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this manual describes the nasa glenn research center s 1 by 1 foot supersonic wind tunnel and provides information for customers who wish to conduct experiments in this facility tunnel performance envelopes of total pressure total temperature and dynamic pressure as a function of test section mach number are presented for each mach number maps are presented of reynolds number per foot as a function of the total air temperature at the test section inlet for constant total air pressure at the inlet general support systems such as the service air combustion air altitude exhaust system auxiliary bleed system model hydraulic system schlieren system model pressure sensitive paint and laser sheet system are discussed in addition instrumentation and data processing acquisition systems are described pretest meeting formats and schedules are outlined and customer responsibilities and personnel safety are addressed seablom kirk d and soeder ronald h and stark david e and leone john f x and henry michael w glenn research centermach number reynolds number supersonic wind tunnels supersonic flow test chambers data acquisition manuals wind tunnel nozzles dynamic pressure wind tunnel tests the computer program for the design and analysis of supersonic aircraft configurations is presented the schematics of the program structure are provided the individual overlays and subroutines are described the system is useful in determining surface pressures and supersonic area rule concepts lists citations with abstracts for aerospace related reports obtained from world wide sources and announces documents that have recently been entered into the nasa scientific and technical information database a comprehensive computational procedure is presented for predicting the supersonic region of the flow field on advanced reentry vehicle shapes in steady flight at pitch and yaw the procedure utilizes explicit second order accurate finite difference methods applied to the conservation law form of the steady inviscid flow equations improved numerical methods are used at the body surface and the bow shock wave provisions for treating body geometries with discontinuous slopes are also included either perfect gas or real gas equilibrium thermodynamic properties can be used the computational procedure is implemented as a fortran computer code which provides a practicable representation of the inviscid flow field and the resulting aerodynamic force and moment on the vehicle in this report vol i the analytical and numerical development of the procedure is presented and the associated computer code is described a comparison report vol ii user s manual contains detailed instructions for operating the code and interpreting the output results author in missile preliminary design it is necessary to quickly and economically estimate the aerodynamics of a wide variety of missile configuration designs since the ultimate shape and aerodynamic performance are so dependent upon the subsystems utilized such as payload size propulsion system selection and launch mechanism the designer must be capable of predicting a wide variety of configurations accurately the fundamental purpose of missile datcom is to provide an aerodynamic design tool which has the predictive accuracy suitable for preliminary design and the capability for the user to easily substitute methods to fit specific applications a selection of annotated references to unclassified reports and journal articles that were introduced into the nasa scientific and technical information system and announced in scientific and technical aerospace reports star and international aerospace abstracts iaa

A System for Aerodynamic Design and Analysis of Supersonic Aircraft: User's manual 1980 this manual describes the nasa glenn research center s 1 by 1 foot supersonic wind tunnel and provides information for customers who wish to conduct experiments in this facility tunnel performance envelopes of total pressure total temperature and dynamic pressure as a function of test section mach number are presented for each mach number maps are presented of reynolds number per foot as a function of the total air temperature at the test section inlet for constant total air pressure at the inlet general support systems such as the service air combustion air altitude exhaust system auxiliary bleed system model hydraulic system schlieren system model pressure sensitive paint and laser sheet system are discussed in addition instrumentation and data processing acquisition systems are described pretest meeting formats and schedules are outlined and customer responsibilities and personnel safety are addressed seablom kirk d and soeder ronald h and stark david e and leone john f x and henry michael w glenn research centermach number reynolds number supersonic wind tunnels supersonic flow test chambers data acquisition manuals wind tunnel nozzles dynamic pressure wind tunnel tests

A Supersonic, Three-dimensional Code for Flow Over Blunt Bodies 1980 the computer program for the design and analysis of supersonic aircraft configurations is presented the schematics of the program structure are provided the individual overlays and subroutines are described the system is useful in determining surface pressures and supersonic area rule concepts

A System for Aerodynamic Design and Analysis of Supersonic Aircraft. Part 2: User's Manual 1980 lists citations with abstracts for aerospace related reports obtained from world wide sources and announces documents that have recently been entered into the nasa scientific and technical information database

NASA Glenn 1-By 1-Foot Supersonic Wind Tunnel User Manual 2018-06-03 a comprehensive computational procedure is presented for predicting the supersonic region of the flow field on advanced reentry vehicle shapes in steady flight at pitch and yaw the procedure utilizes explicit second order accurate finite difference methods applied to the conservation law form of the steady inviscid flow equations improved numerical methods are used at the body surface and the bow shock wave provisions for treating body geometries with discontinuous slopes are also included either perfect gas or real gas equilibrium thermodynamic properties can be used the computational procedure is implemented as a fortran computer code which provides a practicable representation of the inviscid flow field and the resulting aerodynamic force and moment on the vehicle in this report vol i the analytical and numerical development of the procedure is presented and the associated computer code is described a comparison report vol ii user s manual contains detailed instructions for operating the code and interpreting the output results author

A computational system for aerodynamic design and analysis of supersonic aircraft 1976 in missile preliminary design it is necessary to quickly and economically estimate the aerodynamics of a wide variety of missile configuration designs since the ultimate shape and aerodynamic performance are so dependent upon the subsystems utilized such as payload size propulsion system selection and launch mechanism the designer must be capable of predicting a wide variety of configurations accurately the fundamental purpose of missile datcom is to provide an aerodynamic design tool which has the predictive accuracy suitable for preliminary design and the capability for the user to easily substitute methods to fit specific applications

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