virginia O. Fenn. August 1954. 35p. diagrs., photos., tabs. (NACA RM E54F18a)

EFFECT OF SURFACE-ACTIVE ADDITIVES ON PHYSICAL BEHAVIOR OF 50-PERCENT SLURRIES OF 1.5-MICRON MAGNESIUM IN n-DECANE. Murray L. Pinns. February 1955. 54p. diagrs., photo., tabs. (NACA RM E54K22a)
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THE EFFECT OF MAGNESIUM PARTICLES OF VARIOUS EQUIVALENT DIAMETERS ON SOME PHYSICAL PROPERTIES OF PETROLATUM-STABILIZED MAGNESIUM-HYDROCARBON SLURRIES. Joseph M. Lamberti. April 1954. 48p. diagrs., photos., tabs. (NACA RM E54A22)


EFFECT OF SURFACE-ACTIVE ADDITIVES ON PHYSICAL BEHAVIOR OF 50-PERCENT SLURRIES OF 1.5-MICRON MAGNESIUM IN n-DECANE. Murray L. Pinns. February 1955. 54p. diagrs., photos., tabs. (NACA RM E54K22a)


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(3.4.3) RELATION TO ENGINE PERFORMANCE

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(3) PROPULSION
(3.4.3.2) TURBINE ENGINES, RAM JETS, AND PULSE JETS


IGNITION-ENERGY REQUIREMENTS IN A SINGLE TUBULAR COMBUSTOR. Hampton H. Foster. March 27, 1951. 27p. diagrs., tab. (NACA RM E51A24)


AN EXPERIMENTAL INVESTIGATION OF THE COMBUSTION PROPERTIES OF A HYDROCARBON FUEL AND SEVERAL MAGNESIUM AND BORON SLURRIES. Albert M. Lord. April 1952. 30p. diagrs. (NACA RM E52B01)


THE EFFECT OF MAGNESIUM PARTICLES OF VARIOUS EQUIVALENT DIAMETERS ON SOME PHYSICAL PROPERTIES OF PETROLATUM-STABILIZED MAGNESIUM-HYDROCARBON SLURRIES. Joseph M. Lamberti. April 1954. 46p. diagrs., photos., tabs. (NACA RM E54A22)


PERFORMANCE OF SLURRIES OF 50 PERCENT BORON IN JP-4 FUEL IN 5-INCH RAM-JET BURNER. Thaine W. Reynolds and Donald P. Haas. June 1954. 31p. diagrs., photos., tabs. (NACA RM E54D07)

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EFFECT OF SURFACE-ACTIVE ADDITIVES ON PHYSICAL BEHAVIOR OF 50-PERCENT SLURRIES OF 1.5-MICRON MAGNESIUM IN n-DECANE. Murray L. Pinn. February 1955. 54p. diags., photo., tabs. (NACA RM E54l22a)


EFFECT OF PRESSURE ON THE SPONTANEOUS IGNITION TEMPERATURE OF LIQUID FUELS. Cleveland O'Neal, Jr. October 1956. 21p. diags., tabs. (NACA TN 3829)


(3.4.3.3)

ROCKETS (INCLUDES FUEL AND OXIDANT)


EFFECT OF COMBUSTION-CHAMBER PRESSURE AND NOZZLE EXPANSION RATIO ON THEORETICAL PERFORMANCE OF SEVERAL ROCKET PROPELLANT SYSTEMS. Virginia E. Morrell. May 25, 1950. 15p. diags., tabs. (NACA RM E5GC30)

THEORETICAL PERFORMANCE OF LITHIUM AND FLUORINE AS A ROCKET PROPPELLANT. Sanford Gordon and Vearl N. Huff. May 10, 1951. 22p. diags., tabs. (NACA RM E5lC01)


THEORETICAL PERFORMANCE OF LIQUID AMMONIA, HYDRAZINE, AND MIXTURE OF LIQUID AMMONIA AND HYDRAZINE AS FUELS WITH LIQUID OXYGEN BIFLUORIDE AS OXIDANT FOR ROCKET ENGINES. II - HYDRAZINE. Vearl N. Huff and Sanford Gordon. September 1952. 20p. diags., tabs. (NACA RM E52G09)

THEORETICAL PERFORMANCE OF LIQUID AMMONIA, HYDRAZINE, AND MIXTURE OF LIQUID AMMONIA AND HYDRAZINE AS FUELS WITH LIQUID OXYGEN BIFLUORIDE AS OXIDANT FOR ROCKET ENGINES. III - LIQUID AMMONIA. Vearl N. Huff and Sanford Gordon. October 1952. 15p. diags., tabs. (NACA RM E52H14)


HYDROGEN-OXYGEN EXPLOSIONS IN EXHAUST DUCTING. Paul M. Ordin. April 1957. 31p. diagrs., photos., tab. (NACA TN 3935)
(3.5) Combustion and Combustors

APPLICATION OF STREAM-FILAMENT TECHNIQUES TO DESIGN OF DIFFUSER BETWEEN COMPRESSOR AND COMBUSTOR IN A GAS-TURBINE ENGINE. Norbert O. Stockman. August 1955. 15p. diagrs. (NACA RM E55F06)

(3.5.1) GENERAL COMBUSTION RESEARCH

IGNITION-ENERGY REQUIREMENTS IN A SINGLE TUBULAR COMBUSTOR. Hampton H. Foster. March 27, 1951. 27p. diagrs., tab. (NACA RM E51A24)


PERFORMANCE OF SLURRIES OF 50 PERCENT BORON IN JP-4 FUEL IN 5-INCH RAM-JET BURNER. Thaine W. Reynolds and Donald P. Haas. June 1954. 31p. diagrs., photos., tabs. (NACA RM E54D07)


MECHANISM OF GENERATION OF PRESSURE WAVES AT FLAME FRONTS. Boa-Teh Chu, Johns Hopkins University. October 1956. 20p. diagrs. (NACA TN 3863)

EFFECT OF PRESSURE ON THE SPONTANEOUS IGNITION TEMPERATURE OF LIQUID FUELS. Cleveland O'Neal, Jr. October 1956. 21p. diagrs., tabs. (NACA TN 3829)


THEORY AND DESIGN OF A PNEUMATIC TEMPERATURE PROBE AND EXPERIMENTAL RESULTS OBTAINED IN A HIGH-TEMPERATURE GAS STREAM. Frederick S. Simmons and George E. Glawe. January 1957. 41p. diagrs., photo. (NACA TN 3893)

A GENERAL SYSTEM FOR CALCULATING BURNING RATES OF PARTICLES AND DROPS AND COMPARISON OF CALCULATED RATES FOR CARBON, BORON, MAGNESIUM, AND ISOOCtANE. Kenneth P. Coffin and Richard S. Brokaw. February 1957. 56p. diagrs., tabs. (NACA TN 3929)

EFFECT OF STANDING TRANSVERSE ACOUSTIC OSCILLATIONS ON FUEL-OXIDANT MIXING IN CYLINDRICAL COMBUSTION CHAMBERS. William R. Mickelsen. May 1957. (i), 49p. diagrs. (NACA TN 3983)

LAMINAR-FLOW COMBUSTION


A GENERAL SYSTEM FOR CALCULATING BURNING RATES OF PARTICLES AND DROPS AND COMPARISON OF CALCULATED RATES FOR CARBON, BORON, MAGNESIUM, AND ISOOCtANE. Kenneth P. Coffin and Richard S. Brokaw. February 1957. 56p. diagrs., tabs. (NACA TN 3929)

FURTHER EXPERIMENTS ON THE STABILITY OF LAMINAR AND TURBULENT HYDROGEN-AIR FLAMES AT REDUCED PRESSURES. Burton Fine. April 1957. 31p. diagrs., tabs. (NACA TN 3977)

TURBULENT-FLOW COMBUSTION


FURTHER EXPERIMENTS ON THE STABILITY OF LAMINAR AND TURBULENT HYDROGEN-AIR FLAMES AT REDUCED PRESSURES. Burton Fine. April 1957. 31p. diagrs., tabs. (NACA TN 3977)

DETONATION

HYDROGEN-OXYGEN EXPLOSIONS IN EXHAUST DUCTING. Paul M. Ordin. April 1957. 31p. diagrs., photos., tab. (NACA TN 3935)


AN EXPERIMENTAL INVESTIGATION OF THE COMBUSTION PROPERTIES OF A HYDROCARBON FUEL AND SEVERAL MAGNESIUM AND BORON SLURRIES. Albert M. Lord. April 1952. 30p. diagrs. (NACA RM E52B01)


(3.5.1.5) REACTION MECHANISMS

AN EXPERIMENTAL INVESTIGATION OF THE COMBUSTION PROPERTIES OF A HYDROCARBON FUEL AND SEVERAL MAGNESIUM AND BORON SLURRIES. Albert M. Lord. April 1952. 30p. diagrs. (NACA RM E52B01)


(3.5.1.6) IGNITION OF GASES


EFFECT OF PRESSURE ON THE SPONTANEOUS IGNITION TEMPERATURE OF LIQUID FUELS. Cleveland O'Neal, Jr. October 1956. 21p. diagrs., tabs. (NACA TN 3829)

EFFECT OF CONCENTRATION ON IGNITION DELAYS FOR VARIOUS FUEL-OXYGEN-NITROGEN MIXTURES AT ELEVATED TEMPERATURES. E. Anagnostou, R. S. Brokaw, and J. N. Butler. December 1956. 34p. diagrs. (NACA TN 3887)

HYDROGEN-OXYGEN EXPLOSIONS IN EXHAUST DUCTING. Paul M. Ordin. April 1957. 31p. diagrs., photos., tab. (NACA TN 3955)

(3.5.2) EFFECT OF ENGINE OPERATING CONDITIONS AND COMBUSTION CHAMBER GEOMETRY


PERFORMANCE OF SLURRIES OF 50 PERCENT BORON IN JP-4 FUEL IN 5-INCH RAM-JET BURNER. Thaine W. Reynolds and Donald P. Haas. June 1954. 31p. diagrs., photos., tabs. (NACA RM E54D07)

AN EXPERIMENTAL INVESTIGATION OF A FLAT RAM-JET ENGINE ON A HELICOPTER ROTOR. Robert D. Powell, Jr., and James P. Shivers. January 1956. 27p. diagrs., photo. (NACA RM L55F28)


EFFECT OF STANDING TRANSVERSE ACOUSTIC OSCILLATIONS ON FUEL-OXIDANT MIXING IN CYLINDRICAL COMBUSTION CHAMBERS. William R. Mickelsen. May 1957. (i), 49p. diagrs. (NACA TN 3963)

(3.5.2.2) TURBINE ENGINES

IGNITION-ENERGY REQUIREMENTS IN A SINGLE TUBULAR COMBUSTOR. Hampton H. Foster. March 27, 1951. 27p. diagrs., tab. (NACA RM E51A24)


METHOD FOR ESTIMATING COMBUSTION EFFICIENCY AT ALTITUDE FLIGHT CONDITIONS FROM COMBUSTOR TESTS AT LOW PRESSURES. Walter T. Olson, J. Howard Childs, and Wilfred E. Scull. August 1953. 15p. diagrs. (NACA RM E53F17)


APPLICATION OF STREAM-FILAMENT TECHNIQUES TO DESIGN OF DIFFUSER BETWEEN COMPRESSOR AND COMBUSTOR IN A GAS-TURBINE ENGINE. Norbert O. Stockman. August 1955. 15p. diagrs. (NACA RM E55F06)


FREE-FIIGHT PERFORMANCE OF 16-INCH-DIAMETER SUPERSONIC RAM-JET UNITS. IV - PERFORMANCE OF RAM-JET UNITS DESIGNED FOR COMBUSTION-CHAMBER-INLET MACH NUMBER OF 0.21 AT FREE-STREAM MACH NUMBER OF 1.6 OVER A RANGE OF FLIGHT CONDITIONS. Leonhard Rabb and Warren J. North. February 26, 1951. 46p. diagrs., photos., tab. (NACA RM E51L18)

(3) PROPULSION

AN EXPERIMENTAL INVESTIGATION OF THE COMBUSTION PROPERTIES OF A HYDROCARBON FUEL AND SEVERAL MAGNESIUM AND BORON SLURRIES. Albert M. Lord. April 1952. 30p. diagrs. (NACA RM E52B01)


PERFORMANCE OF SLURRIES OF 50 PERCENT BORON IN JP-4 FUEL IN 5-INCH RAM-JET BURNER. Thaine W. Reynolds and Donald P. Haas. June 1954. 31p. diagrs., photos., tabs. (NACA RM E54D07)


EFFECT OF PLASTIC VISCOSITY AND YIELD VALUE ON SPRAY CHARACTERISTICS OF MAGNESIUM-SLURRY FUEL. George M. Prok. January 1957. 23p. diagrs., photo, tabs. (NACA RM E56J19a)

(3.5.2.5) ROCKET ENGINES


EFFECT OF COMBUSTION-CHAMBER PRESSURE AND NOZZLE EXPANSION RATIO ON THEORETICAL PERFORMANCE OF SEVERAL ROCKET PROPELLANT SYSTEMS. Virginia E. Morrell. May 25, 1950. 15p. diagrs., tabs. (NACA RM E50C01)


THEORETICAL PERFORMANCE OF LIQUID AMMONIA, HYDRAZINE, AND MIXTURE OF LIQUID AMMONIA AND HYDRAZINE AS FUELS WITH LIQUID OXYGEN BIFLUORIDE AS OXIDANT FOR ROCKET ENGINES. II - HYDRAZINE. Vearl N. Huff and Sanford Gordon. September 1952. 20p. diagrs., tabs. (NACA RM E52G09)

THEORETICAL PERFORMANCE OF LIQUID AMMONIA, HYDRAZINE, AND MIXTURE OF LIQUID AMMONIA AND HYDRAZINE AS FUELS WITH LIQUID OXYGEN BIFLUORIDE AS OXIDANT FOR ROCKET ENGINES. III - LIQUID AMMONIA. Vearl N. Huff and Sanford Gordon. October 1952. 15p. diagrs., tabs. (NACA RM E52H14)


(3.6) Compression and Compressors

APPLICATION OF STREAM-FILAMENT TECHNIQUES TO DESIGN OF DIFFUSER BETWEEN COMPRESSOR AND COMBUSTOR IN A GAS-TURBINE ENGINE. Norbert O. Stockman. August 1955. 15p. diagrs. (NACA RM E55F06)

(3.6.1) FLOW THEORY AND EXPERIMENT

SOME EFFECTS OF CHANGING SOLIDITY BY VARYING THE NUMBER OF BLADES ON PERFORMANCE OF AN AXIAL-FLOW COMPRESSOR STAGE. Raymond M. Standahar and George K. Serovy. April 1952. 46p. diagrs., photos., tabs. (NACA RM E52A31)


(3.6.1.1) AXIAL FLOW


ANALYSIS OF PART-SPEED OPERATION FOR HIGH-PRESSURE-RATIO MULTISTAGE AXIAL-FLOW COMPRESSORS. William A. Benser. December 1853. 41p. diagrs., tab. (NACA RM E53115)


EXPERIMENTAL DETERMINATION OF AERODYNAMIC FORCES NORMAL TO THE CHORD DUE TO ROTATING STALL ACTING ON COMPRESSOR BLADING. Donald F. Johnson and Eleanor L. Costilow. August 1954. 27p. diagrs., photos. (NACA RM E54F14)
COMPARISON OF LOW-SPEED ROTOR AND CASCADE PERFORMANCE FOR MEDIUM-CAMBER NACA 65-(C10)10 COMPRESSOR-BLADE SECTIONS OVER A WIDE RANGE OF ROTOR BLADE-SETTING ANGLES AT SOLIDITIES OF 1.0 AND 0.5. George C. Ashby, Jr. December 1954. 40p. diagrs., photo. (NACA RM L54H13)


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(3.7.1.1) AXIAL FLOW


(3.7.1.3) MIXED FLOW


(3.7.2) COOLING


(3.7.3) STRESS AND VIBRATION


(3.8) Friction and Lubrication

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HIGH-TEMPERATURE LUBRICANTS AND BEARINGS FOR AIRCRAFT TURBINE ENGINES. NACA Subcommittee on Lubrication and Wear. APPENDIX A: HIGH-SPEED AIRCRAFT MISSIONS. C. M. Michaels, Wright Air Development Center. APPENDIX B: ENGINE DESIGN TRENDS AFFECTING LUBRICANTS AND BEARINGS. C. C. Singletery, Bureau of Aeronautics, Department of the Navy.

APPENDIX C: PROBLEMS ENCOUNTERED AT HIGH TEMPERATURES IN LUBRICATION SYSTEMS OF TURBINE ENGINES. G. P. Townsend, Westinghouse Electric Corp.

APPENDIX D: TURBOPROP GEAR LUBRICATION PROBLEMS. C. J. McDowall, General Motors Corp.


APPENDIX G: HIGH-TEMPERATURE BEARING PROBLEMS. F. W. Wellons.

(3.8.2) SLIDING CONTACT SURFACES

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INVESTIGATION OF TRANSIENT POOL BOILING DUE TO SUDDEN LARGE POWER SURGE. Robert Cole. December 1956. 44p. diagrs., photos., tabs. (NACA TN 3885)

THEORY AND DESIGN OF A PNEUMATIC TEMPERATURE PROBE AND EXPERIMENTAL RESULTS OBTAINED IN A HIGH-TEMPERATURE GAS STREAM. Frederick S. Simmons and George E. Glawe. January 1957. 41p. diagrs., photo. (NACA TN 3939)
(3.9.2) HEAT EXCHANGERS

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Anthony J. Diaguila and John N. B. Livingood.
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(3.10) Cooling of Engines

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(3.12) Accessories and Accessory Functions

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(3.12.1.8) ROCKET ENGINES


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(3.12.3) STARTING SYSTEMS


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EXPERIMENTAL DETERMINATION OF AERODYNAMIC FORCES NORMAL TO THE CHORD DUE TO ROTATING STALL ACTING ON COMPRESSOR BLADING. Donald F. Johnson and Eleanor L. Costilow. August 1954. 27p. diagrs., photos. (NACA RM E54F14)
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AERODYNAMIC LOAD MEASUREMENTS OVER A LEADING-EDGE SLAT ON A $45^\circ$ SWEPTBACK WING AT MACH NUMBERS FROM 0.10 TO 0.91. Jones F. Cahill and Robert J. Nuber. September 1952. 32p. diagrs., photos., tab. (NACA RM L52G18a)


FLIGHT TEST RESULTS OF ROCKET-PROPELLED BUFFET-RESEARCH MODELS HAVING $45^\circ$ SWEPTBACK WINGS AND $45^\circ$ SWEPTBACK TAILS LOCATED IN THE WING CHORD PLANE. Homer P. Mason. October 1953. 26p. diagrs., photos., tab. (NACA RM L53H10)


AN INVESTIGATION OF LOADS ON ALLERONS AT TRANSONIC SPEEDS. Jack F. Runckel and W. H. Gray. May 1955. 8p. diagrs. (NACA RM L55E11a)


(4) AIRCRAFT LOADS AND CONSTRUCTION

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FLIGHT INVESTIGATION AT MACH NUMBERS FROM 0.8 TO 1.4 TO DETERMINE THE ZERO-LIFT DRAG OF WINGS WITH "M" AND "W" PLAN FORMS. Ellis Katz, Edward T. Marley, and William B. Pepper. September 18, 1950. 23p. diagrs., photos., tab. (NACA RM L50H25)

TABULATED PRESSURE COEFFICIENTS AND AERODYNAMIC CHARACTERISTICS MEASURED ON THE WING OF THE BELL X-1 AIRPLANE IN LEVEL FLIGHT AT MACH NUMBERS FROM 0.79 TO 1.00 AND IN A PULL-UP AT A MACH NUMBER OF 0.96. H. Arthur Carner and Mary M. Payne. September 18, 1950. 43p. diagrs., photo., tabs. (NACA RM L50H25)


TRANSONIC AERODYNAMIC CHARACTERISTICS OF THREE W-PLAN-FORM WINGS HAVING ASPECT RATIO 8, TAPER RATIO 0.45, AND NACA 63A-SERIES AIRFOIL SECTIONS. William D. Morrison, Jr. July 1952. 30p. diagrs., photo. (NACA RM L52E14a)


INVESTIGATION OF SPOILERs AT A MACH NUMBER OF 1.93 TO DETERMINE THE EFFECTS OF HEIGHT AND CHORDWISE LOCATION ON THE SECTION AERODYNAMIC CHARACTERISTICS OF A TWO-DIMENSIONAL WING. James N. Mueller. March 1953. 52p. diagrs., photos. (NACA RM L52L31)


A LOW-SPEED INVESTIGATION OF A THIN 60° DELTA WING EQUIPPED WITH A DOUBLE SLOTTED FLAP TO DETERMINE THE CHORDWISE PRESSURE DISTRIBUTION AND THE EFFECT OF VANE SIZE. Delwin R. Croom. March 1955. 42p. diagrs., tabs. (NACA RM L54L03a)
(4) AIRCRAFT LOADS AND CONSTRUCTION


LIFT AND MOMENT RESPONSES TO PENETRATION OF SHARP-EDGED TRAVELING GUSTS, WITH APPLICATION TO PENETRATION OF WEAK BLAST WAVES. Joseph A. Dirschler and Franklin W. Diederich. May 1957. 85p. diagrs., tabs. (NACA TN 3956)

(4.1.1.1) Steady Loads

RESULTS OBTAINED DURING ACCELERATED TRANSONIC TESTS OF THE BELL X5-1 AIRPLANE IN FLIGHTS TO A MACH NUMBER OF 0.92. Hubert M. Drake, Milton D. McLaughlin, and Harold R. Goodman. April 19, 1946. 22p. diagrs., tab. (NACA RM L8A05a)


WIND-TUNNEL INVESTIGATION AT LOW SPEED OF A WING SWEPT BACK 63° AND TWISTED AND CAMBERED FOR UNIFORM LOAD AT A LIFT COEFFICIENT OF 0.5. James A. Weiberg and Hubert C. Carel. May 9, 1950. 53p. diagrs., photos., tabs. (NACA RM A50A23)

WIND-TUNNEL INVESTIGATION AT LOW SPEED OF A WING SWEPT BACK 63° AND TWISTED AND CAMBERED FOR UNIFORM LOAD AT A LIFT COEFFICIENT OF 0.5 AND WITH A THICKENED TIP SECTION. James A. Weiberg and Hubert C. Carel. November 21, 1950. 42p. diagrs., photo., tabs. (NACA RM A50114)


EFFECTS OF REYNOLDS NUMBER ON THE AERODYNAMIC CHARACTERISTICS OF A DELTA WING AT MACH NUMBER OF 2.41. John E. Hatch, Jr., and L. Keith Hargrave. October 1951. 36p. diagrs., photos., tab. (NACA RM L51H06)


PRESSURE DISTRIBUTION AT LOW SPEED ON A MODEL INCORPORATING A W WING WITH ASPECT RATIO 6, 45° SWEPT, TAPER RATIO 0.6, AND AN NACA 65A009 AIRFOIL SECTION. Edward C. Polhamus and Albert G. Few, Jr. August 1952. 46p. diagrs., photo. (NACA RM L52F11)

INVESTIGATION AT A MACH NUMBER OF 1.2 OF TWO 45° SWEPTBACK WINGS UTILIZING NACA 2-006 AND NACA 65A006 AIRFOIL SECTIONS. Homer B. Wilson, Jr. September 1953. 50p. diagrs., photo., tab. (NACA RM L52G17)


TRANSonic AERODYNAMIC CHARACTERISTICS IN PITCH OF A W-WING HAVING 60° 48° PANEL SWEET, ASPECT RATIO 3.5, AND TAPER RATIO 0.25. William D. Morrison, Jr. August 1953. 18p. diagrs., photo. (NACA RM L53F22)

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AERODYNAMIC CHARACTERISTICS OF A 68.4° DELTA WING AT MACH NUMBERS OF 1.6 AND 1.9 OVER A WIDE REYNOLDS NUMBER RANGE. John E. Hatch, Jr., and James J. Gallagher. November 1953. 44p. diagrs., photos., tabs. (NACA RM L53J26)


PRESSURE DISTRIBUTIONS ON PLUG- AND SEMAPHORE-TYPE SPOILER AILERONS ON A 35° SWEPTBACK WING OF ASPECT RATIO 4, TAPER RATIO 0.6, AND NACA 65A008 AIRFOIL SECTION AT HIGH SUBSONIC SPEEDS. Alexander D. Hammond and William C. Hayes, Jr. August 1954. 55p. diagrs., tabs. (NACA RM L54F08)


THEORETICAL SPAN LOAD DISTRIBUTIONS AND ROLLING MOMENTS FOR SIDESLIPPING WINGS OF ARBITRARY PLAN FORM IN INCOMPRESSIBLE FLOW. M. J. Queijo. 1956. 11, 15p. diagrs. (NACA Rept. 1269. Supersedes TN 3605)

THREE-DIMENSIONAL TRANSONIC FLOW THEORY APPLIED TO SLENDER WINGS AND BODIES. Max. A. Heaslet and John R. Spreiter. July 1956. 72p. diagrs. (NACA TN 3717)


(4.1.1.1.2) Maneuvering

RESULTS OBTAINED DURING A DIVE RECOVERY OF THE BELL XS-1 AIRPLANE TO HIGH LIFT COEFFICIENTS AT A MACH NUMBER GREATER THAN 1.0. Milton D. McLaughlin and Dorothy C. Clift. April 8, 1948. 6p. diagrs. (NACA RM L4C23a)


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A THEORY FOR THE LATERAL RESPONSE OF AIRPLANES TO RANDOM ATMOSPHERIC TURBULENCE. John M. Eggleson. May 1957. 1, 75p. diagrs., tabs. (NACA TN 3954)

LIFT AND MOMENT RESPONSES TO PENETRATION OF SHARP-EDGED TRAVELING GUSTS. WITH APPLICATION TO PENETRATION OF WEAK BLAST WAVES. Joseph A. Drischler and Franklin W. Diederich. May 1957. 65p. diagrs., tabs. (NACA TN 3956)


(4.1.1.4)

Buffeting Loads


(4.1.1.2)

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(4.1.1.2.1)

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TABLES OF CHARACTERISTIC FUNCTIONS FOR SOLVING BOUNDARY-VALUE PROBLEMS OF THE WAVE EQUATION WITH APPLICATION TO SUPERSONIC INTERFERENCE. Jack N. Nielsen. February 1957. 245p. diagrs., tabs. (NACA TN 3879)
(4.1.1.2.2) Maneuvering


AN ANALYTICAL STUDY OF SIDESLIP ANGLES AND VERTICAL-TAIL LOADS IN ROLLING PULL-OUTS AS AFFECTED BY SOME CHARACTERISTICS OF MODERN HIGH-SPEED AIRPLANE CONFIGURATIONS. Ralph W. Stone, Jr. October 1953. 41p. diagrs., tabs. (NACA RM A54F21)


THEORETICAL INVESTIGATION OF THE EFFECT OF RUDDER AND STABILIZER DEFLECTIONS ON THE ANGLES OF ATTACK AND SIDESLIP IN RAPID ROLLS. C. H. Woodling. March 1957. 43p. diagrs., tabs. (NACA RM L57A30a)

(4.1.1.2.3) Buffeting and Gust

RESULTS OBTAINED DURING ACCELERATED TRANSONIC TESTS OF THE BELL XS-1 AIRPLANE IN FLIGHTS TO A MACH NUMBER OF 0.92. Hubert M. Drake, Milton D. McLaughlin, and Harold R. Goodman. April 19, 1948. 22p. diagrs., tab. (NACA RM L8A05a)

BUFFETING OF A VERTICAL TAIL ON AN INCLINED BODY AT SUPERSONIC MACH NUMBERS. Forrest E. Goven. March 1953. 35p. diagrs., photos, tab. (NACA RM A53A09)


CALCULATED LATERAL FREQUENCY RESPONSE AND LATERAL OSCILLATORY CHARACTERISTICS FOR SEVERAL HIGH-SPEED AIRPLANES IN VARIOUS FLIGHT CONDITIONS. Byron M. Jaquet. December 1953. 72p. diagrs., tabs. (NACA RM L53J01)


EFFECTS OF WING-MOUNTED TANK-TYPE STORES ON THE LOW-LIFT BUFFETING AND DRAG OF A SWEPT-WING AIRPLANE CONFIGURATION BETWEEN MACH NUMBERS OF 0.8 AND 1.3. Homer P. Mason. October 1955. 34p. diagrs., photos, tabs. (NACA RM L55D27)


TURBULENCE IN THE WAKE OF A THIN AIRFOIL AT LOW SPEEDS. George S. Campbell, California Institute of Technology. January 1957. 65p. diagrs. (NACA TN 1427)

THEORETICAL AND EXPERIMENTAL INVESTIGATION OF LATERAL GUST LOADS. PART I - AERODYNAMIC TRANSFER FUNCTION OF A SIMPLE WING CONFIGURATION IN INCOMPRESSIBLE FLOW. Raimo J. Hakkinen and A. S. Richardson, Jr., Massachusetts Institute of Technology. May 1957. 64p. diagrs., photos. (NACA TN 3878)


(4.1.1.3) BODIES


PRESSURE DISTRIBUTION AT LOW SPEED ON A MODEL INCORPORATING A W WING WITH ASPECT RATIO 6, 45° SWEEP, TAPER RATIO 0.6, AND AN NACA 65A009 AIRFOIL SECTION. Edward C. Polhamus and Albert G. Few, Jr. August 1952. 46p. diagrs., photo. (NACA RM L52F11)


(4) AIRCRAFT LOADS AND CONSTRUCTION


(4.1.1.4) ROTATING WINGS


BAND-PASS SHOCK AND VIBRATION ABSORBERS FOR APPLICATION TO AIRCRAFT LANDING GEAR. Emanuel Schnitzer. October 1956. 27p. diags. (NACA TN 3803)

INVESTIGATION OF VERTICAL DRAG AND PERIODIC AIRLOADS ACTING ON FLAT PANELS IN A ROTOR SLIPSTREAM. Robert A. Makofski and George F. Menkisk. December 1956. 29p. diags., photo. (NACA TN 3900)

LIFT AND MOMENT RESPONSES TO PENETRATION OF SHARP-EDGED TRAVELING GUSTS, WITH APPLICATION TO PENETRATION OF WEAK BLAST WAVES. Joseph A. Drischler and Franklin W. Diederich. May 1957. 85p. diags., tabs. (NACA TN 3956)

(4.1.1.5) AEROELASTICITY


FREE-FLIGHT LONGITUDINAL-STABILITY INVESTIGATION INCLUDING SOME EFFECTS OF WING ELASTICITY FROM MACH NUMBERS OF 0.85 TO 1.34 OF A TAILLESS MISSILE CONFIGURATION HAVING A 45° SWEPTBACK WING OF ASPECT RATIO 5.5. Richard G. Arbic and Warren Gillespie, Jr. August 1953. 30p. diags., photos., tabs. (NACA RM L53F18)


EXPERIMENTAL AND PREDICTED LATERAL-DIRECTIONAL DYNAMIC-RESPONSE CHARACTERISTICS OF A LARGE FLEXIBLE 35° SWEPT-WING AIRPLANE AT AN ALTITUDE OF 35,000 FEET, STUART C. BROWN AND EUCLID C. HOLLEMAN. DECEMBER 1956. 74P. DIAGR., PHOTO., TABS. (NACA TN 3874)

THEORETICAL AND EXPERIMENTAL INVESTIGATION OF RANDOM GUST LOADS. PART II - THEORETICAL FORMULATION OF ATMOSPHERIC GUST RESPONSE PROBLEM. A. S. Richardson, Jr., Massachusetts Institute of Technology. May 1957. 50p. diagrs., tab. (NACA TN 3879)

(4.1.2) LANDING

(4.1.2.1) IMPACT


BAND-PASS SHOCK AND VIBRATION ABSORBERS FOR APPLICATION TO AIRCRAFT LANDING GEAR. Emanuel Schnitzer. October 1956. 27p. diagrs. (NACA TN 3803)


(4.1.2.1.1) Land


LANDING CONDITIONS FOR LARGE AIRPLANES IN ROUTINE OPERATIONS. Norman S. Silsby and Eziaslav N. Harrin. July 1955. 10p. diagrs. (NACA RM L55E18c)

EFFECT OF INTERACTION ON LANDING-GEAR BEHAVIOR AND DYNAMIC LOADS IN A FLEXIBLE AIRPLANE STRUCTURE. Francis E. Cook and Benjamin Milwitzky. 1956. ii, 30p. diagrs., tabs. (NACA Rept. 1278. Supersedes TN 3407)


RECENT DATA ON TIRE FRICTION DURING LANDING. Sidney A. Batterson. June 1957. 7p. diagrs. (NACA RM L57D19b)

(4.1.2.1.2) Water


WATER-IMPACT THEORY FOR AIRCRAFT EQUIPPED WITH NONTRIMMING HYDRO-SKIS MOUNTED ON SHOCK STRUTS. Emanuel Schnitzer. October 1954. 29p. diagrs. (NACA RM L54H10)


THEORETICAL DETERMINATION OF WATER LOADS ON PITCHING HULLS AND SHOCK-MOUNTED HYDRO-SKIS. Emanuel Schnitzer. October 1956. 65p. diagrs., tab. (NACA RM L56E31)

IMPACT-LOADS INVESTIGATION OF CHINE-IMMERSED MODELS HAVING CONCAVE-CONVEX TRANSVERSE SHAPE AND STRAIGHT OR CURVED KEEL LINES. Philip M. Edge, Jr. February 1957. 66p. diagrs., photos., tabs. (NACA TN 3940)

(4.1.2.2) GROUND-RUN

BAND-PASS SHOCK AND VIBRATION ABSORBERS FOR APPLICATION TO AIRCRAFT LANDING GEAR. Emanuel Schnitzer. October 1956. 27p. diagrs. (NACA TN 3803)
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FLUTTER OF A 60° DELTA WING (NACA 65A003 AIRFOIL) ENCOUNTERED AT SUPERSONIC SPEEDS DURING THE FLIGHT TEST OF A ROCKET-PROPELLED MODEL. Joseph H. Judd and William T. Lauten, Jr. September 1952. 24p. diagrs., photos., tabs. (NACA RM L52E06a)


SUPERSONIC FLUTTER OF A 60° DELTA WING ENCOUNTERED DURING THE FLIGHT TEST OF A ROCKET-PROPELLED MODEL. William T. Lauten, Jr., and Joseph H. Judd. June 1954. 20p. diagrs., photos., tabs. (NACA RM L54D12a)


THEORETICAL DETERMINATION OF WATER LOADS ON PITCHING HULLS AND SHOCK-MOUNTED HYDRO-SKIS. Emanuel Schnitzer. October 1956. 6sp., diagrs., tab. (NACA RM L56E51)


(4.2.1) WINGS AND AILERONS


METHOD FOR CALCULATING THE AERODYNAMIC LOADING ON AN OSCILLATING FINITE WING IN SUBSONIC AND SONIC FLOW. Harry L. Runyan and Donald S. Woolston. August 1956. 76p. diagrs., tabs. (NACA TN 3694)


INCOMPRESSIBLE FLUTTER CHARACTERISTICS OF REPRESENTATIVE AIRCRAFT WINGS. C. H. Wilts, California Institute of Technology. April 1957. 121p. diagrs., tabs. (NACA TN 3780)

EXPERIMENTALLY DETERMINED NATURAL VIBRATION MODES OF SOME CANTILEVER-WING FLUTTER MODELS BY USING AN ACCELERATION METHOD. Perry W. Hanson and W. J. Tuvilla. April 1957. 46p. diagrs., photo., tab. (NACA TN 4010)

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(4.2.2.1) ELEVATORS AND RUDDERS

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EXPERIMENTAL DETERMINATION OF AERO DYNAMIC FORCES NORMAL TO THE CHORD DUE TO ROTATING STALL ACTING ON COMPRESSOR BLADING.
Donald F. Johnson and Eleanor L. Costilow. August 1954. 27p. diagrs., photos. (NACA RM E54F14)

AN ANALYSIS OF ONCE-PER-REVOLUTION OSCILLATING AERODYNAMIC THRUST LOADS ON SINGLE-ROTATION PROPELLERS ON TRACTOR AIRPLANES.

DIFFERENTIAL EQUATIONS OF MOTION FOR COMBINED FLAPWISE BENDING, CHORDWISE BENDING, AND TORSION OF TWISTED NONUNIFORM ROTOR BLADES.

(4.2.5) ROTATING-WING AIRCRAFT

AN EXPERIMENTAL INVESTIGATION OF THE EFFECT OF VARIOUS PARAMETERS INCLUDING TIP MACH NUMBER ON THE FLUTTER OF SOME MODEL HELICOPTER ROTOR BLADES.

EQUATIONS AND PROCEDURES FOR NUMERICALLY CALCULATING THE AERODYNAMIC CHARACTERISTICS OF LIFTING ROTORS.
Alfred Geasow. October 1956. 21p. diagr., tab. (NACA TN 3747)

ANALYTICAL DETERMINATION OF THE NATURAL COUPLED FREQUENCIES AND MODE SHAPES AND THE RESPONSE TO OSCILLATING FORCING FUNCTIONS OF TANDEM HELICOPTERS.
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**4.2.6 Panels and Surface Coverings**

(NACA Rept. 1290. Supersedes TN 3465)

(NACA TM 1420)
(4.3) Structures


(4.3.3) PLATES


(4.3.3.1) FLAT


(4.3.3.1.1) Unstiffened


(4.3.3.2) CURVED


EFFECT OF AN INTERFACE ON TRANSIENT TEMPERATURE DISTRIBUTION IN COMPOSITE AIRCRAFT JOINTS. Martin E. Barzelay and George F. Holloway, Syracuse University. April 1957. 51p. diagrs., photo., tabs. (NACA TN 3824)


(4.3.3.2.1) Unstiffened


(4.3.4) BEAMS

STRESS ANALYSIS OF CIRCULAR SEMIMONOCOQUE CYLINDERS WITH CUTOUTS. Harvey G. McComb, Jr. 1955. ii, 55p. diagrs., tabs. (NACA Rept. 1251. Supersedes TN 3199; TN 3200; TN 3460)
TORSIONAL STIFFNESS OF THIN-WALLED SHELLS HAVING REINFORCING CORES AND RECTANGULAR, TRIANGULAR, OR DIAMOND CROSS SECTION. Harvey G. McComb, Jr. October 1956. 35p. diagrs. (NACA TN 3749)


(4.3.4.1) BOX


(4.3.5) SHELLS

TORSIONAL STIFFNESS OF THIN-WALLED SHELLS HAVING REINFORCING CORES AND RECTANGULAR, TRIANGULAR, OR DIAMOND CROSS SECTION. Harvey G. McComb, Jr. October 1956. 35p. diagrs. (NACA TN 3749)


(4.3.5.1) CYLINDERS


(4.3.5.1.1) Circular

STRESS ANALYSIS OF CIRCULAR SEMIMONOCAQUE CYLINDERS WITH CUTOUTS. Harvey G. McComb, Jr. 1955. ii, 55p. diagrs., tabs. (NACA Rept. 1251. Supersedes TN 3199; TN 3200; TN 3460)


BURSTING STRENGTH OF UNSTIFFENED PRESSURE CYLINDERS WITH SLITS. Roger W. Peters and Paul Kuhn. April 1957. 21p. diagrs., photos., tabs. (NACA TN 3993)


(4.3.5.2) BOXES


(4.3.6) CONNECTIONS


(4.3.6.1) BOLTED


(4.3.6.2) RIVETED


(4.3.6.3) WELDED


(4.3.6.4) BONDED


(4.3.7) LOADS AND STRESSES


A VARIATIONAL THEOREM FOR CREEP WITH APPLICATIONS TO PLATES AND COLUMNS. J. Lyell Sandera, Jr., Harvey G. McComb, Jr., and Floyd R. Schlechte. May 1957. 23p. diagrs. (NACA TN 4003)


COMPRESSION


**TORSION**

**TORSIONAL STIFFNESS OF THIN-WALLED SHELLS HAVING REINFORCING CORES AND RECTANGULAR, TRIANGULAR, OR DIAMOND CROSS SECTION.** Harvey G. McComb, Jr. October 1956. 35p. diagrs. (NACA TN 3740)

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**AN EXPERIMENTAL STUDY OF APPLIED GROUND LOADS IN LANDING.** Benjamin Milwitzky, Dean C. Lindquist, and Dexter M. Potter. 1955. ii, 34p. diagrs., photos., tab. (NACA Rept. 1248. Supersedes and extends TN 3246)


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BAND-PASS SHOCK AND VIBRATION ABSORBERS FOR APPLICATION TO AIRCRAFT LANDING GEAR. Emanuel Schnitzer. October 1956. 27p. diagrs. (NACA TN 3803)

EFFECT OF INTERACTION ON LANDING-GEAR BEHAVIOR AND DYNAMIC LOADS IN A FLEXIBLE AIRPLANE STRUCTURE. Francis E. Cook and Benjamin Milwitzky. 1956. ii, 30p. diagrs., tabs. (NACA Rept. 1278. Supersedes TN 3467)

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SURVEY OF MICROSTRUCTURES AND MECHANICAL PROPERTIES OF OVERTEMPERATURED S-816 TURBINE BUCKETS FROM J47 ENGINES.
INVESTIGATION OF VANES IMMERSSED IN THE JET OF A SOLID-FUEL ROCKET MOTOR. Leo V. Giladett and Andrew R. Wineman. September 1952. 50p. diagrs., photos., tabs. (NACA RM L52F12)


(5.1.1)

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(5.1.2) Magnesium


(5.1.4) HEAT-RESISTING ALLOYS


SHEAR STRENGTH AT 750° F TO 5000° F OF FOURTEEN ADHESIVES USED TO BOND A GLASS-FABRIC-REINFORCED PHENOLIC RESIN LAMINATE TO STEEL. John R. Davidson. December 1956. 21p. diagrs., photo., tab. (NACA TN 3901)


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SHEAR STRENGTH AT 750° F TO 5000° F OF FOURTEEN ADHESIVES USED TO BOND A GLASS-FABRIC-REINFORCED PHENOLIC RESIN LAMINATE TO STEEL. John R. Davidson. December 1956. 21p. diagrs., photo., tab. (NACA TN 3901)


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### (5.2.1) TENSILE


A VARIATIONAL THEOREM FOR CREEP WITH APPLICATIONS TO PLATES AND COLUMNS. J. Lyell Sanders, Jr., Harvey G. McComb, Jr., and Floyd R. Schlechte. May 1957. 23p. diagr. (NACA TN 4003)

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(5.2.5) FATIGUE


FATIGUE TESTS ON NOTCHED AND UNNOTCHED SHEET SPECIMENS OF 2024-T3 AND 7075-T6 ALUMINUM ALLOYS AND OF SAE 4130 STEEL WITH SPECIAL CONSIDERATION OF THE LIFE RANGE FROM 2 TO 10,000 CYCLES. Walter Ilig. December 1956. 40p. diagrs., photo., tabs. (NACA TN 3866)


EFFECT OF FREQUENCY AND TEMPERATURE ON FATIGUE OF METALS. S. R. Valluri, California Institute of Technology. February 1957. 15p. diagrs. (NACA TN 3972)


(5.2.6) SHEAR


SHEAR STRENGTH AT 750° F TO 5000° F OF FOURTEEN ADHESIVES USED TO BOND A GLASS-FABRIC-REINFORCED PHENOLIC RESIN LAMINATE TO STEEL. John R. Davidson. December 1956. 21p. diagrs., photo., tab. (NACA TN 3901)

(5.2.7)

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EFFECT OF SPANWISE VARIATIONS IN GUST INTENSITY ON THE LIFT DUE TO ATMOSPHERIC TURBULENCE. Franklin W. Diederich and Joseph A. Drischler. April 1957. 56p. diagrs., tabs. (NACA TN 3920)

A THEORY FOR THE LATERAL RESPONSE OF AIRPLANES TO RANDOM ATMOSPHERIC TURBULENCE. John M. Eggleston. May 1957. 1, 75p. diagrs., tabs. (NACA TN 3954)


(6.1.2.4) ALLEVIATION

(6.2) 

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EXPERIMENTAL DROPLET IMPINGEMENT ON SEVERAL TWO-DIMENSIONAL AIRFOILS WITH THICKNESS RATIOS OF 6 TO 16 PERCENT. Thomas F. Gelder, William H. Smyers, Jr., and Uwe von Glahn. December 1956. 77p. diagrs., photos., tabs. (NACA TN 3839)

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(7) OPERATING PROBLEMS

DYNAMIC LONGITUDINAL STABILITY AND CONTROL OF TANDEM-COUPLED BOMBER-Fighter AIRPLANE MODELS WITH RIGID AND PITCH-FREE COUPLINGS. David C. Grana and Donald E. Hewes. January 22, 1951. 12p. diagrs., tabs. (NACA RM L50L14)


(7.1) Safety


EFFECT OF PRESSURE ON THE SPONTANEOUS IGNITION TEMPERATURE OF LIQUID FUELS. Cleveland O'Neal, Jr. October 1956. 21p. diagrs., tabs. (NACA TN 3829)


PROPOSED INITIATING SYSTEM FOR CRASH-FIRE PREVENTION SYSTEMS. Jacob C. Moser and Dugald O. Black. December 1956. 18p. diagrs. (NACA TN 3774)


(7.3) Ice Prevention and Removal


EXPERIMENTAL DROPLET IMPINGEMENT ON SEVERAL TWO-DIMENSIONAL AIRFOILS WITH THICKNESS RATIOS OF 6 TO 16 PERCENT. Thomas F. Gelder, William H. Smyers, Jr., and Uwe von Glahn. December 1956. 77p. diagrs., photos., tabs. (NACA TN 3839)

(7.3.1) ENGINE INDUCTION SYSTEMS


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(7.3.5) MISCELLANEOUS ACCESSORIES


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PROPOSED INITIATING SYSTEM FOR CRASH-FIRE PREVENTION SYSTEMS. Jacob C. Moser and Dugald O. Black. December 1956. 18p. diagrs. (NACA TN 3774)


EXPLORATORY STUDY OF GROUND PROXIMITY EFFECTS ON THRUST OF ANNULAR AND CIRCULAR NOZZLES. Uwe H. von Glahn. April 1957. 48p. diagrs., photos. (NACA TN 3982)
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THEORY AND DESIGN OF A PNEUMATIC TEMPERATURE PROBE AND EXPERIMENTAL RESULTS OBTAINED IN A HIGH-TEMPERATURE GAS STREAM. Frederick S. Simmons and George E. Gliwe. January 1957. 41p. diagrs., photo. (NACA TN 3893)

MEASUREMENTS OF THE NONLINEAR VARIATION WITH TEMPERATURE OF HEAT-TRANSFER RATE FROM HOT WIRES IN TRANSONIC AND SUPERSONIC FLOW. Warren Winovich and Howard A. Stine. April 1957. 33p. diagrs., photo., tab. (NACA TN 3965)

CHARACTERISTICS OF A 40° CONE FOR MEASURING MACH NUMBER, TOTAL PRESSURE, AND FLOW ANGLES AT SUPERSONIC SPEEDS. Frank J. Centolanzi. May 1957. 36p. diagrs. (NACA TN 3967)
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MEASUREMENTS AND PREDICTIONS OF FLOW CONDITIONS ON A TWO-DIMENSIONAL BASE SEPARATING A MACH NUMBER 3.36 JET AND A MACH NUMBER 1.55 OUTER STREAM. Donald E. Coletti. May 1954. 56p. diagrs., photos. (NACA RM L54C08)

EFFECTS OF COMBINING AUXILIARY BLEED WITH EJECTOR PUMPING ON THE POWER REQUIREMENTS AND TEST-SECTION FLOW OF AN 8-INCH BY 8-INCH SLOTTED TUNNEL. B. H. Little, Jr., and James M. Cubbage, Jr. July 1955. 44p. diagrs., photo. (NACA RM L55E25)


CHARACTERISTICS OF A 40° CONE FOR MEASURING MACH NUMBER, TOTAL PRESSURE, AND FLOW ANGLES AT SUPERSONIC SPEEDS. Frank J. Centolansy. May 1957. 36p. diagrs. (NACA TN 3967)


(9.1.1) WIND TUNNELS


AN INVESTIGATION OF STING-SUPPORT INTERFERENCE ON BASE PRESSURE AND FOREBODY CHORD FORCE AT MACH NUMBERS FROM 0.60 TO 1.30. Phillips J. Tunell. January 1955. 19p. diagrs. (NACA RM A54K16a)

EFFECTS OF COMBINING AUXILIARY BLEED WITH EJECTOR PUMPING ON THE POWER REQUIREMENTS AND TEST-SECTION FLOW OF AN 8-INCH BY 8-INCH SLOTTED TUNNEL. B. H. Little, Jr., and James M. Cubbage, Jr. July 1955. 44p. diagrs., photo. (NACA RM L55E25)


AN EXPERIMENTAL INVESTIGATION OF STING-SUPPORT EFFECTS ON DRAG AND A COMPARISON WITH JET EFFECTS AT TRANSONIC SPEEDS. Maurice S. Cahn. September 1956. 65p. diagrs., tabs. (NACA RM L56F18a)


(9.1.2) FREE-FLIGHT


(9.1.4) PROPULSION RESEARCH EQUIPMENT


A SELF-BALANCING LINE-REVERSAL PYROMETER. Donald Buchele. August 1956. 68p. diagrs., photos., tabs. (NACA TN 3856)


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HEAT-CAPACITY MEASUREMENTS OF TITANIUM AND OF A HYDRIDE OF TITANIUM FOR TEMPERATURES FROM 4° TO 15° K INCLUDING A DETAILED DESCRIPTION OF A SPECIAL ADIABATIC SPECIFIC-HEAT CALORIMETER. M. H. Aven, R. S. Craig, and W. E. Wallace, University of Pittsburgh. October 1956. 30p. diagrs., tabs. (NACA TN 3787)

FATIGUE TESTS ON NOTCHED AND UNNOTCHED SHEET SPECIMENS OF 2024-T3 AND 7075-T6 ALUMINUM ALLOYS AND OF SAE 4130 STEEL WITH SPECIAL CONSIDERATION OF THE LIFE RANGE FROM 2 TO 10,000 CYCLES. Walter Illig. December 1956. 40p. diagrs., photo., tabs. (NACA TN 3866)


(9.2) Technique


THEORETICAL AND EXPERIMENTAL INVESTIGATION OF THE EFFECT OF TUNNEL WALLS ON THE FORCES ON AN OSCILLATING AIRFOIL IN TWO-DIMENSIONAL SUBSONIC COMPRESSIBLE FLOW. Harry L. Runyan, Donald S. Woolston, and A. Gerald Rainey. 1956. 11, 21p. diagrs. (NACA Rept. 1262. Supersedes TN 3416)


AN EXPERIMENTAL INVESTIGATION OF STING-SUPPORT EFFECTS ON DRAG AND A COMPARISON WITH JET EFFECTS AT TRANSONIC SPEEDS. Maurice S. Cahn. September 1956. 67p. diagrs., tabs. (NACA RM L56F18a)


ROCKET-MODEL INVESTIGATION TO DETERMINE THE FORCE AND HINGE-MOMENT CHARACTERISTICS OF A HALF-DELTA TIP CONTROL ON A 50° SWEEPBACK DELTA WING BETWEEN MACH NUMBERS OF 0.55 AND 1.43. C. William Marsz, James D. Church, and John W. Goslee. October 1952. 53p. diagrs., photos., tab. (NACA RM L52H66)


(9.2.1) CORRECTIONS

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THEORY AND DESIGN OF A PNEUMATIC TEMPERATURE PROBE AND EXPERIMENTAL RESULTS OBTAINED IN A HIGH-TEMPERATURE GAS STREAM. Frederick S. Simmons and George E. Glawe. January 1957. 41p. diagrs., photo. (NACA TN 3893)


TABLES OF VARIOUS MACH NUMBER FUNCTIONS FOR SPECIFIC-HEAT RATIOS FROM 1.28 TO 1.38. Lewis Laboratory Computing Staff. April 1957. 76p. tabs. (NACA TN 3861)


(9.2.2) AERODYNAMICS

FLIGHT INVESTIGATION AT SUBSONIC, TRANS-SONIC, AND SUPERSONIC VELOCITIES OF THE HINGE-MOMENT CHARACTERISTICS, LATERAL-CONTROL EFFECTIVENESS, AND WING DAMPING IN ROLL OF A 60° SWEEPBACK DELTA WING WITH HALF-DELTA TIP AILERONS. (Revised.) C. William Martz and James D. Church. September 1951. 32p. diagrs., photos. (NACA RM L51G18)

FREE-FLIGHT INVESTIGATION TO DETERMINE FORCE AND HINGE-MOMENT CHARACTERISTICS AT ZERO ANGLE OF ATTACK OF A 60° SWEEPBACK HALF-DELTA TIP CONTROL ON A 60° SWEEPBACK DELTA WING AT MACH NUMBERS BETWEEN 0.68 AND 1.44. C. William Martz. James D. Church, and John W. Goslee. December 1951. 36p. diagrs., photos. (NACA RM L51H14)


AN INVESTIGATION OF STING-SUPPORT INTERFERENCE ON BASE PRESSURE AND FOREBODY CHORD FORCE AT MACH NUMBERS FROM 0.60 TO 1.30. Phillips J. Tunnell. January 1955. 19p. diagrs. (NACA RM A54K16a)


LOW-SPEED STUDY OF THE EFFECT OF FREQUENCY ON THE STABILITY DERIVATIVES OF WINGS OSCILLATING IN YAW WITH PARTICULAR REFERENCE TO HIGH ANGLE-OF-ATTACK CONDITIONS. John F. Campbell, Joseph L. Johnson, Jr., and Donald E. Hewes. November 1955. 93p. diagrs., photos., tab. (NACA RM L55H05)


AN EXPERIMENTAL INVESTIGATION OF STING-SUPPORT EFFECTS ON DRAG AND A COMPARISON WITH JET EFFECTS AT TRANSONIC SPEEDS. Maurice S. Cahn. September 1956. 67p. diagrs., tabs. (NACA RM L56F18a)


MEASUREMENTS OF THE NONLINEAR VARIATION WITH TEMPERATURE OF HEAT-TRANSFER RATE FROM HOT WIRES IN TRANSONIC AND SUPERSONIC FLOW. Warren Winovich and Howard A. Stine. April 1957. 33p. diagrs., photo., tab. (NACA TN 3965)

THEORETICAL AND EXPERIMENTAL INVESTIGATION OF RANDOM GUST LOADS. PART I - AERODYNAMIC TRANSFER FUNCTION OF A SIMPLE WING CONFIGURATION IN INCOMPRESSIBLE FLOW. Ralmo J. Hakkinen and A. S. Richardson, Jr., Massachusetts Institute of Technology. May 1957. 64p. diagrs., photos. (NACA TN 3878)

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(9.2.4) LOADS AND CONSTRUCTION


STUDY OF ALUMINUM DEFORMATION BY ELECTRON MICROSCOPY. A. P. Young, C. W. Melton, and C. M. Schwartz, Battelle Memorial Institute, August 1956. 39p. diagrs., photos. (NACA TN 3728)


MEASUREMENTS OF LIFT FLUCTUATIONS DUE TO TURBULENCE. P. Lanson, California Institute of Technology, March 1957. 38p. diagrs. (NACA TN 3880)

EXPERIMENTALLY DETERMINED NATURAL VIBRATION MODES OF SOME CANTILEVER-WING FLUTTER MODELS BY USING AN ACCELERATION METHOD. Perry W. Hanson and W. J. Tuovila. April 1957. 45p. diagrs., photos., tab. (NACA TN 4010)
THEORETICAL AND EXPERIMENTAL INVESTIGATION OF RANDOM GUST LOADS. PART I - AERODYNAMIC EFFECTS ON THE TRANSFER FUNCTION OF A SIMPLY SUPPORTED WING CONFIGURATION IN INCOMPRESSIBLE FLOW. Raimo J. Hakkinen and A. S. Richardson, Jr., Massachusetts Institute of Technology. May 1957. 64p. diagrs., photos. (NACA TN 3878)

(9.2.5) PROPULSION


MECHANISM OF GENERATION OF PRESSURE WAVES AT FLAME FRONTS. Boa-Teh Chu, Johns Hopkins University. October 1956. 20p. diagrs. (NACA TN 3683)


THEORY AND DESIGN OF A PNEUMATIC TEMPERATURE PROBE AND EXPERIMENTAL RESULTS OBTAINED IN A HIGH-TEMPERATURE GAS STREAM. Frederick S. Simmons and George E. Glawe. January 1957. 41p. diagrs., photo. (NACA TN 3893)

(9.2.6) OPERATING PROBLEMS


CONVERSION OF INVISCID NORMAL-FORCE COEFFICIENTS IN HELIUM TO EQUIVALENT COEFFICIENTS IN AIR FOR SIMPLE SHAPES AT HYPersonic SPEEDS. James N. Mueller. October 1956. 31p. diagrs. (NACA TN 3807)


(9.2.7) MATHEMATICS


ON A METHOD FOR OPTIMIZATION OF TIME-VARYING LINEAR SYSTEMS WITH NONSTATIONARY INPUTS. Marvin Shinbrot. September 1956. 39p. (NACA TN 3791)
INCOMPLETE TIME RESPONSE TO A UNIT IMPULSE AND ITS APPLICATION TO LIGHTLY DAMPED LINEAR SYSTEMS. James J. Donegan and Carl R. Huss. December 1956. 17p. diagrams. (NACA TN 3897)


ON SUBSONIC FLOW PAST A PARABOLOID OF REVOLUTION. Carl Kaplan. February 1957. 21p. diagrams, tab. (NACA TN 3700)


EXPECTED NUMBER OF MAXIMA AND MINIMA OF A STATIONARY RANDOM PROCESS WITH NON-GAUSSIAN FREQUENCY DISTRIBUTION. Franklin W. Diederich. April 1957. 21p. tables. (NACA TN 3960)

TABLES OF VARIOUS MACH NUMBER FUNCTIONS FOR SPECIFIC-HEAT RATIOS FROM 1.28 TO 1.38. Lewis Laboratory Computing Staff. April 1957. 76p. tables. (NACA TN 3901)

THE APPLICATION OF MATRIX METHODS TO COORDINATE TRANSFORMATIONS OCCURRING IN SYSTEMS STUDIES INVOLVING LARGE MOTIONS OF AIRCRAFT. Brian F. Doolin. May 1957. 36p. (NACA TN 3968)

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- Friction and Lubrication - Theory and Experiment

#### 3.8.1.1 Friction and Lubrication - Hydrodynamic Theory

#### 3.8.1.3 Friction and Lubrication - Surface Conditions

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- Fuel Systems - Engines, Compression-Ignition
- Fuel Systems - Engines, Pulse-Jet
- Fuel Systems - Engines, Ram-Jet
- Fuel Systems - Engines, Rocket
- Fuel Systems - Engines, Spark-Ignition
- Fuel Systems - Engines, Turbine-Propeller
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- Fuels - Properties, Physical and Chemical
- Fuels - Relation to Engine Performance

#### 3.4.3.1 Fuels - Reciprocating Engines

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### Fuels - Relation to Engine Performance

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#### Gases, Properties

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#### Gusts, Alleviation

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#### Gusts, Frequency

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See also

- Propeller Operating Conditions
- Propeller Selection Charts
- Propeller-Spinner-Cowl Combinations
- Propeller Theory
- Propellers - Designated Types
- Propellers - Design Variables
- Slipstream - Propellers

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See also

- Blade Sections - Propellers
- Interference of Bodies - Propellers
- Mach Number Effects - Propellers
- Propellers - Blade Plan Forms
- Propellers - Diameter
- Propellers, Dual-Rotation
- Propellers - Pitch and Yaw
- Propellers - Pitch Distribution
- Propellers, Pusher
- Propellers - Solidity

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Propulsion

See also

- Accessories and Accessory Functions
- Booster Systems, Auxiliary
- Combustion and Combustors
- Compression and Compressors
- Engines, Control
- Engines, Cooling
- Friction and Lubrication
- Fuels
- Gases, Properties
- Heat Transfer
- Propulsion - Complete Systems
- Propulsion Systems - Vibration and Flutter

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See also

- Engine Types, Comparison
- Engines, Ducted-Propeller
- Engines, Miscellaneous
- Engines, Pulse-Jet
- Engines, Ram-Jet
- Engines, Reciprocating
- Engines, Rocket
- Engines, Turbojet
- Engines, Turbo-Propeller

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See also

- Research Equipment, Free-Flight
- Research Equipment, Materials
- Research Equipment, Propeller
- Research Equipment, Propulsion
- Research Equipment, Structures
- Towing Tanks and Impact Basins
- Wind Tunnels

Research Equipment and Techniques

See also

- Research Technique
- Research Equipment, Free-Flight
- Research Equipment, Materials
- Research Equipment, Propeller
- Research Equipment, Propulsion
- Research Equipment, Structures

Research Technique

See also

- Research Technique, Aerodynamic
- Research Technique - Corrections
- Research Technique, Hydrodynamic
- Research Technique - Loads and Construction
- Research Technique, Mathematics
- Research Technique - Operating Problems
- Research Technique, Propulsion

Research Technique, Aerodynamic

See also

- Research Technique - Corrections
- Research Technique, Hydrodynamic
- Research Technique, Loads and Construction
- Research Technique, Mathematics
- Research Technique - Operating Problems
- Research Technique, Propulsion

Reynolds Number Effects - Complete

See also

- Reynolds Number Effects - Wing Sections
- Rocket Assist
- Rotating-Wing Aircraft

See also

- Autogiros
- Helicopters
- Rotors, Jet-Driven

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