M-SAT-62-4
(December 12, 1962)

116p.

NASA.

GEORGE C. MARSHALL SPACE FLIGHT CENTER
HUNTSVILLE, ALABAMA

TMX - 50409

A BIBLIOGRAPHY OF THE SATURN SYSTEM

Prepared by the

Scientific Spacecraft Applications Office
SATURN Systems Office

GEORGE C. MARSHALL SPACE FLIGHT CENTER

National Aeronautics and Space Administration

M-SAT-62-4

BIBLIOGRAPHY

of the

SATURN System

Prepared by the

Scientific Spacecraft Applications Office
SATURN Systems Office

GEORGE C. MARSHALL SPACE FLIGHT CENTER

TABLE OF CONTENTS

INTRODUCTION

This is the second issue of the SATURN Bibliography issued on April 1, 1961.

It has become increasingly evident that as the SATURN project gains impetus, the number of relative documents increases rapidly. Widespread knowledge and use of such documents is correspondingly hampered unless a common medium of exchanging is established.

To aid those interested in the SATURN development, a partial listing of the documentation has been assembled into three principal categories; Technical Reports, Test Reports, and, a section for General Documents. These are further divided as indicated in headlines.

The reports themselves are arranged in sequence by date of publication. Perhaps a more convenient method of cataloguing is apparent, but the one chosen avoids the confusion of listing a plurality of subjects covered. The entry itself consists of the subject, date of publication, author, and laboratory, and in some cases, report number and security classification.

To further aid in the usefulness of this document, an author's index is included in the back. Space is provided for the individual entries as desired. Aid in maintaining or expanding this bibliography is invited.

For general interest, ARPA letter of August 15, 1958, authorizing the SATURN program, has been included in toto.

GENERAL SECTIONS

Saturn Program Authorization Letter

Policy

Proposals

Specifications

Presentations, Talks, and Articles

Progress Reports

SATURN PROGRAM AUTHORIZATION LETTER

C
O
P
Y

ARPA Order No. 14-59

August 15, 1958 Date

TO: Commanding General
U. S. Army Ordnance Missile Command
Huntsville, Alabama

1. Pursuant to the provisions of DoD Directive 5105.15, dated February 7, 1958, you are requested to proceed at once on behalf of the Advanced Research Projects Agency with the project specified below. Additional details and directives will be issued by ARPA from time to time and will become a part of this Order when so specified.

2. Initiate a development program to provide a large space vehicle booster of approximately 1.5 million pounds thrust based on a cluster of available rocket engines. The immediate goal of this program is to demonstrate a full-scale captive dynamic firing by the end of claendar (sic) year 1959.

3. You will submit, as soon as possible, for review and approval by the Advanced Research Projects Agency a detailed development and related financial plan covering the program. These data shall include a time-phased schedule of work and estimates for work to be performed (a) by AOMC, (b) by contract, and (c) at other government facilities.

4. This Order makes available $5,000,000 under appropriation and account symbol "97X0113.001 Salaries and Expenses, Advanced Research Projects, Department of Defense" for obligation by the Army Ordnance Missile Command on behalf of the Advanced Research Projects Agency only for the purposes necessary to accomplish the work specified herein. These funds are immediately available for direct obligation and for use in reimbursing the Army Ordnance Missile Command for costs incurred under this Order. Upon approval of development and financial plans, as required herein or in accordance with amendments to this Order, these funds will be increased as appropriate.

5. The Director, Advanced Research Projects Agency, will provide policy and technical guidance, either directly or through designated resident representatives. The Army Ordnance Missile Command

C
O
P
Y

C
O
P
Y

will be responsible for arranging for the detailed technical direction necessary to accomplish the specified objectives and to comply with ARPA policy and technical guidance. This general relationship may be specified in greater detail by amendment to this Order if such action is necessary.

6. The Director, Advanced Research Projects Agency, and the Office of the Secretary of Defense will be kept informed by such management, technical and accounting reports as may be prescribed pursuant to this Order.

7. The use of equipment and materials procured in connection with this project is subject to direction of AROA and all reports, manuals, charts, data and information as may be collected or prepared in connection with the project shall be made available to ARPA prior to release to other agencies or individuals under procedures to be approved.

8. AOMC shall be responsible for preserving the security of this project in accordance with the security classification assigned and the security regualtions (sic) and procedures of the Department of the Army.

9. Notwithstanding any other provisions of this Order, AOMC shall not be bound to take any action in connection with the performance of this work that would cause the amount for which the Government will be obligated hereunder to exceed the funds made available, and the obligation to the AOMC to proceed with the performance of this work shall be limited accordingly. AOMC shall be responsible for assuring that all commitments, obligations and expenditures fo (sic) the funds made available are made in accordance with the statutes and regulations governing such matters provided that whenever such regulations require approval of high authority such approvals will be obtained from or through the Director, ARPA, or his designated representative.

/s/ Roy Johnson
Roy W. Johnson
Director

cc: Secretary of the Army

C
O
P
Y

SATURN POLICY

August 15, 1958	ARPA Order 14-59 provided authority and initial funding to AOMC for 1500 K booster development based on a cluster of available rocket engines.
July 9, 1959	ARPA Order 14-60, Amendment No. 7 delineated responsibility for the SATURN system development to AOMC.
September 16-19, 1959	A NASA-Army-Air Force committee appointed by Dr. H. York convened to review the three planned big boosters, Titan C, Saturn, and Nova. Dr. York agreed to the continuation of Saturn.
October 20, 1969	The President informed NASA that ABMA's Development Operations Division, along with responsibility for the Saturn Project, would be transferred to NASA.
October 30, 1959	President Eisenhower approved in full the DOD-NASA proposed transfer plan.
December 15, 1959	The Silverstein committee recommended a long-range development plan for the Saturn utilizing all hydrogen/oxygen upper stages, the use of the C-1 configuration for the initial vehicles, and the development of high-thrust hydrogen/oxygen engines.
January 1960	The administrator, NASA, approved the Saturn development plan within the frame of a 10-vehicle R&D program.
January 18, 1960	Project SATURN was approved as a program of highest national priority.
February 19, 1960	Amendment No. 17 to ARPA Order 14-60 authorized ABMA to proceed with preliminary steps leading to contracts for upper stages for the C-1 configuration. Also included was a NASA request for over-all development plans for C-1, C-2 and C-3 vehicles.
March 16, 1960	The transfer of administrative as well as technical direction of the SATURN Project (ARPA Orders 14 and 47) from ARPA to NASA became effective.

September 13, 1960	Dr. T. K. Glennan, in answer to Lt. General B. Schriever's letter of August 15, stated that NASA was willing to provide cooperation and assistance to the DynaSoar Project Office concerning use of SATURN in the DynaSoar Step II program. SATURN Systems Office was given this job.
November 23, 1960	Program Management Plan for SATURN Project was issued.
January 26, 1961	The Director, MSFC, requested the elimination of the three-stage C-1 vehicle in favor of a two-stage vehicle primarily to support Apollo. Thus, no S-V stage, except for deep space missions.
March 29, 1961	MSFC received approval from NASA Headquarters to utilize six LR-115 engines for the S-IV stage.
April 10, 1961	NASA announced Project Apollo objective of an orbiting laboratory to study effects of radiation and weightlessness on animals and 3-man crew.
May 25, 1961	President Kennedy requested $130.5 million, in a Joint Session of Congress, for Apollo.
June 1, 1961	The SATURN C-1 program was modified from a three-stage to two-stage configuration for an early three-man Apollo launch.
June 5, 1961	Dr. von Braun announced that the C-2 configuration would be discontinued and manpower saved would be used to clarify the C-3 and Nova concepts.
September 7, 1961	NASA selected Michoud Ordnance Plant near New Orleans as the productionsite for the S-I and later SATURN stages.
September 11, 1961	NASA authorized DAC to proceed with S-IVB program.
September 11, 1961	NASA announced the selection of North American Aviation, Inc., as contractor for S-II stage.
October 25, 1961	NASA selected Pearl River Mississippi Site for static test of SATURN and Nova-class vehicles.
November 17, 1961	Chrysler Corporation was chosen to manufacture S-I stage.

December 15, 1961	The Boeing Company was chosen to develop the S-IB stage of C-5 vehicle.
January 25, 1962	NASA approved the SATURN C-5 development program, and authorized its development under MSFC direction.
April 18, 1962	NASA approved the highest national priority for the Apollo program. The priority covered the SATURN C-1, Advanced SATURN, Titan II, and Atlas-Agena launch vehicles.
July 1962	NASA announced that the Apollo program would utilize the SATURN C-5 in Lunar Orbit Rendezvous mode of operations to place man on the moon in this decade.

PROPOSALS

A Practical Approach to Simulation of SATURN Hyper-Environments, (undated), Wyle Laboratories (U).

Proposal for the S-IV Stage of SATURN Vehicles, Volumes I-II, Douglas Aircraft Company, Report No. SM-37402, February 1960 (C)

Proposal for Transportation of SATURN Stage S-IV, Douglas Aircraft Company, 1960

Rapid Modes of Transportation for the SATURN System, Launch Operations Directorate, 1960, by O. K. Duren.

SATURN Stage S-V Proposals, Convair Astronautics, Report No. AE60-0968, November 18, 1960 (C)

Proposal for Second and Third Stages of the ABMA Multistage Rocket Program, January 30, 1969, (Convair/Astronautics), Convair Division of General Dynamics Corporation. (S)

Technical Proposal for SATURN Spacemetal Application, North American Aviation Report No. MD 59-339, September 4, 1959.

Proposal to MSFC, NASA for a Solid Rocket First Stage for SATURN, Aerojet General Corporation Report No. SR 62003, January 1962.

Proposal for SATURN Booster Cargo Glider Feasibility Study, Temeo Aircraft Corporation Report No. 00.188, July 14, 1960.

SATURN/X-15 Proposal, North American Aviation Report No. NA-60-447, April 21, 1960.

Proposal for Upper Stage SATURN, Glen Martin Denver Report No. M-M-58-70, December 1958.

Proposal for Upper Stage SATURN, Glen Martin Denver Report M-M-58-70 Revised, January 1959.

Hylos Star - A Multipurpose, High-Energy Upper Stage Vehicle, Aerojet General Report No. SY-61-003, November 1960.

Proposal for the Upper Stages of the SATURN Space Vehicle, Douglas Aircraft Corporation Report No. SM 36193, November 1959.

Technical Proposal Space Power System for SATURN-type Vehicles, the Garrett Corporation Report No. M-1248-R, March 2, 1962.

Unsolicited Proposal for High Force Vibration Capability for Heavy Space Vehicle Components, Wyle Laboratories Report No. D/6850/RS, April 11, 1962.

SATURN Stage S-IB Accelerated Program Proposal, The Boeing Company Report No. D2-12733, November 6, 1961.

A Proposal to MSFC to Perform as SATURN S-IB Stage Prime Contractor, Volumes 1, 2 and 3, Aerojet-General Corporation Report No. LR 61330, December 1961.

A Proposal for SATURN Stage S-IB, General Dynamics Corporation Report No. AE61-1052, Volumes 1, 2 and 3, November 8, 1961.

SATURN S-IB Proposal, Volumes 1, 2, and 3, Martin Corporation Report No. ER-12031P, November 1961.

S-IB Presentation to MSFC, Volumes 1, 2, 3 and 4, Space Technology Laboratories, Inc., November 14, 1961.

Phase II - Technical Proposal Stage S-II SATURN C-3 Vehicle, North American Aviation, Volumes 1, 2, 3, 4 and 5., Report SID-61-210-4, July 24, 1961.

System Data Document S-II SATURN, Report Nos. SID 61-361 through -368, North American Aviation, December 4, 1961 - Revised May 21, 1962.

Management Proposal for Stage S-II SATURN Vehicle System, North American Aviation Report No. SID-61-100-1, May 9, 1961

Available Facilities and Equipment, Report No. SID 61-100-2, North American Aviation.

Management Proposal SATURN S-II Stage Systems, Volumes 1, 2, and 3, Douglas Aircraft Report No. SM-38588, May 19, 1961.

A Capability Proposal for SATURN Stage S-II, Volumes L-IV, Convair Report No. AE61-0415, May 8, 1961.

A Report to MSFC-NASA on Experience and Capability for Performing as SATURN S-II Stage Prime Contractor, Volumes L-II, Aerojet General Corporation Report No. AGC-61001, May 1961.

Proposal for S-II Stage of SATURN C-2 Vehicle, Chrysler Corporation Report No. CP-214, May 8, 1961.

Proposal to MSFC-NASA SATURN Stage S-II, Lockheed Aircraft Corporation, Report No. LGD-126500, May 11, 1961

Qualification Proposal for SATURN S-II Development; 3 Volumes, The Martin Company - Denver; May 1961.

A Proposal to MSFC to Perform as SATURN S-II Stage Prime Contractor; 17 Volumes; Aerojet General Corporation Report No. AGC-61002, July 1961:

Volume I: Summary
Volume II: Part A; System Preliminary Design
Volume II: Part B; System Preliminary Design
Volume III: Technical Proposal
Volume IV: System Development Operations
Volume V: SATURN S-II Stage Model Specification
Volume VI: SATURN S-II GSE Model Specification
Volume VII: Program Plan
Volume VIII: General Test Plan
Volume IX: Manufacturing Plan
Volume X: Additional System Data Documents
Volume XI: Schedules and Deliveries
Volume XII: Costs and Costs Appendix
Volume XIII: Available Resources
Volume XIV: SATURN S-II Procurement and Subcontract Plan
Volume XV: Aerojet Procurement and Subcontract Policies and Procedures
Volume XVI: Related Experience and Past Performance
Volume XVII: Aerojet Reliability and Quality Assurance Procedures

A Proposal for SATURN Stage S-II; 7 Volumes; General Dynamics, Report No. AE61-0686, July 27, 1961

Proposal for ABMA S-IV Stage SATURN; Beach Aircraft Corporation; 4 Volumes; February 16, 1960.

Development Plan SATURN S-IV; Boeing Company - 2 Volumes, Report No. D2-5566.

SATURN S-IV Stage Technical Proposal; 3 Volumes; Chrysler Corporation Report No. CP-108; February 29, 1960.

A Proposal for SATURN Vehicle System Stage S-IV, 6 Volumes, General Dynamics Corporation; Report No. AE60-0167-5; February 26, 1960.

SATURN Stage S-IV, Development Acceptance Testing; General Electric Report No. DDR-60-19, February 1960.

SATURN Stage S-IV Proposal; 7 Volumes, Grumman Corporation; February 29, 1960.

A Proposal to ABMA SATURN Stage S-IV; 4 Volumes; Lockheed Aircraft Corporation, Georgia Division; Report LGD 107597; February 29, 1960.

SATURN Second Stage; 5 Volumes; Martin Company Report ER 11062P.

SATURN S-IV; 3 Volumes, McDonnell Aircraft Corporation Report No. 7374; February 29, 1960.

SATURN S-IV Stage Proposal; 3 Volumes; United Aircraft Corporation Report No.

Technical Proposal for Stage S-IV SATURN Vehicle System; 3 Volumes; North American Aviation Report MD 60-26-1; February 28, 1960.

DynaSoar-SATURN C-1 Launch Vehicle Proposal for Step II Program; MSFC; Report M-SAT-61-1, April 19, 1961.

SPECIFICATIONS

Preliminary Over-all Environmental Requirements for SATURN Booster General Specification; Fiquett, Cecil G., September 22, 1959; ABMA, SA&R Lab. (U)

Design and Development Criteria for SATURN Stage S-V; SATURN Systems Office; October 14, 1960.

Permissible Deviations and Changes to the Specification for Design and Development Criteria - SATURN Stage S-V; SATURN Systems Office; November 14, 1960.

Reliability Program Specification; DRR-TM-5-60; January 14, 1960.

Ground Support Equipment SATURN S-IV Preliminary Environmental Specifications; Garrett, Sidney W., January 16, 1960; ABMA, SA&R Lab. (U).

Preliminary Over-all Environmental Requirements for SATURN Stage S-IV; Fiquett, Cecil G., January 16, 1960; ABMA, SA&R Lab. (U).

SATURN Vehicle System Stage S-IV Specification; April 24, 1960; ABMA (C).

Preliminary SATURN Shock and Vibration Specifications; Farrow, J. H., G.C.M.S.F.C., MTP-S&M-S-60-6, November 18, 1960.

Technical Work Statement for SATURN S-IB (360" Diameter) Design, Development and Manufacturing; MSFC; (C).

Technical Work Statement for SATURN Stage S-II (260" Diameter) Design, Development and Manufacturing; M-SAT-61-1; June 1, 1961, (C).

Preliminary Criteria for Phase II Proposal for the SATURN C-3 Vehicle Section Stage Design, Development and Manufacturing (320" Diameter); M-SAT-61-3; June 30, 1961.

Memorandum No. M-P&VE-EE-699; Applicable Documents List, S-IVB Stage, with enclosures; July 5, 1962.

Memorandum No. M-SAT-SSAO-3 to M-P&VE-EE, SATURN S-II/S-IVB Applicable Documents, with enclosure; August 2, 1962.

Memorandum No. M-P&VE-EE-170, Applicable Document List, S-IVB Stage, with enclosure; July 18, 1962.

Memorandum from M-SAT-SSAO to S-IVB Project Manager, Status Review of S-IVB Applicable Documents, with enclosure; July 26, 1962.

Memorandum from M-SAT, S-IVB Stage Manager to WOO, S-IVB Specification Deviation Document; August 1, 1962.

DAC Report SM-41411, Specification Deviation Document, SATURN S-IVB System; March 31, 1962.

M-SAT-S-IVB; S-IVB Proposal Comments Submitted by MSFC Divisions and Consolidated by SATURN Systems Office; June 14, 1962.

NAA Report SID-61-367; Applicable Specifications and Deviations for SATURN S-II Stage and Ground Support Equipment; May 21, 1962.

MPR-M-SAT-61-4, Technical Work Statement for SATURN Stage S-II (320-Inch Diameter) Design, Development and Manufacturing; July 1, 1961.

M-P&VE-EE-677; S-II System Data Documents with Comments on SID-61-376 (dated May 21, 1962); June 8, 1962.

Memorandum M-P&VE-VH-95; Comments to May 21, 1962 Addition of S-II System Data Documents; June 25, 1962.

DAC Report SM-37839, Specification Deviation Document, SATURN S-IV System; December 29, 1960.

SATURN Vehicle System, Stage S-IV Specification by DOD, ABMA (Revised April 28, 1960); January 23, 1960.

MPR-M-SAT-61-6; Part B, Scope of Work for SATURN C-3; Stage S-1B, Part 1; October 4, 1961.

MSFC-CD-501, C-5 Launch Vehicle Model Specification (Preliminary Review Draft); June 27, 1962.

Report No. AE 60-1066; Proposal for SATURN Stage S-V, Vol. II, Addendum, Compliance with Selected MSFC Specifications; January 5, 1961.

SID 61-428 - S-II Stage and GSE Equipment Specifications - Acceptable, Acceptable with Deviations, and Non-applicable; December 4, 1961.

SID-61-444 - Model Specification for Non-Deliverable GSE, SATURN Stage S-II; February 27, 1962.

SID 62-224 - Hydraulic Control Systems Specifications; February 8, 1962.

MC281-0001 - Procurement Specification-Pump, Hydraulic, Variable, Delivery, 300 psi; January 27, 1962.

MC281-0002 - Procurement Specification-Pump, Auxiliary Motor, Hydraulic, Variable Delivery; January 27, 1962.

MC282-0001 - Procurement Specification-Accumulator, Reservoir, Manifold Assembly, Hydraulic; February 5, 1962.

MC287-0001 - Procurement Specification-Actuator, Servo, Hydraulic; January 27, 1962.

PRESENTATIONS - TALKS - ARTICLES

ABMA Presentation to NASA, December 15, 1962; D-TM-1-59, ABMA (DOD) (S).

Tracking Accuracies for Lunar Missions; September 22, 1960; Speer, Fridtjof A., Prepared for the 7th Annual Meeting of the American Astro. Society, January 1961.

Trip Report to ABMA Concerning Boattail Heating in the SATURN Missile; May 7-8, 1959; May 27, 1959; Rocketdyne (C).

Presentation to the OSD Scientific Advisory Committee on May 28-29, 1959. (U) June 22, 1959; AOMC (S)

REDSTONE, JUPITER, SATURN: Evolution of a Measuring System, Paluden, C.T.N., 20 Nov 59, American Rocket Society (U)

History of Army Ballistic Missile Agency, 1 July - 31 December 1959, Fowler, F. Hoy, Satterfield, Paul H., Akens, David S., 31 Dec 59, ABMA (S)

U. S. Aeronautics and Space Activities, January 1 to December 31, 1959 - Report to Congress from the President of the United States, 31 Dec 59, NASA (U)

The Challenge of Space Exploration, NASA 1959

Advanced 24-hr. Orbit Satellite Communication System, Vehicle and Satellite Considerations, 11 Jan 1960, J. H. W. Unger, SSO

SATURN Booster Recovery System, Rodolfo M. Barraza, 1 Mar 60 Article in the New York Herald Tribune

Transportation and Handling of the SATURN Booster (SATURN Barge) Julian Hamilton, (LOD) Mar 60, Prepared for the ARS meeting at Detroit, Mich, 24 Mar 60

Transportation and Handling of the SATURN Booster, Hamilton, Julian S., Mar 60, 6p, American Rocket Society (U)

Hearings Before the NASA Authorization Subcommittee of the Committee on Aeronautical and Space Sciences United States Senate Eight-Sixth Congress Second Session on H. R. 10809 - Part I Program Detail for Fiscal Year 1961, 30 May 60, Senate Committee on Aeronautical and Space Sciences, (U)

*Many Articles, Speeches, etc., are not listed here, but may be obtained from Mr. Joe Jones of the Public Information Office, GCMSFC.

Hearings before the NASA Authorization Subcommittee of the Committee on Aeronautical and Space Sciences United States Senate Eight-Sixth Congress Second Session on H. R. 10809 - Part I Program Detail for Fiscal Year 1961 30 May 60, Senate Committee on Aeronautical and Space Sciences, (U)

Tiger by the Tail, Wm. S. Burks, Jr., 6 Jul 60 Mobile Engr. Dist. Story of Construction of the Static Test Stand.

United States Space Carrier Vehicle Program, Dr. von Braun, (Director) Presentation - 11th International Astro - Congress Stockholm, Sweden, 16 Aug 60 (U)

Second Semiannual Report of the National Aeronautics and Space Administration Message From the President of the United States Covering the Period 1 April 1959, Through 30 September 1959, Pursuant to the NASA Act of 1959, 1960, House of Representatives (U)

MSFC - Industrial Conference Presentation the SATURN Program Dr. O. H. Lange, (SSO) 27 Sept 60 (U)

Noise Radiation From Rocket Motor Clusters, W. D. Dorland (Test Div) Prep. For October 20-22, 1960 Meeting of the Acoustical Society of America, San Francisco, California

Some Current Investigations in Communications with SATURN Booster, Dr. Gorges (Aeroballistic Lab) 1 Dec 1960 Prepared for ARS Meeting at Tullahoma, Tennessee

Ground Equipment to Support the SATURN Vehicle, Gorg von Tiesenhausen, Prepared for the ARS Meeting 5 Dec 1960

Tooling for the SATURN, Hans H. Maus 1960

SATURN Test Facility, Test Lab. 1960 (Brochure)

The H-1 Rocket Engine, Roy Healy NAA-Rocketdyne, Canoga Park, 1960

The Why of Space Exploration

*Many articles, speeches, etc., are not listed here, but may be obtained from Mr. Joe Jones of the Public Information Office, GCMSFC.

51,435 Fast Start on Road to Moon - Business Wk. No. 1705, pp 72, 74, 76 May 5, 1962

S. P. Hale - "The SATURN Story" - Nashville, Tenn. Kiwanis Club, Jan 19, 1962

S. P. Hale - "The Challenge of Outer Space" - Louisiana Bankers Association's Annual Mid-Winter Conference, Baton Rouge, La., Jan 29, 1962

S. P. Hale - "MSFC and Alabama" - Anniston, Alabama Kiwanis Club, June 21, 1962

Presentations Marshall & the SATURN Project (U)

SATURN, No date, Brochure type report, (U)

Jul 8 - K. K. Dannenberg, Tampa, Fla., U. of Fla.

Sept 21 - K. K. Dannenberg, Okla. City, Okla., Rehabilitation Assn.

Sept 25 - Eberhard Rees, Honolula, Hawaii, AMRKT Soc.

Sept 25 - Emil Hellebrand, Chattanooga, Tenn. Tenn Va Med Assn

Oct 6 - Tom Edwards, Marietta, Ga., Rotary Club

Oct 10 - Bob Voss, N.Y. City, N.Y., ARS SFRN

Oct 12 - K. K. Dannenberg, N.Y. City, N.Y. ARS SFRN

Oct 13 - Dr. O. H. Lange, Friedburg, Germany

January 20 - K. K. Dannenberg, Chattanooga, Tenn, AICHE

February 14 - Tom Edwards, Mobile, Ala., Kiwanis Club

February 16 - Dr. Eberhard Rees, Bonn, Germany (West) Atomform

February 21 - Marion Kent, Bay St. Louis, Missouri, Hancock County Bd of Supv

February 27 - Dr. O. H. Lange, Troy, N.Y.

S. P. Hale - "Saturn Vehicle Project" - Script for Ala. Educational TV series "The Space Beyond" - May 12, 1961

S. P. Hale - "Project SATURN - A Challenge to Ingenuity" - St. Louis, Mo. - A.S.Q.C.'s 16th Annual Midwestern Conference, Oct 20, 1961.

S. P. Hale - "The NASA Space Flight Program" - Aerospace Education Work Shop, Miami University, Oxford, Ohio, July 7, 1961

S. P. Hale - "Things Out of This World" - American Legion Post #167, Lanett, Ala., Nov 14, 1961

S. P. Hale - "The Challenges of Space" - Snead Jr. College, Boaz, Ala. Jan 18, 1962

PROGRESS REPORTS CHRYSLER

Monthly Progress Report on JUNO V (SATURN), 16 Apr 59, Chrysler Corp. (S) A parameter study was initiated for the E-1 parallel staging optimization vehicle.

Design and Evaluation Study, 30 Jun 59, Chrysler Corporation (S) The objective of the original study was a comparison of the relative merits of series and parallel staging techniques for future generation space vehicles which are designed to use clusters of large, conventionally fueled rocket engines.

PROGRESS REPORTS COOK

Design, Development, Testing and Delivery of a Large Booster Recovery System, Progress Reports, May 1959 thru Nov 1959, Cook Research Lab (S)

Design, Development Testing and Delivery of a Large Booster Recovery System, 13 Jul 60, 18p, Cook Research Lab (C)

PROGRESS REPORTS ---DOUGLAS AIRCRAFT COMPANY

SATURN Monthly Technical Progress and Quarterly Rpt. SM-37906 dtd Aug 60

SATURN Monthly Technical Progress and Quarterly Rpt. SM-37941 Sept 60

SATURN Monthly Technical Progress and Quarterly Rpt. SM-38407 Nov 60

(Progress Reports are received monthly)

SANTA MONICA REPORTS ON SATURN S-IV STAGE

38355 Panel, Aft Interstage Blowout Test

38361 Interstage Assembly Fwd.

38368 Test of Cylinder Subjected to Internal Pressure & External Tensile Load

38367 Interstage Assembly Aft

38372 Ambient Helium Sphere Tests

38379 Static Strength Test DSV-4 Engine Thrust Structure

38380 Three Dimensional Photo Elastic Study of Waffle Patters

38385 Allowable Bearing on Bolt Threads

38387 Thermal and Static Strength Test of Basic Heat Shield Structure & Attach Fittings

38395 Proff and Drop Tests of Saturn S-IV Transporter

38405 Vibration Analysis for a Saturn S-IV Vehicle (C)

38407 Monthly Technical Progress Report, Nov #6 (C)

38418 S-IV System Weigh System Proposal Report

38425 Vibration Analysis for a SATURN S-IV Vehicle (Escape Mission) (C)

38426 Liquid Hydrogen Slosh Test (C)

38430 Weight & Balence Status Report, #4 (C)

38432 Monthly Technical Progress and Quarterly Report, #7 (C)

38436 Detailed Test Plan; 300 Gallon Cryogenic Container Test

38442 Proposed E.B.E. System (C)

38445 Separation Study, #2 (C)

38449 Separation Study, #3 (C)

38454 Quality Control Plan

38462 Propellant Utilization System

38463 Weight & Balance Ststus Report, 5 and 6 (C)

38464 Technical Report

38474 Electromagnetic Interference Control Plan

38481 Wind Effects on the Saturn S-IV Stage During Transport, Staging, and Prior to Launch

*38488 Second Quarterly Progress Report, Jan/Mar, 1961

38492 Technical Progress Report - Feb., #9 (C)

38533 Various Engine Configurations and Their Effects (C)

38633 Prevention of "Crashing Seas", Damage During Water Transport

38637 Monthly and Quarterly Progress Report - March 1961, #10 (C)

38638 Vehicle Checkout Plan

38681 Optimization of 45° Skew Integral Waffle Stiffened Structure

38683 Weight & Balance Status Report, June (C)

38684 Liquid Hydrogen Hazards and Safety Precautions

38712 Weight & Balance Status Report (C)

38723 Monthly Technical Progress Report, April, 1961 #11 (C)

38730 Preliminary Interface Coordination

38738 Proposal for Saturn S-I Stage 105" Diameter Oxydizer Tank

38744 Study of Arc Suppression of Inductive Loads

39762 Test Plan - SIA

38769 Test Plan - Cold Flow Program - Battleship Stand

38770 Orbital Launch Operations Study

38771 Final Report/ Operational Requirement Study/ Saturn C-2

38776 Monthly Technical Progress Report, May #12 (C)

38777 Sloshing Parameters for Spherical Tanks

38797 Interim Status Report, Internal Insulation

38802 Monthly & Quarterly Technical Progress Report, June #13 (C)

38823 Weight & Balance Status Report, July (C)

38839 Structural Design Criteria (C)

38849 S-I/S-IV Separation Study #3 (C)

38905 Weight & Balance Status Report, August (C)

38912 Modular Aluminum Cabinets for Saturn Blockhouses

38923 Monthly Technical Progress Report, #15 (C)

38935 Weight & Balance Status Report, Sept. (C)

38937 Buckling of Sandwich Cylinder Under Axial Compression

38938 Buckling of Spherical Caps Under Uniform External Pressure

38944 Buckling of Sanwich Spherical Caps Under Uniform External Pressure

39020 Base Heating Test Program - Six Engine Shock Tube Model

39026 Monthly and Quarterly Technical Progress Report, #16 (C)

39036 Preliminary Results of Liquid Para-hydrogen Physical Properties Tests

39038 Weight & Balance Status Report, October

39043 Test Plan, Electrical System, SIA

39048 Work Statement of Subcontractor Requirements for Assistance to Life Sciences

39089 Monthly Technical Progress Report, #17 (C)

39103 Engine Slosh Tube Base, Heating Test Program

39123 Stage Load (C)

39152 Weight & Balance Status Report, Nov. (C)

39163 Monthly Technical Progress Report, #18 (C)

39175 Material & Process Development Report, (Apr. - Nov. 1961) (C)

41128 Pressure Test, Cold Helium Compressed Gas Tank

41137 Tensile Tests of Hi-shear Lock Bolts HL-350 or HL-18

41139 Meteoroid Bumper Panel Strength Test

41145 Structural Test: Diffuser Door

41159 Interstage & Skirt Proof Test

41167 MRC High Performance Insulation Strength Properties & Attachment Evaluation

41168 Engine Flame Guard

41177 Bolt Bending Effects on a Bolt-Clevis Connection

41193 Proof Test For Transporter Hoist Equipment

41196 Access Proff Kit

41205 Cryogenic Test of the Hydrostatic Test Tank

41329 Test Plan: Proposed 8' Liquid Hydrogen Tank Ice Formation Test

41349 Six Engine Shock Tube Base Heating Test Program

41386 Weight & Balance Status Report, Dec. (C)

41390 Monthly & Quarterly Technical Progress Report, #19 (C)

41391 Range Safety Planning Information (C)

41435 Test Plan: Static Firing Program, Battleship Stand

41444 Airconditioning Air Flow Distribution Test

41449 Feasibility of Manned Orbital Maintenance

41452 Weight & Balance Status Report, January (C)

41457 Reliability Allocation Methods

41464 Volumetric Calibration of the Battleship Tank

41465 Monthly Technical Progress Report, #20 (C)

41471 A Theoretical Investigation of the Pressures Resulting from the Detonation in Gaseous Hydrogen/Oxygen Mixtures at Subatmospheric Pressures

41478 GFE Requirements

41493 Weight & Balance Status Report, Feb. (C)

41534 Proposal for Component Test Facility at A45

41545 Proposed Saturn C-1 Launch Operations Program for the Chrysler Corp.

41549 Evolvment of Methods & Processes for Manufacture and Insulation

41553 Hydrogen Probe Vibration Test

41554 Monthly Technical Progress Report #21, Feb. (C)

41578 Buckling of a Truncated Sphere Due to Tensile Edge Loads

41731 Monthly & Quarterly Technical Progress Report #22 (C)

41806 Cryogenic Temperature Transducer Evaluation Test

41854 Weight & Balance Status Report, March (C)

41900 Monthly Technical Progress Report (C)

41949 S-I/S-IV Stage Separation Program - Shock Tube Model

41959 Weight & Balance Report, April (C)

41968 Scope Change 114A Firm CPFF Quotation Contract NAS7-1 (C)

41981 Monthly Technical Progress Report (C)

41988 Exhaust Reversal From Clustered Nozzles: A New Flow Model

PROGRESS REPORTS - LOCKHEED

Contractor's Monthly Progress Report for Period Ending May 31, 1960, Koch, B. C., June 15, 1960, 16p, Lockheed Aircraft Corporation, GA Division (U)

Contractor's Monthly Progress Report for Period Ending June 30, 1960, Koch, B. C. July 15, 1960, 17p, Lockheed Aircraft Corporation GA Division (U)

Contractor's Monthly Progress Report for Period Ending July 31, 1960, Koch B. C., August 15, 1960 16p, Lockheed Aircraft Corporation (U)

Reactor-In-Flight-Test Program Final Report, LMSD No. 895075, March 1961, 3 Vols. (CR)

Reactor-In-Flight-Test Vehicle Systems Study, Final Report LMSC No. 704192, December 1961, (SR)

Saturn D "Nuclear Upper Stage" Design Study Final Report, LMSC No. 704191, December 1961, (CR)

Saturn D "Nuclear Rocket Upper Stage" Mission Study Final Report LMSC No. B007036, August 1962 (SR)

PROGRESS REPORTS - SPERRY RAND

Monthly Technical Progress Report Saturn Engineering Services Program, June 1960, 20p, Sperry Rand Corp (U)

Saturn Engineering Services Program - Monthly Technical Progress Report, July 1960, 18p, Sperry Rand Corp (U)

Orbital Launch Operations Vol. 1, AB-1210-0004-1, January 1962, Sperry Rand Systems Group (SRSG)

OLO Communications & Telemetry, Vol. II, AB-1210-0004-2, January 1962, SRSG aided by: Sunnyvale Development Center and Sperry Utah Co.

OLO Navigation, Guidance & Rendezvous, Vol. III; AB-1210-0004-3, January 1962; Sperry Gyroscope Company.

OLO Attitude Control, Vol. IV; AB-1210-0004-4; January 1962 Sperry Gyroscope Company aided by: Vickers, Detroit, Michigan.

OLO Computer Requirements & Applications - Vol. V; AB-1210-0004-5, January 1962; Remington Rand Univac, St. Paul, Minn.

OLO Automatic Checkout Equipment - Vol. VI; SUCO-EJ-275-0268 & SRSG-AB-1210-0004-6, January 1962; Sperry Utah Company.

OLO Secondary Power - Vol. VII; AB-1210-0004-7, January 1962; Vickers, Torrance, California Aided by SRSG Staff.

PROGRESS REPORT-MARTIN

Design Study for Top Stage-SATURN Summary Report 27 Feb thru 1 Jul 59, Aug 59, 23p, Martin Company, (S)

Design Study for Top Stages-SATURN 27 Feb 59 thru 30 Apr 59, Progress Report, 18 May 59, 1p, Martin Company (S)

Design Study for Top Stages-SATURN Progress Report, 22 Jun 59, 2p, Martin Company (S)

Untitled, Oct 59, 3p, Martin Company (C)

ER 11629, "SATURN C-2--Operational Mode Study Final Report," Confidential

ER 11816, "SATURN C-2--Operational Mode Study Summary Report," Confidential

ER 11850, - I, II and III, "Two to Three Million Pounds Thrust Launch Vehicle Study Final Report," Confidential

ER 11911, "Two to Three Million Pounds Thrust Launch Vehicle Study Summary Report," Unclassified

ER 11996, "Special Study SATURN Launch Facility," Unknown

ER 12125 - I, II, III, "SATURN C-3--Launch Facility Study," Unclassified

NASA-CR-62-11, "SATURN Launch Vehicle Study (on Site Assembly)," Secret

ER 10458, "Affect of Winged Payload on the Saturn Booster," Secret

ER 11718, "Safety and Reliability Analysis of Nuclear Rockets for SATURN," Unknown

PROGRESS REPORTS-ROCKETDYNE

J-2 REPORTS

Report No.	Title	Date
R-2599-7	J-2 Program Monthly Progress Report for Period Ending 31 March 1961	4-7-61
R-2599-8	Same: for period ending 30 April 1961	5-5-61
R-2599-9	Same: for period ending 31 May 1961	6-7-61

J-2 REPORTS (Cont'd)

R-2599-10	Same: for period ending 30 June 1961	7-10-61
R-2599-11	Same: for period ending 31 July 1961	8-7-61
R-2599-12	Same: for period ending 31 Aug 1961	9-8-61
R-2599-13	Same: for period ending 30 Sept 1961	10-6-61
R-2599-14	Same: for period ending 31 Oct 1961	11-7-61
R-2599-15	Same: for period ending 30 Nov 1961	12-7-61
R-2599-16	Same: for period ending 31 Dec 1961	1-8-62
R-2599-17	Same: for period ending 31 Jan 1962	2-7-62
R-2599-18	Same: for period ending 28 Feb 1962	3-8-62
R-2599-19	Same: for period ending 31 Mar 1962	4-6-62
R-2599-20	Same: for period ending 30 Apr 1962	5-7-62
R-2599-21	Same: for period ending 31 May 1962	6-7-62
R-2599-22	Same: for period ending 30 Jun 1962	7-9-62
R-3500-1	J-2 Program Plan - 28 Feb 1962	3-28-62
R-3500-2	J-2 Program Plan - 31 May 1962	6-26-62
R-3500-2A	J-2 Program Plan - 31 May 1962	6-28-62
R-2600-1	J-2 Program Quarterly Progress Report for Period Ending 30 Nov 1960	12-28-60
R-2600-2	Same: for period ending 28 Feb 1961	3-28-61
R-2600-3	Same: for period ending 31 May 1961	6-28-61
R-2600-4	Same: for period ending 31 Aug 1961	9-29-61
R-2600-5	Same: for period ending 30 Nov 1961	1-2-62
R-2600-6	Same: for period ending 28 Feb 1962	3-28-62
R-2600-7	Same: for period ending 31 May 1962	6-27-62
R-2158S	Model Specification	9-1-60
R-21582S	Model Specification	1-18-62

J-2 REPORTS (Cont'd)

Report No.	Title	Date
R-21582S	Model Specification (Amendment No. 2)	1-26-62
R-2661-1	J-2 Design Information	9-23-60
R-2661-2	J-2 Design Information	10-20-60
R-2661-3	J-2 Design Information	1-13-61
R-2948P	Proposed J-2 Flight Instrumentation Sys.	3-31-61
R-2661-4	J-2 Rocket Engine Design Information	4-13-61
R-3037	Pneumatic Gimbal Activation (UNCLASSIFIED)	6-8-61
R-2661-4P	J-2 Rocket Engine Design Information	6-5-61
R-3121P	Program of Additional Effort for J-2 Engine	7-26-61
R-3213P	Implementation of Gaseous Hydrogen Start System	10-3-61
R-3240P	J-2 Rocket Engine Program for Early Flight Test	10-19-61
R-2948P-1	Proposed Flight Instrumentation System for J-2 Engine	11-11-61
R-3334	Rocketdyne Automatic Data Acquisition and Processing System (UNCLASSIFIED)	12-6-61
R-3300	J-2 DIR & Installation Handbook Revised: 1-31-62, 3-6-62, 3-22-62, 5-17-62	1-11-62
R-3037	Pneumatic Gimbal Actuator (UNCLASSIFIED)	1-5-62
R-3463P	Pneumatic Actuation System (UNCLASSIFIED)	2-20-62
R-3480P	Proposed Hydrogen Flowmeter Calibration Program (UNCLASSIFIED)	3-31-62
R-3595	Electro-Pneumatic Servo Control Pressurizing System Micro-gel Model 47-E Manual Controller (UNCLASSIFIED)	5-31-62
R-3598P	Program for J-2 Engine Analysis & Mod. for Automatic Checkout Compatibility	5-7-62

F-1 REPORTS

Report No.	Title	Date
R-1555-9	F-1 Quarterly Progress Report (Period Ending 31 March 1961)	4-28-61
R-1555-10	F-1 QPR (Period Ending 30 June 1961)	8-4-61
R-1555-11	F-1 QPR (Period Ending 30 Sep 1961)	10-27-61
R-1555-12	F-1 QPR (Period Ending 31 Dec 1961)	2-19-62
R-1555-13	F-1 QPR (Period Ending 31 Mar 1962)	5-22-62
R-1555-14	F-1 QPR (Period Ending 30 June 1962)	8-2-62
R-3214-1	Quarterly Program Plan	11-14-61
R-3214-2	Quarterly Program Plan	1-26-62
R-3214-3	Quarterly Program Plan	4-9-62
R-3214-4	Quarterly Program Plan	8-6-62
R-1420S	Preliminary Model Specification	3-12-59
R-1717	Thrust Vector Control Report	11-6-59
R-1559	Pressurization Studies Report	6-4-59
R-3399P	Proposed Flight Instrumentation System for the F-1 Engine	1-10-62
R-2454	F-1 Thrust Chamber Stability Rating Program	5-21-60
R-2823-1	F-1 Design Information Report	8-23-61
R-2475-1	Preliminary Design Information on High Thrust, Oxygen/Hydrogen Rocket Engine	8-10-60
R-2568	Propulsion System Catalogue	9-12-60
R-3477-1P	F-1 Follow-on Program	3-2-62
R-3200	Instruction Manual, 17,500 HP Adjustable Speed Drive	10-31-61
R-3256	Test Stand Bravo 2 Main Propellant Tank Pressurization and Gaseous Nitrogen Turbine Spin System	11-9-61

F-1 ENGINES (Cont'd)

Report No.	Title	Date
R-3404	Operating Instructions, 3000 HP Pump Drive, CTL-1	1-10-62
R-3487	Manual for Hydromatic Valves	5-21-62
R-3648	Test Stand ERS-1 A & 1B Main Propellant Tank Pressurization Manual	6-15-62

H-1 REPORTS

R-3374-1	H-1 Informal Technical Progress Report	12-21-61
R-3374-2	Same	1-19-62
R-3374-3	Same	2-22-62
R-3374-4	Same	3-21-62
R-3374-5	Same	4-25-62
R-3374-6	Same	5-22-62
R-3374-7	Same	6-21-62
R-3374-8	Same	7-23-62

NOTE: Previous to the R-3374 series reports, there were twelve informal monthly RC letter reports submitted.

NOTE: Previous requirements for Quarterly Progress Reports were prepared as Informal Progress Reports under Contract No. NAS7-4 (G.O. 5600) and were submitted as RC letter reports.

R-1344-5P	Fifth H-1 Engine Program Report: Summary of Development	4-5-61
R-1344-6P	Sixth, etc.	6-30-61
R-1344-7P	Seventh, etc.	11-21-61
R-1344-8P	Eighth, etc.	2-22-62
R-1344-9P	Ninth, etc.	5-28-62
R-2428-2P	H-1 Engine 165K PFRT Program	2-27-61
R-3451	H-1 Lubrication Studies (UNCLASSIFIED)	3-5-62

PROGRESS REPORTS-ARMY ORDNANCE MISSILE COMMAND

SATURN & Space Program Progress Report for NASA, Oct., Nov. 1958, Jan 59, thru Aug 59, AOMC

SATURN Progress Report, 31 Jan 59, 6p, Flexonics Corporation (U)

Quarterly Progress Report on ARPA Orders 14-59 & 47-59 - For First Quarter CY-1959, 7 Apr 59, AOMC (S) (Apr, Jul, Oct)

Semiannual Technical Summary Report on ARPA Orders 14-59 and 47-59, 31 Jul 59, ABMA, Weapons System Information Office (S)

Quarterly Progress Rpt. on ARPA Orders 14-59 & 47-59 for 3rd Qtr. CY-59 8 Oct 59 RCS-ORDXM-C-1004 AOMC (S)

Quarterly Progress Report on ARPA Orders 14-59 & 47-59 for Fourth Quarter CY-59, 8 Jan 60, 30p, AOMC (C)

SATURN Project, 8 Feb 60, 24p, ABMA (C)

Semiannual Technical Summary Report on ARPA Orders 14-59 and 47-59 (U), 15 Feb 60, 213p (ABMA) (S)

Progress Report of ARPA Orders 14-59 and 47-59 for January and February 1960, 8 Mar 60, 38p, AOMC (C)

SATURN Progress Report, 31 Jan 59, Flexonics Corporation (U)

Quarterly Progress Report on ARPA Orders 14-59 and 47-59 for March, April, and May 1960, 7 Jun 60 ABMA (C)

BIBLIOGRAPHY OF AEROJET REPORTS ON SATURN

Aerojet-General Corporation R-236-M-0260 Conf. BI-WEEKLY PROGRESS REPORT - SGGP SYSTEMS DEVELOPMENT, 7-21 NOVEMBER 1959, by J.D. Barney, 8 Dec 1959.

Aerojet-General Corporation SR-60105 Conf. A CONCEPT FOR THE DESIGN, FABRICATION AND DEVELOPMENT OF VERY LARGE SOLID ROCKET MOTORS. Apr 1960.

Aerojet-General Corporation SD-62049 Conf. A PROPOSAL TO DOUGLAS AIRCRAFT COMPANY, MISSILES AND SPACE DIVISION FOR DEVELOPMENT OF 35,000-LB THRUST LO_2/LH_2 ENGINE. Feb 1962.

Aerojet-General Corporation CR-122 Rev. A Conf. ROCKET ENGINES FOR THE SATURN PROGRAM: REVISION A. Oct 1959.

Aerojet-General Corporation SR-61241 SATURN FIRST-STAGE SEPARATION RETRO-ROCKET ATTACH AND ALIGHMENT SYSTEM, 13 Jul 1961.

Aerojet-General Corporation LR-61256F Vol. 1 SUBCONTRACT PROPOSAL TO AERONUTRONICS DIVISION OF FORD MOTOR COMPANY, PROPOSED PRIME CONTRACTOR SATURN STAGE I: (a) VOLUME I; MANAGEMENT AND TECHNICAL DISCUSSION: 27 Oct 1961.

Aerojet-General Corporation LR-61256L Vol. 1 SUBCONTRACT PROPOSAL TO LING-TEMCO-VOUCHT PROPOSED PRIME CONTRACTOR SATURN STAGE I: (a) VOLUME I; MANAGEMENT AND TECHNICAL DISCUSSION. 27 Oct 1961.

Aerojet-General Corporation R-8115-01M-1 Conf. TECHNICAL PROGRESS REPORT FOR THE SATURN PROGRAM. Contract DA-04-200-506-ORD-1014; covering period 27 Jul - 15 Nov 1959. 16 Dec 1959.

PROGRESS REPORTS - BOEING AIRCRAFT CO.

Work Directive Monthly Progress Report, Published July 20, 1962 for period May 25 through June 28, 1962. Unclassified. (Operations Planning and Control Department, Org. 5-2100.)

Bi-Weekly Man power Status Report, Published August 16, 1962. Unclassified. Published by Operations Status Section.

Monthly Progress Report, Published April 13, 1962, for Period February 23 through March 29, 1962, Document No. D5-10017-1. Unclassified. (Published by Operations Status Section)

Monthly Progress Report; Published May 15, 1962, for Period March 30 through April 26, 1962, Document No. D5-10017-2. Unclassified. (Published by Operations Status Section.)

Monthly Progress Report, Published June 15, 1962, for Period April 27 through May 24, 1962, Document No. D5-10017-3. Unclassified. (Published by Operations Status Section.)

Monthly Progress Report, Published July 15, 1962, for Period May 25 through June 28, 1962, Document No. D5-10017-4. Unclassified. (Published by Operations Status Section.)

Monthly Progress Report, Published August 20, 1962, for Period June 27 through July 26, 1962, Document No. D5-10017-5. Unclassified. (Published by Operations Status Section.)

Monthly Progress Report, Memo No. 5-7150H-EAB-76-OR, Subject: April Progress Report - SATURN Engineering Department.)

Monthly Progress Report, Memo No. 5-7130H-EAB-07-OR, Subject: May Progress Report - SATURN Engineering Department. Published May 31, 1962. (Published by Engineering Department.)

Monthly Progress Report, Memo No. 5-7130-H-28-OR, Subject: June Progress Report - SATURN Engineering Department. Published July 2, 1962. (Published by Engineering Department.)

Monthly Progress Report, Memo No. 5-7130-H-46-OR, Subject: July Progress Report - SATURN Engineering Department. Published August 2, 1962. (Published by Engineering Department.)

SATURN SYSTEMS OFFICE MONTHLY PROGRESS REPORTS

Saturn Program Report, March 22, 1961 by Dr. Lange (S)

SAT-61-2, Saturn Semi-Annual Report, (Jan 1 - Dec 31, 1960), by SSO dated May 11, 1961 (C)

SAT-61-1, Saturn Quarterly Progress Report, (Jan - Mar 1961), by SSO, dated May 8, 1961 (C)

SAT-61-7, Saturn Quarterly Progress Report, (Apr - June 61), August 7, 1961 (C)

SAT-61-11, Saturn Quarterly Progress Report (July - Sept 1961), by SSO dated December 1, 1961 (C)

Saturn Illustrated Chronology (Apr 57-Oct 61) by SSO (U)

SAT-62-3, Saturn Quarterly Progress Report (Jan - Mar 62) by SSO (C)

SAT-62-4, Saturn Monthly Progress Report (Apr 12 - May 12, 1962) May 21, 1962 (C)

SAT-62-7, Saturn Monthly Progress Report (June 13-July 12, 1962) July 18, 1962 (C)

TECHNICAL STUDIES SECTION

1. SATURN Systems
2. SATURN Missions and Payloads
3. Structural Design
4. Propulsion
5. Recovery
6. Aerodynamics
7. Fluid Dynamics
8. Vibration
9. Guidance
10. Control
11. Launching Dynamics
12. Reliability & Quality Control
13. Instrumentation & Telemetry
14. Flight Evaluation

TECHNICAL STUDY
SATURN SYSTEMS

Study Results Juno V Program Based on 19-21 Aug 58 ABMA-JPL Conference, 5 Sept 58, DSP-TM-8-58, DOD (ABMA) (S)

Juno V Stage Vehicle Development Plan (Phase I) Booster Feasibility Demonstration, DSP-TM-10-58, 13 Oct 58, ABMA (S)

SATURN System Study, H. H. Koelle, F. L. Williams, W. G. Huber, 13 Mar 59, ABMA, S&M Lab (S)

Structures and Mechanics Laboratory System Description for SATURN Vehicle, Uherka, Myron, 2 Apr 59, 27p, ABMA, S&M Lab (S)

Systems Description for SATURN Vehicle (SA-1 through SA-4) (U), Uherka, Myron, 2 Apr 59, 29p, ABMA, S&M Lab (S)

Preliminary Performance Data of SATURN Space Vehicles, R.C. Callaway, A. W. Galzorano, P.G. Thomas, 1 May 59, ABMA, S&M Lab (S)

Development of Saturn I, System Description of Ground Support Equipment, 21 Sept 59, W.G. Hunter, SSE Lab, ABMA

Saturn Separation Techniques Based on B-1 Configuration, DSP-TM-9-59, 23 Oct 59

Comments on Engine-Out Performance of Clustered Engine Booster Rocket Vehicles, Barker, C.L., Jr., Ruppe, H.O., 5 Nov 59, 13p, ABMA, S&M Lab (U)

Saturn System Study II, 13 Nov 59, ABMA, S&M Lab (C)

Parallel Staging, Rpt. 1, 2 and 3, 1959, Rudi G. Reichert, R. Schmidt, J. Laue, W. Haarmann, S&M Lab, ABMA

Saturn Booster Description (SAT-T & SA-1), 6 Jan 60, DSL-TM-5-60, ABMA, (C)

Early Orbit Determination Scheme for Juno Space Vehicle DA-TR-3-60, 20 Jan 60, ABMA

Power Supplies for Space Application, DV-TR-3-60, 15 Feb 60, ABMA (S)

Preliminary Optimization of SATURN C-2 (U), Callaway, R.C., 17 Mar 60, 38p, ABMA, S&M Lab (C)

Analytical Weight Analysis of Saturn Vehicle, SA-1, DSL-TM-17-60, 18 April 1960, (C)

SATURN Vehicle: Comparative Study of Performance and Controllability of Two-Stage and Three-Stage Versions for Low Altitude Orbits (U), Hoelker, R.F., Jean, O.C., 25 May 60, 16p, ABMA-AERO Lab (C)

Preliminary Evaluation of the Block 1 SATURN S-I Stage Performance Characteristics, Black, Paul E., Igou, James M., 8 Jun 60, 46p, ABMA, S&M Lab (U)

Saturn SA-1 Vehicle Data Book, MM-M-S&M-E-1-60, 25 July 1960, (C)

Load Investigation of the Saturn C-1 and C-2 Vehicles Subjected to Wind During Assembly on the Launch Pad, MM-M-S&M-S-2-60, 1 Aug 60 (C)

Saturn C-2 Phase One Preliminary Design Report, MNM-M-S&M-F-1-60, 3 Aug 60 (C)

Liquid Oxygen and Liquid Hydrogen Vapor Pressure and Specific Weight Versus Temperature Data Standard for Saturn Vehicle Systems Development, MM-M-S&M-P-4-60, 12 Aug 60

Survey of Characteristic Velocity Requirements for Two-Impulse Transfer Between Circular and Co-Planer Exterior Elliptical Orbit with Exposition of Local and Overall Optimum Solution, Solber, Robert, 14 Sep 60 (U) MTP-AERO-60-10

Instrument Panel for Saturn Vehicle (Styrofome Cored), MTP-M-S&M-E-4-60, 17 Oct 60

Predicted Mass Characteristics of Saturn SA-1 Vehicle, MTP-M-S&M-E-5-60, Nov 60 (C)

IN-P&VE-E-62-1, Saturn C-1 Vehicle Environ. Criteria, Jan. 15, U., Design Criteria Unit

IN-P&VE-E-62-5, Compatibility Analysis of Saturn SA-1, S-I Stage Components, U., -EF

IN-P&VE-E-62-7, Final Preflight Mass Characteristics of Saturn SA-2 Vehicle (U), C., M. Geiger

IN-P&VE-E-62-16, Proposed Parts Standardization Program for George C. Marshall Space Flight Center, June 8, U., Dan C. Williams

IN-P&VE-F-62-1, Survey of Metoroid Hazard, Feb 12, U., W. H. Straly

IN-P&VE-F-62-2, Cost Estimation Techniques, May 10, U., R.G. Voss, WM. G. Porter

IN-P&VE-F-62-3, Preliminary Concepts of the First Manned Space Station, Unpublished

IN-P&VE-F-62-5, Working Graphs for Artificial Lunar Satellite, July 3, U., Walter H. Stafford

IN-P&VE-F-62-6, Working Graphs for Artificial Martial Satellites July 13, U., W. H. Stafford

IN-P&VE-V-62-1 Saturn C-1 Environmental Criteria Manual, Mar 9, U., Office

IN-P&VE-V-62-2, Inputs to Saturn C-5 Project Development Plan, May 4, C., Office

IN-P&VE-V-62-3, Saturn S-IC Stage Systems Description, June 7, C., MSFC & Boeing

MTP-M-S&M-P-61-12, Saturn Computation Procedure Mark IV, Sept. 5, 1961, Unclass., G.H. McKay

MTP-M-S&M-F-61-11, Preliminary Optimization of Advanced Saturn Vehicles Part I Chemical Systems, Class., May 10, Galzarano, Wheeler, Burns

MTP-M-S&M-F-61-12, Preliminary Optimization of Advanced Saturn Vehicles, Part II Chemical-Nuclear Systems, Class., May 10, Wheeler Messer

MTP-M-S&M-F-61-13, Orbital Operations Literature Review, Unclass., May 25, W.H. Stafford

MTP-M-S&M-F-61-14, After-shutdown Radiation Field of a 1000 MW Reactor in Space (C), Dec. 1, 61, Unclass., A.D. Prescott

MTP-S&M-F-61-17, Class Vehicles Nuclear/Saturn (C-4) Lunar Vehicle Study, Sept. 8, 61, Class., R.D., Nuclear Systems and Applications

MTP-M-S&M-E-61-3, Saturn SA-1 Vehicle Data Book, Class., May 10, M-S&M-EC

MTP-P&VE-E-61-5, Saturn SA-2 Vehicle Data Book, Class., Dec. 27, Design Criteria Unit.

MTP-P&VE-E-62-1, Saturn SA-5 Vehicle Data Book, Feb 12, C., Design Criteria Unit

MTP-P&VE-E-62-2, A Generalized Approach for Systems Design Analysis and selection of Components for Automation, Jan. 4, U., M-P&VE-EF

MTP-P&VE-F-62-5, C-RD, Don Saxton, preliminary System Study of the Nuclear/Saturn (C-5) Lunar Study, Unpublished

MTP-P&VE-V-62-1, Saturn SA-3 Vehicle Data Book, July 6, C., Office

NASA TN-D-1525, Influence of Wt. Parameters on the Propulsion Requirements of Orbit Launched Vehicles, Aug 62, U., D. W. Fellenz, R. J. Harris

TECHNICAL STUDY
SATURN MISSIONS AND PAYLOADS

Preliminary Study of an Unmanned Lunar Soft-Landing Vehicle (Scientific Application), May 1, 1959, ABMA, DOD (S)

Project Horizon, Volumes I-IV, June 8, 1959, 57p., AOMC (S)

Lunar Exploration with Saturn-boosted Systems (U), October 1, 1959, 97p., ABMA RP Lab., (U)

Saturn Missile; Optimum Cut-off Angle for Lunar and Escape Missions, Schnieder, D. H., October 6, 1959, (C) DA-TM-128-59

Saturn Missile Winged Payloads - Preliminary Bending Moments and Deflections Due to Wind Velocities while Installed on the Launcher (U), Moreland, V. W., October 12, 1959, 9p, ABMA S&M Lab. (U)

ABMA Space Vehicles, (U), Geissler, E. D., November 24, 1959, 35p., ABMA, AERO Lab (C)

Saturn 24-Hour Communication Satellite System - Development Proposal, Volumes I and II, November 30, 1959, 420p., ABMA SA&R Lab (C)

Saturn 24-Hour Communication Satellite System - Development Proposal, Volume I, November 30, 1959, 420p., ABMA, SR&D Lab (C)

Saturn 24-Hour Communication Satellite System - Development Proposal, Volume II - Funding, Schedules and Management; November 30, 1959, 40p., ABMA SR&D Lab (C)

A Lunar Exploration Program Based upon Saturn-boosted Systems, February 1, 1960, 381p., ABMA (C)

SATURN: 24-Hour Satellite for Ultraviolet Astronomy (U), Swanson, Conrad, Festa, Rudolph, February 10, 1960, 38p., ABMA S&M Lab (U), DSP-TM-1-60.

Calendar of Planetary Phenomena for Space Mission Planning, DAP-TN-2-60, February 24, 1960, ABMA (U)

Use of Lift for Deceleration and Range Control for Re-entry of Space Vehicles, Schwaniger, A., May 11, 1960 (U), DA-TM-39-60.

Launch Vehicles for Lunar Flight, Stuhlinger, Ernst, May 12, 1960, 8p., American Rocket Society, (U)

Saturn Payload Re-entry Characteristics, Fellenz, Dietrich W., June 20, 1960, 80p., ABMA S&M Lab. (C) DSP-TN-5-60

Calendar of Planetary Phenomena for Space Mission Planning (Revised) July 10, 1960, MNN-M-S&M-F-1-60, NASA (U)

United States Space Carrier Vehicle, von Braun, Werhner, August 16, 1i60, 34p., NASA (U)

Project Apollo Working Paper, No. 1001, September 15, 1960, Langley (STC)

Project Apollo Working Paper, No. 1002, (Booster Systems - SATURN C-1 & C-2), November 9, 1960 (STG) (C)

Preliminary Mass Characteristics of SATURN C-1 Dyna Soar Vehicle, Decembef 2, 1960, Palaoro, W. R., M-S&M-EC-78

SAT-61-1, Dyna Soar-SATURN C-1 Launch Vehicle Study for Dyna Soar Step II Program, April 19, 1961 (S)

SAT-61-5, The Apollo "A"/SATURN C-1 Launch Vehicle System by M-SAT, July 17, 1961 (C)

TECHNICAL STUDY - STRUCTURAL DESIGN

Comparative Mass Characteristics for SATURN Vehicles 3 & 4 (ATLAS & TITAN), Johns, Stanley A., February 25, 1959, ABMA S&M Lab. (S)

Comparative Mass Characteristics for SATURN Vehicles 8, 9 & 10, (ATLAS & TITAN), Johns, Stanley A., February 25, 1959, ABMA S&M Lab (S)

Preliminary Tie-down Loads for SATURN Missile, Earls, James E., April 21, 1959, ABMA S&M Lab (S)

Revised Tie-down Loads for the SATURN Missile, Stevens, John T., June 18, 1959, ABMA S&M Lab. (S)

Static Longitudinal Stability and Drag Characteristics of a Preliminary SATURN Booster Configuration at Angles of Attack up to 180 Degrees, Andrews, C. Dale, July 10, 1959, ABMA AERO Lab (C)

Preliminary Deflections for the SATURN Missile, Showers, Nathan, July 31, 1959, ABMA S&M Lab. (C) DSF-TN-20-59

SATURN Missile - Blocks I and II Preliminary Investigation of Expected Maximum Loads in Ascent; Wells, Verleria G., August 18, 1959, ABMA S&M Lab (C)

Preliminary Bending Moments and Deflection on the SATURN Missile to Wind Velocities While Installed on the Launcher; Moreland, V. W., August 31, 1959, ABMA S&M Lab. (S) DSF-TN-22-59

Design Study for Top Stage SATURN; August 1959; Martin Company (S)

Study of the Longitudinal Principal Axis of the SATURN Missile System; Denton, Stephen J., September 9, 1959; ABMA S&M Lab (S) DSL-TN-32-59.

Flow Study of 1:4 Scale Model LOX Containers for SATURN (SA-1)(Summary of Test Through August 31, 1959); Arther, Robert M., September 15, 1959, ABMA S&M Lab (U)

A Feasibility Study of Eight Arrangements for Cooling the Fuel While Aboard the SATURN Booster Prior to Lift-off at Canaveral; Jordan, William D., October 13, 1959; ABMA S&M Lab (U) DSD-TN-27-59.

Preliminary Design Information for SATURN Second and Third Stages; October 19, 1969; Convair (S)

Preliminary Bending Moments and Deflections for a Winged Payload SATURN Missile While Installed on the Launcher; Moreland, V. W., November 20, 1959; ABMA S&M Lab (C) DSF-TN-30-59

Preliminary Weight Breakdown for SATURN Booster SA-1; December 14, 1959, ABMA S&M Lab (C)

SATURN Separation Techniques (Based on B-1 Configuration); Dobbins, Edward B., Wells, Hubert B.; December 23, 1959, ABMA S&M Lab (U)

SATURN Base Plate Thermal Radiative Calculation Procedures; Fitzpatrick, E. J., December 28, 1959, ABMA S&M Lab (C)

SATURN Booster Description (SA-T and SA-1); Uherka, Myron; January 6, 1960; ABMA S&M Lab (C)

Effect of Upper Stage Length and Upper Stage Shroud Configuration on the Static Longitudinal Stability and Drag Characteristics of a Preliminary SATURN Configuration; Andrews, C. Dale; Auer, Ann C., January 13, 1960, ABMA AERO Lab (C)

SATURN System Quality Engineering Plan; January 18, 1960; ABMA SA&R Lab (U)

Structural Loads Imposed on the SATURN C-1 and SA-1 Missiles Due to Wind Velocities While Erected in the Service Tower at the Launch Facility; Showers, N., Moreland, V. W., Fabruary 2, 1960; ABMA S&M Lab (C) DSF-TN-1-60

Feasibility Study on a High Pressure Heating System for the SATURN Booster Engine Compartments; Lee, Thomas J., February 11, 1960, ABMA SSE Lab (U)

Design and Development of the Liquid Oxygen Heat Exchanger for Pressurizing the SATURN Booster LOX Tanks; Nein, Max E., Platt, Gordon K., February 19, 1960; ABMA S&M Lab (C) DSD-TN-7-60

Preliminary Investigation of Maximum Loads During Ascent for the SATURN Missiles SA-1 Case V; Showers, Nathan; Wells, Valeria G., February 29, 1960, ABMA S&M Lab (C) DSF-TN-3-60

Preliminary Structural Loads and Deflections of the SATURN SA-1 Case V While Installed on the Launcher; Moreland, V. W., March 1, 1960, ABMA S&M Lab (C) DSF-TN-4-60

Structural Loads Imposed on the SATURN SA-1 (Case V) Missile Due to Wind Velocities While Erected on the Service Structure at the Launch Facility; DSF-TN-6-60; March 10, 1960 (C)

Transportation and Handling of the SATURN Booster; Hamilton, Julian S., March 1960, American Rocket Society (U)

Analytical Weight Analysis of SATURN Vehicle, April 18, 1960, ABMA S&M Lab (C)

A Preliminary Study of Lift-off Motion of the SATURN SA-1 Missile Including Structural Bending Effects; Howers, Nathan; Moreland, Wayne; April 24, 1960, ABMA S&M Lab (C)

Dive Phase Structural Loads on the SATURN SA-1 Booster (S-I Stage), Showers, N., Wells, V. G., May 4, 1960, ABMA S&M Lab (C) DSF-TN-9-60

SATURN Destruction Test, DSD-TN-15-60; May 6, 1960

Structural Loads Imposed on the SATURN SA-1 (Case V) Missile Due to Wind Velocities While Erected in the Service Tower at the Launch Facility; Moreland, V. W., May 10, 1960, ABMA SSE Lab (C)

Determination of the Angle and Level of Flotation of the SATURN Booster, Hildbrand, Arnold; March 3, 1960, ABMA SSE Lab (C)

SATURN Next Assembly List, DSL-TM-28-60, May 13, 1960

Status Report on Metal Spinning Processes; Schuerer, Payl H., May 15, 1960, ABMA F&AE Lab (U)

Load Investigation of the SATURN SA-1 (Case V) Vehicle Assembly and its Stage Combinations when Supported in a Horizontal Attitude; June 15, 1960, ABMA S&M Lab (C); Woodring, D., DSF-TN-13-60

SATURN Spacemetal Components, June 20, 1960, North American Aviation (U)

Estimate of the Structural Response of a SATURN Vehicle in the Vicinity of the Engine Cluster During Launch; June 28, 1960; Bolt Beranek and Newman Inc., (U)

Static Load Test of a 70-Inch SATURN outer LOX Tank, MM-M-S&M-s-4-60, September 6, 1960.

Preliminary Weight Breakdown for SATURN S-IV Stage, M-S&M-EC-52, October 10, 1960

Propellant Venting on SATURN C-1 Vehicle, M-S&M-EC-62; October 25, 1960, Palaoro, W. R.

SATURN Separation Techniques C-2 Configuration; Ifshin, Donald J., November 13, 1960, ABMA S&M Lab (C)

SATURN Master Drawing List; Kennamer, D. C., S&M (Issued Monthly)

I N-M-S&M-M-61-6, Considerations on the Evaporation of Materials in Vacuum, September 19, 1961; Riehl, W. A., (U)

IN-M-S&M-M-61-7, Compatibility of Titanium with Liquid Oxygen State-of-the-Art, October 19, 1961; Riehl, W. A., (U)

IN-M-S&M-M-61-8, Corrosion Tests of Various Surface Treatments of Aluminum Alloys, October 23, 1961; Higgins, R. H. (U)

IN-M-S&M-F-61-2, Preliminary Performance Study for Modular Versus Single Tank Nova-Class Vehicles, September 1, 1961; Wheeler and Galzerano (C)

IN-M-S&M-EE-61-1, Mercury Redstone Master Drawing List, June 26, 1961, Kennamer, D. F. (U)

IN-M-S&M-EE-61-4, SATURN Master Drawing List, July 5, 1961,Kennamer, D. F., (U)

IN-M-S&M-E-61-5, SATURN Block I Design Criteria, August 11, 1961; Design Integration Unit; (C)

IN-M-S&M-E-61-6, Preliminary SATURN C-3 Data for Nuclear Studies, August 11, 1961; Systems Criteria Section (C)

IN-M-P&VE-E-61-7, SATURN Component Heaters, November 9, 1961; Functional System Integration Unit (U)

IN-M-S&M-EE-61-8, Mercury Master Drawing List, August 21, 1961; Kennamer, D. F., (U)

IN-M-S&M-E-61-9, Preliminary SATURN C-3 Design Criteria, August 28, 1961; Design Integration Unit (C)

IN-M-S&M-E-61-10, Mass Characteristics Error Analysis of the SATURN SA-1 Vehicle, September 1, 1961, Scott, Ronald C (C)

IN-M-S&M-EE-61-11, SATURN Master Drawing List, September 6, 1961; Kennamer, D. F., (U)

IN-M-S&M-E-61-12, Preliminary SATURN C-4 Design Criteria, October 4, 1961; Design Criteria Unit (C)

IN-M-S&M-E-61-13, SATURN Master Drawing List, October 9, 1961, Kennamer, D. F. (U)

IN-M-S&M-S-61-14, Compressive Buckling Test of an Integrally Stiffened Cylinder, September 20, 1961, Katz, Lester (U)

IN-M-P&VE-E-61-15, SATURN C-4 Vehicle Data, November 7, 1961, Design Criteria Unit (C/RD)

IN-M-P&VE-E-61-16, SATURN Master Drawing List, November 1, 1961, Kennamer, Jean, (U)

IN-M-P&VE-E-61-18, SATURN Master Drawing List, December 5, 1961, Kennamer, Jean (U)

IN-S&M-S-61-12, Experimental Stresses and Critical Buckling Loads on Two Types of Shallow Ribbed Cylinders, Katz, L.

MTP-M-S&M-M-61-11, Development of Slip Cast Fused Used Silica; A Thermal Shock Resistant Ceramic, May 10; Mr. Seitzinger (U)

MTP-M-S&M-M-61-12, Low Temperature Mechanical Insulation Properties 202 Stainless Steel Parent Metal and Weldments, May 10; Reece (U)

MTP-S&M-M-61-16, Load Temperature Mechanical Properties of Several Aluminum Alloys and their Weldments, October 2, 1961, Miller, P. C. (U)

MTP-S&M-M-61-18, Investigation of Scale Removal Procedures for 17-7 PH Stainless Steel, October 12, 1961; Williamson and Higgins (U)

MTP-S&M-M-61-20, Descaling of 304-321 Stainless Steel Weld Areas, October 30, 1961; Phillips, J. R. and Higgins, R. H. (U)

MTP-S&M-M-61-21, Corrosion Problems Associated with SA-1 Launch Vehicle, Williamson, J. G. (U)

MTP-M-S&M-F-61-15, Geometrical and Mechanical Properties of the Ungula of the Right Circular Cylinder; August 23, 1961; Krause, Helmuet G. L. (U)

MTP-S&M-F-61-16, Properties of Spheres Spheroids and Elliptical Lenses Used as Propellant Tanks, December 5, 1961; Gary (U)

MTP-M-S&M-E-61-1, SATURN S-IV Design Criteria, May 10, M-S&M-EC (C)

MTP-M-S&M-E-61-2, SATURN SA-7 Design Criteria, May 5, M-S&M-EC (C)

MTP-S&M-S-61-6, Structural Tests of the SATURN C-1 Block I Tail Section Assembly and Booster Cluster Assembly, October 30; Wagganer, G. B. (U)

IN-P&VE-E-62-13, SATURN Master Drawing List, June 9; Graham, Tom (U)

IN-P&VE-E-62-15, SATURN Master Drawing List (U)

IN-P&VE-M-62-2, Weldability Study Plans of 5426-H343 and 2219-T87 Aluminum Alloy Plates, April 2; Cataldo, C. E.

IN-P&VE-M-62-3, Low Temperature Mechanical Properties of X-2020-T6 and 2219-T6 Aluminum Sheet Alloys, May 8; Lovoy, C. V.

IN-P&VE-M-62-4, Low Temperature Mechanical Properties of A-286 Alloy and Its Weldments, May 28; Morgan, W. R.

IN-P&VE-M-62-5, Low Temperature Mechanical Properties of Inconel-X and Its Weldments, July 24; Lovoy, C. V.

IN-P&VE-M-62-6, Low Temperature Mechanical Properites of Rene' 41 Alloy and Its Weldments, July 24; Miller, P. C.

IN-P&VE-P-62-4, SATURN SA-5 S-I Stage Propellant System Preliminary Flight Prediction and Weight History Study, January 15; McKay, Castelberry and Montgomery (C)

IN-P&VE-P-62-5, Development of Device for Welding in an Inert Atmosphere, January 19, Spier (U)

IN-P&VE-E-62-2, SATURN Master Drawing List, January 14; Kennamer, D. F., (U)

IN-P&VE-E-62-4, SATURN Master Drawing List, February 13, Kennamer (U)

IN-P&VE-E-62-8, SATURN Master Drawing List, March 20; Bradford, J. H. (U)

IN-P&VE-EE-62-9, SATURN Master Drawing List, April 20; Graham, T. E. (U)

IN-P&VE-E-62-10, Kinematic Clearance Study Tail Area - S-1 Stage of SATURN SA-5 Vehicle, April 18; Webber, R. E., (U)

IN-P&VE-EE-62-11, SATURN Master Drawing List; Graham, T. E. (U)

IN-P&VE-S-62-1, Structural Test Plan for the SA-5 Tail Section Assembly, Booster Cluster Assembly & Major Components, January 18; Waggoner, Gerald B. (U)

IN-P&VE-S-62-2, Experimental Determination of Stress Concentrations Produced by Rectangular Cutouts in Flat Panels, March 20; Nichols, Jack (U)

IN-P&VE-S-62-3, SATURN (SA-1-4) 105-Inch Oxidizer Tank Assembly Forward Bulkhead Pressure & Simulated Manifold Lines Land Test, April 11; Fama, Nicola (U)

IN-P&VE-S-62-4, SATURN (SA-1-5) 104-Inch Oxidizer Tank Skirt Assemblies Axial Compressive Loads Test; Fama, Nicola (U)

IN-P&VE-S-62-6, Calibration of Force Washers for SATURN C-1 Vehicles SA-2, SA-3, & SA-4; May 4; Slayden, Kay W. (U)

IN-P&VE-S-62-8, Structural Analysis Report SA-5-07 (U)

IN-P&VE-S-62-9, Cylinders of Sandwich Construction Method of Analysis, July 13, Coldwater, Harold R. (U)

IN-P&VE-S-62-10, Multicell Versus Cylindrical Boosters; Blumrich, J.

IN-P&VE-M-62-2, A Study of the Insulating Qualities of Four Structural Materials at the Temperature of Liquid Nitrogen; Burt, S. L. (U)

IN-P&VE-M-62-3, Low Temperature Mechanical Properties of X-2020-T6 and 2219-T6 Aluminum Sheet Alloys, May 8; Lovoy, C. V. (U)

IN-P&VE-M-62-4, Low Temperature Mechanical Properties of A-286 Alloy and Its Weldments, May 28, 1962; Morgan, W. R.

IN-P&VE-M-62-5, Low Temperature Mechanical Properties of Inconel X and Its Weldments, July 24; Lovoy, C. V.

IN-P&VE-M-62-6, Low Temperature Mechanical Properties of Rene' 41 Alloy and Its Weldments, July 24; Miller, P. C.

MTP-P&VE-M-62-6, Aging of Installed Rubber and Plastics Gaskets in Simulated Light Hardware, March 5; Stuckey, Burt & Thompson (U)

MTP-P&VE-M-62-7, A Study of the Outgasing and Evaporation Products of Some Materials Upon Exposure to Reduced Pressure, April 2; Looney & Caruso (U)

MTP-P&VE-P-62-4, Flexible Mechanical Elements and Bearings in Space, July 18., Eulitz, Dr. W. R., (U)

MTP-P&VE-F-62-9, Properties of Toroids with Circular Cross-Sections Used as Propellant Tanks; Burns, R. E.; Bray, S. Peter; (U)

TECHNICAL STUDY
PROPULSION

Some Considerations of Nuclear Rocket Propulsion for the Second Stage of SATURN; February 10, 1959; Jordan, W. H. Jr., ABMA S&M Lab (S)

Preliminary Static Test Performance Predictions for 165K SATURN Booster (revised); May 1, 1959, 14p., ABMA S&M Lab (C)

Operational System Analysis for the Rocketdyne Advanced Jupiter Model H-1 Engine System for the SATURN Program; May 6, 1959, 164p., Rocketdyne (C)

The Investigation of Various Possible Pressurization Systems for the SATURN Booster - Interim Report, June 22, 1959; Platt, Gordon K; Nein, Max E.; ABMA S&M Lab (C)

Analysis of the Flow Characteristics of the Fuel Interchange System of the SATURN Missile, DSD-TM-22-59, July 23, 1959 (C)

Comments on Engine-out Performance of Clustered Engine Booster Rocket Vehicles, DSP-TN-30-59, October 28, 1959.

H-1 and S-3D Engine Vibrations, DSF-TN-2-60, February 25, 1960.

Comparison of Vibrations on the H-1 Engine Suction Lines, Pump Flange, and Gear Case, DSF-TN-5-60, March 4, 1960.

Engine Area Ratio Optimization for SATURN C-2 Second Stage; June 3, 1960, 16p., Dobbins, Edward B. Jr., ABMA S&M Lab; DSP-TM-7-60 (C)

Reliability of the H-1 Engine and Clusters Before and After Three Seconds, M-REL-MTP-2-60, Dalton, Charles C., October 6, 1960.

SATURN Engine and Jet Expansion Flow Fields as Computed by the Method of Characteristics, Sims, J. L., November 28, 1960, MTP-AERO-60-9 (C)

INTERNAL NOTES

IN-M-S&M-P-61-2, An Empirical Method for Computation of Radiant Heat Flux from Rocket Exhaust Plumes, April 13, 1961; Stottle; (U)

IN-M-S&M-P-61-6, Exp. Investigation of LOX Relief Valve Malfunction, September 11, 1961; Jenkins, (U)

IN-M-S&M-P-61-7, Interim Report Liquid Hydrogen Familiarization Program, September 15, 1961; Walsh; (U)

IN-M-S&M-P-61-8, Immersed Turbine Exhaust Duct Studies; Glasgow; (U)

IN-M-S&M-P-61-9, A Concentric Shaft Turbopump as a Means of Improving Rocket Engine Pump and Turbine Performance; November 20, 1961; Gross and Beduerftig; (U)

IN-M-S&M-M-61-1, A Metallurgical Investigation of H-1 Rocket Engine Lox Dome Failures, June 7, 1961; Cataldo, C. E., (U)

IN-M-S&M-M-61-2, Nuclear Radiation Effects on Metals and Alloys; August 10, 1961; Dungan, E. E.; (S/RD)

IN-M-S&M-M-61-3, Considerations in LH_2 and Lox Explosion Hazards for SATURN C-1 Configuration, August 10, 1961; Gayle, J. B. and Tubbs, H. E.; (U)

IN-M-S&M-M-61-4, Investigation of Lox Filter Explosion, Riehl, W. A. and Nunnelley, J. R.; August 17, 1961.

IN-M-S&M-M-61-5, Considerations; September 20, 1961; Gayle, Perkins and Tubbs (U)

IN-M-S&M-E-61-2, Final Mass Characteristics of SATURN SA-1 Vehicle; June 30, 1961; Geiger, Martin (C)

IN-M-S&M-F-61-3, Summary of the Orion Nuclear Pulse Propelled Vehicle Studies, October 16, 1961; Sanford, E. W. (U)

MTP-M-S&M-P-61-9, Thrust Vector by Secondary Injection; April 11; McSheehy; (C)

MTP-M-S&M-P-61-14, Juno II AM-19E Flight Evaluation of Propellant Unit and Associated Systems, June 29, 1961; Hoodless and McDonald; (C)

MTP-M-S&M-P-61-17, A Feasibility Study of a Water-Injected Gas Generator, August 21, 1961; Braam; (U)

MTP-S&M-P-61-19, Subcooling of Cryogenic Liquid by Injection of non-Condensing Gas; October 17, 1961; Randolph and Vaniman; (U)

MTP-S&M-M-61-8, Studies of the Ignition Characteristics of Hot RP-1 Vapors, April 12, 1961; Gayle, J. B., (U)

MTP-S&M-M-61-14, Interim Report - Effectiveness of Various Agents for Suppressing Ignition of RP-1 and Hydrogen under Flow Conditions; July 7, 1961; Tubbs and Gayle; (U)

MTP-S&M-M-61-9, Ozone Flouride for Rocket Propulsion, Perkins, Harold, April 27 (U)

MTP-S&M-M-61-17, Investigation of Pinhole Leaks in SATURN Heat Exchanger Coils, October 2, 1961; Hess, J. H. (U)

MPR-C-P&VE-61-1, An Evaluation of the Centaur Gimbal in a Simulated Flight Environment, December 4, 1961; McKanne, Demorest; (U)

MTP-S&M-F-61-10, Nuclear Rocket After Cooling Requirements; March 18; Heyer, James W. (C)

MTP-P&VE-E-61-4, Hydrogen-A Bibliography of the Phenomena, Properties and Related Studies; November 16; Dowdy, W. L. (U)

MTP-S&M-S-61-5, Dynamic Investigations of Thrust Buildup and Cutoff for the SATURN Vehicle, June 12; Glaser, Dr. and Christian, D. C. (U)

IN-P&VE-P-62-1, Evaluation of the Propulsion System Performance of SA-2 During Static Testing; January 12; P&VE-PV (U)

IN-P&VE-P-62-2, Investigation Directive Toward Eliminating Leakage Problems on High Pressures Flared Tube Connections; January 18; Smith, T.H. (U)

IN-P&VE-P-62-6, Consideration of the Power Plant: F-1 Turbopump 8/H-1 Thrust Chamber; February 14; Escher, W. J. D. (U)

IN-P&VE-P-62-9, Quality Test Rkt. of SATURN Full Vent Valve; Marchl; Jenkins, W. H. (U)

IN-P&VE-P-62-10, Centaur Propulsion System Performance Equations; March 30; Krane; (U)

IN-P&VE-P-62-11, SATURN Solid Rocket Motor Destruct Analysis; April 19; Ratliff; (U)

IN-P&VE-P-62-15, Req. for Propellant Utilization (PU) or Taylor Tanking or Propellant on S-IC Stage SATURN C-5 Vehicle; June 1; Cobb; (U)

IN-P&VE-P-62-16, Formulation of RL-10 Engine Env. Ctr. Program; June 7; Perf. Sim. Unit (C)

IN-P&VE-E-62-12, Study of Helium Container Location Effect on Fuel Tank Pressurization System; May 5; Wattles, George and Maloney, John W. (U)

IN-P&VE-F-62-4, Dispersion of Payload Ratio Due to Change in Specific Impulse; July 2; Gary, S. Peter (U)

IN-P&VE-M-62-1, Critique on Available Nuclear Radiation Effects Data; January 6; Zoller, L. K. (U)

MTP-P&VE-M-62-3, Corrosion Summary of the H-1 Engine After the Sea Immersion Test Program; February 14; Higgins, R. H. (U)

MTP-P&VE-M-62-9, Computer Program for Reduction of Neutron Activation Foil Data; May 16; Zoller, L. K. (U)

MTP-P&VE-M-62-10, Critique on Available Nuclear Radiation Effects Data; June 14; Zoller, L. K. (U)

MTP-P&VE-P-62-1, Evaluation of Flight Test Propulsion System, Associated Systems, Design Vehicle SA-1; March 8; P&VE-PV (C)

MTP-P&VE-P-62-3, Evaluation of Flight Test of Prop. Sys. and Associated Systems, SATURN Vehicle SA-2

MTP-P&VE-P-62-5, A Simplified General Method for a Solution of the Characteristic Equations for Axially Symmetric Rocket Nozzles; July 24; Cole, L. E. (U)

MTP-P&VE-S-62-2, A Method for Preliminary Determination of Component Stiffness Requirements for Gimballed Engine Systems; April 5; Lifer, Charles E. (U)

MTP-P&VE-S-62-4, SATURN SA-1 Outboard Engine Curtain Assembly P/N 10418191 Simulated Environmental Pressure Tests; July 24; (U)

MTP-P&VE-F-62-2, Influence of Vehicle Parameters on the Propellants Required of Orbital Launch Vehicles; April 30; Fellenz, D. W. and Harris, R. J. (U)

MTP-P&VE-F-62-3, Weight Ratios and Scaling Equations for Multistage Liquid Rocket Vehicles, April 13; Arndt, Erwin A. (U)

TECHNICAL STUDY
RECOVERY

SATURN (Juno V) Water Recovery Feasibility Study; February 16, 1959; Hamilton, Fuller and Keys; ABMA Systems Support Equipment Lab (S)

SATURN Booster Recovery Study; December 21, 1959; Rocketdyne (C)

Design, Development, Testing and Delivery of a Large Booster Recovery System; June 17, 1960; Cook Research Lab (S)

DYNAMICS

Aerodynamic Data for SATURN (Juno V Missile); Donehoo, Larry K., February 10, 1959, DA-TN-12-59, ABMA AERO Lab (S)

SATURN Project: Typical Trajectories for Atlas and Titan Versions of Missiles #3 and #4; March 30, 1959; Schnieder, David H.; ABMA Aero Div. DA-TM-46-59 (S)

SATURN Missile #8: Flight Performance for Ignition Failure of One Engine of Atlas - Second Stage; Schnieder, David H.; April 7, 1959; ABMA AERO Lab; DA-TM-49-59 (S)

Estimated Aerodynamic Data for Two and Three Stage SATURN Missile (Atlas Prototype); Donehoo, Larry K.; May 21, 1959; ABMA Aero Lab DA-TN-48-59 (C)

Estimated Aerodynamic Data for Two and Three-Stage SATURN Missile (Titan Prototype Consideration); Donehoo, Larry K; May 21, 1959; ABMA Aero Lab DA-TM-49-59

SATURN Project-Life-Off-Motion of Missiles SA-3 and SA-4; McNair, Lewis L., June 12, 1959; ABMA Aero Lab (S)

Experimental Static Longitudinal Stability Results of a Proposed SATURN Configuration; June 1, 1959, 26p; Andrews, C. Dale and Auer, Ann C., ABMA Aero Lab DA-TN-59-59 (C)

Static Longitudinal Stability and Drag Characteristics of a Preliminary SATURN Booster Configuration at Angles of Attach up to 180^{o}; Andrews, C.D., July 10, 1969 DA-TN-73-59 (C)

Some Experimental Base Pressure Results on a Preliminary SATURN After-body Model Configuration Having Cold Supersonic Air Jets; Few, Albert G. Jr., November 5, 1959, 45p; ABMA Aero Lab DA-TM-142-59 (C)

Estimated Aerodynamic Data for SATURN Missile (2nd and 3rd & Payload Stage Diameters) Estimated Aerodynamic Data for SATURN Missile (160-inch 2nd, 3rd & Payload Stage Diameters; Donehoo, Larry K., December 14, 1959, 7p; ABMA Aero Lab DA-TN-107-59(C)

Effect of Upper Stage Length and Upper Stage Shroud Configuration on the Static Longitudinal Stability and Drag Characteristics of a Preliminary SATURN Configuration; Andrews, C. Dale and Auer, Ann C., January 13, 1960, 87p; ABMA Aero Lab DA-TM-8-60 (U)

Wind Tunnel Investigation of the Effects of Increased Upper Stage Diameter on the Static Longitudinal Stability and Drag Characteristics of a Preliminary SATURN Configuration; Andrews, C. Dale; February 5, 1960, 26p; ABMA Aero Lab DA-TM-13-60 (C)

Estimated Aerodynamic Data for SATURN Missile, B-1 (220-inch 2nd and 192-inch 3rd & Payload Stage Diameters; Donehoo, Larry K., March 8, 1960, 10p; ABMA Aero Lab (C)

SATURN Block I: Parametric Performance Survey for Single Stage SATURN Flight; Winch, John B; March 21, 1960, 22p; ABMA Aero Lab DA-TM-18-60; (C)

Estimated Aerodynamic Data for SATURN Missile SA-1 (220 and 120-inch Dummy Stage Diameters); Donehoo, Larry K., and McAnally, Robert C.; March 21, 1960;ABMA Aero Lab DA-TN-23-60 (C)

SATURN SA-1: Flight Mechanical Viewpoints for the Trajectory Outlay of SA-1; Winch, John B. and Jean, O . C.; March 24, 1960, 10p; ABMA Aero Lab DA-TM-21-60 (C)

SATURN SA-1: First Preliminary Standard Trajectory; Winch, John B., March 28, 1960, 15p; ABMA Aero Lab DA-TM-31-60 (C)

Estimated Aerodynamic Data for SATURN Missile, C-1 Prototype (220-Inch 2nd Stage, and 120-inch third and payload stage Diameters); McAnnally, Robert C. and Donehoo, Larry K., April 28, 1960, 10p; ABMA Aero Lab DA-TN-28-60 (C)

SATURN C-1 Optimum Trajectory Shaping and Optimum S-4 Propellant Sloshing; Jean, O. C.; August 31, 1960; MNM-M-AERO-6-60 (C)

SATURN Missile SA-7 Optimum Trajectory Shape for Circular Orbit Mission; Deaton, A. W. and Brandon, P., November 14, 1960; MTP-AERO-60-8 (C)

Estimated Aerodynamic Data for SATURN Missile (2nd, 3rd, & Payload Stage Diameter) Estimated Aerodynamic Data for SATURN Missile (220-inch 2nd, 3rd & Payload Stage Diameters); Donehoo, Larry K., December 11, 1959, 7p; ABMA Aero Lab DA-TN-105-59 (C)

Development of a Facility for an Investigation of the Base Flow of a Clustered Motor Configuration; Ownes, Robert W., March 21, 1960, 34p; ABMA Aero Lab (U)

IN-S&M-P-61-3, Exp. Heating Rate to Several Metallic Calorimeters Which were Exposed to the Supersonic Gases of Various Aero Heating Facilities; Harber (U)

IN-S&M-P-61-4, Calibration of a Total Heating Rod Calorimeter (Open End); August 2, 1961; Comer; (U)

IN-P&VE-P-62-3, Exp. Heating Rate to Several Metallic Calorimeters Which were Exposed to the Supersonic Gases of Various Aero Heating Facilities; January 22; Harber (U)

IN-P&VE-S-62-5, Aeroelastic Analysis of SATURN Aft Fins; April 13; Flee, Charles R. (U)

MTP-P&VE-P-61-21, Evaluation of SATURN SA-1 Base Heating; November 30, 1961; Connell, Harvey (C)

MTP-S&M-M-61-15, The Calculation of Solar Absorptivity Using Appropriate Zero Air Mass Solar Radiation Data; August 23, 1961; Zerlaut, G. A. (U)

MTP-61-32, Propellant Optimization and Performance Capability of the SATURN C-2; Hart; 4/11/61/ (C)

MTP-61-33, SATURN C-1 Vehicle Performance and Control Study of Several Two-Stage Configurations; Jean; 4/17/61 (C)

MTP-61-35, Experimental Aerodynamic Characteristics of a Proposed SATURN DynaSoar Configuration; Auer and Andrews; 4/10/61 (C)

MTP-61-37, Development of an Air Facility for the Investigation of Flow Conditions that Exist in the Base Region of the SATURN Booster during Launch; Vaughan, J.; 4/25/61 (U)

MTP-61-39, Control Stability Data Report for SATURN Vehicle SA-1; Larsen and Jean; 4/27/61 (C)

MTP-61-42, Revised Vibration Analysis of SATURN SA-1; Pack; 5/15/61 (C)

MTP-61-46, SATURN C-1 Block II: Performance and Trajectory on Orbital Missions for Thrust of 90K on S-IV Stage; Winch; 6/2/61; (C)

MTP-61-52, SATURN C-2 Preliminary Control Study; Sullivan; 6/14/61 (C)

MTP-61-71, Revised Range Safety Data for SATURN SA-1; Leonard; 8/31/61 (C)

MTP-61-72, SATURN C-1 Vehicle SA-1 Test Flight Trajectory Corridor to be Flown by SA-1; Hill; 8/31/61 (C)

MTP-61-84, Experimental Investigation of the Aerodynamic Characteristics of the SATURN DynaSoar Configuration; Fletcher; 10/27/61 (C)

MTP-61-85, Analysis of SATURN Horizon Sensor Arrangement; Rankin; 10/23/61 (C)

MTP-61-90, SATURN C-1 Vehicle SA-1 Test Flight Study of Lift-Off Motion; Teague and Hardage; 12/11/61 (C)

MTP-61-92, Atmospheric Environment for the Flight of SATURN SA-1; Smith, J., 12/18/61 (U)

MTP-61-94, SATURN C-4 Preliminary Lift-Off Motion Investigation; Schwaniger; 12/21/61 (C)

MTP-61-95, SATURN C-3: Control Investigation of Configurations with Different Diameters; Sullivan; 12/27/61 (C)

MTP-62-6, Stability Analysis of SATURN Block I with Emphasis on SA-1 and SA-2; Ryan; 1/23/62 (C)

MTP-62-8, Launch Azimuth Considerations for SATURN Block Vehicle; Payne and Kurtz; 1/26/62 (U)

MTP-62-11, SATURN SA-1 Post Flight Trajectory; Ledford; 2/5/62 (C)

MTP-62-13, SA-1 Flight Test Data Report; Martin and Weichel; 2/13/62 (C)

MTP-62-14, SATURN C-1 Block I Vehicle Test Flights: Error Analysis and Dispersion of the Trajectory Corridor; Lisle, B.; 2/15/62 (C)

MTP-62-15, Flight Evaluation of Axial Force and Base Pressure for SATURN SA-1; Garcia; 2/19/62 (U)

MTP-62-23, Method and Results of Adjusting Selected SA-1 Telemeter Data; Elliot; 3/8/62,(U)

MTP-62-25, Launch and Orbital Tracking for SATURN Block II Vehicles SA-5 and SA-6; McNair, A.; 3/13/62 (U)

MTP-62-29, Propellant Sloshing in SA-1; Bauer; 3/20/62 (C)

MTP-62-31, SATURN C-1 Block II: Re-entry Performance for Two and Three Stage Configurations; Cremin; 3/29/62 (C)

MTP-62-37, Error Analysis of Propulsion System Parameter Evaluation For SATURN SA-1; Fulmer; 4/20/62 (U)

MTP-62-39, SATURN C-5 Preliminary Study of Lift-Off Motion; Callaway; 4/30/62 (C)

MTP-62-42, Revised Multiple Beam Vibration Analysis of the SATURN SA-1 Vehicle; Kiefling; 5/16/62 (U)

MTP-62-43, Results of the SATURN SA-1 Model Base Heating Investigation at Mach Nos. from 0.6 to 1.5 and Altitudes from 10,000 to 83,000 Feet; Sisson; 5/17/62 (C)

MTP-62-46, SATURN SA-2 Post Flight Trajectory; Ledford; 5/25/62 (C)

MTP-62-48, SATURN C-1 Block I Vehicle Test Flights: Investigation of Rigid Body Dynamics; Cremin and Teague; 6/1/62 (C)

MTP-62-51, SATURN Block II: Preliminary Vehicle Stability Analysis and Booster Fin Flutter Analysis for Symmetric Degrees of Freedom; Wells, R., 6/26/62 (U)

MTP-62-57, Atmospheric Environment for Flight Test of SATURN SA-2; Smith, J., 7/10/62 (U)

MTP-62-58, SATURN SA-2 Flight Test Data Report; Weichel; 7/9/62 (C)

*IN-4-61, Aerodynamic Design Data for SATURN Missile SA-1 (Block I) from Wind Tunnel Results; Donehoo; 5/22/61 (C)

*IN-10-61, Revised Control Factors for SATURN Vehicle SA-1; Donehoo; 7/25/61 (C)

*IN-11-61, Some Preliminary Results of the SATURN Base Heating Program; Dahm and Wilson; 8/11/61 (U)

*IN-12-61, Results of Wind Tunnel Investigations of the Tank Loads on a 1.6 Percent Model of the SATURN SA-1 Configuration; Windham; 8/16/61 (C)

*IN-14-61, Vibration Analysis of the SATURN SA-1 Vehicle by Multiple Beam System; Kiefling and Beard; 8/25/61 (C)

*IN-2-62, Implementation of the Path-Guidance Mode for a Three-Stage SATURN Re-entry Test Flight Mission; Braud; 1/29/62 (U)

*IN-3-62, Control Stability Data Report for SATURN Vehicle SA-2; Project Staff; 6/19/62 (U)

*IN-4-62, SATURN C-3 Performance Study; Schwaniger; 3/17/62 (C)

*IN-6-62, Estimate of Base Heating of the First Stage SATURN C-4 Vehicle; Dahm; 3/23/62 (S)

*IN-7-62, Pressure Distribution Along a Model SATURN C-1, Block I Vehicle; Windham; 3/12/62 (U)

*IN-8-62, Static Longitudinal Stability and Drag Characteristics of Four Preliminary SATURN C-5 Configurations from Mach .7 to 4.96; Sieber and Romberg; 3/23/62 (C)

*IN-10-62, Range Safety Data for SATURN SA-5; Leonard; 2/16/62 (C)

*IN-18-62, Adaptive Guidance Study for the SATURN Vehicle First Stage with Engine-Out Capability; Deaton, A. W.; 5/4/62 (U)

*IN-21-62, Aeroballistics Contribution to the Marshall SA-D1 Report; Douglas; 5/28/62 (U)

* These reports are Internal Notes and are not available except upon specific request. All requests are subject to the approval of Director, Aeroballistics Division.

TECHNICAL STUDY
FLUID DYNAMICS

Force and Moment of a Liquid on a Rigidly Fixed Lid on the Free Fluid Surface Due to Translational and Rotational Oscillation of a Tank; Bauer, Helmut F., March 20, 1959; ABMA Aero Lab (C)

Preliminary Propellant Sloshing Analysis for Juno V (8, 9, 10); Clark, C. D., March 27, 1959; DA-TM-47-59

Oscillations in a Connected Fluid System; Bauer, Helmut F., April 9, 1959; ABMA Aero Lab (C)

Analysis of the Flow Characteristics of the Fuel Interchange System for the SATURN Missile; McKay, George H. and Black, Paul E.; July 23, 1959; ABMA S&M Lab (C)

Effect of Propellant Oscillation on SATURN Roll Moment of Inertia; Clark, Charles D., September 3, 1959, 9p; ABMA Aero Lab DA-TN-87-59 (C)

Theory of the Fluid Oscillations in a Circular Cylindrical Ring Tank Partially Filled with Liquid; Bauer, Helmut F.; MSFC-NASA TN D-557; December 1960.

IN-P&VE-P-62-7, Hydraulic System Description of the SATURN C-1 Rocket Engine (SA-2 Type), February 21; Bethea; (U)

IN-P&VE-P-62-12, Second Interim Report Liquid Hydraulic; Walsh; May 2; (U)

MTP-S&M-P-61-11, Comparative Experimental and Tehoretical Considerations on the Mechanism of Fluid Oscillations in Cylindrical Containers; May 29, 1961; Eulitz, Dr.; (U)

MTP-P&VE-P-61-22, Analysis and Control of Liquid Propellant Sloshing During Missile Flight; December 15; Eulitz; (U)

MTP-P&VE-P-61-23; Sloshing and Pressure-Decay in Pressurized Cryogenic Tanks of Launch Vehicles; December 18, 1961; Liu, Dr. C. K.; (U)

MTP-P&VE-M-62-2, Vacuum Lubrication, January 25; Demorest, K. E.; (U)

TECHNICAL STUDY
VIBRATIONS

Vibration Analysis of Juno V (3 and 4); Beasley, D. S., January 20, 1959; DA-TM-8-59 (C)

Vibration Analysis of Juno V, VIII, IX, S; Beasley, D. S., February 19, 1959; DA-TM-28-59 (C)

Vibration Analysis of SATURN 3, 4 (Atlas Second Stage); Beasley, D. S., April 9, 1959, 26p., ABMA Aero Lab DA-TM-51-59 (C)

Vibration Analysis of SATURN 8, 9, 10 (Atlas Version); Pack, Homer; May 1, 1959, 59p., ABMA Aero Lab DA-TM-56-59 (C)

Vibration Analysis of SATURN 1 and 2; Pack, Homer C., May 12, 1959; 37p., ABMA Aero Lab DA-TM-61-59 (C)

Torsional Vibration Analysis of SATURN 3, 4 (Atlas Second Stage); Pack, Homer; July 30, 1959; ABMA DA-TM-95-59 (C)

Vibration Analysis of SATURN Vehicle Block II; Beasley, D. S.; December 9, 1959, 69p., ABMA Aero Lab DA-TN-108-59 (C)

Vibration Analysis of SATURN Vehicle SA-1 (Dummy Second Stage); Beasley, D. S.; December 22, 1959, 10p., ABMA Aero Lab DA-TN-109-59 (C)

Estimate of the Sound and Vibration Fields During Static Firing of a SATURN Vehicle and Analysis of the Damage Problem; January 1, 1960; Bolt Beranek and Newman, Inc. (U)

Vibration Analysis of SATURN C-1 (Version C); February 5, 1960, 75p., ABMA Aero Lab DA-TN-3-60 (C)

H-1 and S-3D Engine Vibrations, DSF-TN-2-60; February 25, 1960.

Comparison of Vibrations on the H-1 Engine Suction Lines, Pump Flange and Gear Case, DSF-TN-5-60; March 4, 1960.

Preliminary Vibration Analysis of SATURN SA-1 (Case V); Bullock, Tulon; April 21, 1960, 19p., ABMA S&M Lab DSF-TM-2-60 (C)

Vibration Analysis of SA-1 (Case V) ; Beasley, D. S., May 4, 1960, 30p., ABMA Aero Lab DA-TM-34-60 (C)

IN-S&M-S-61-9, Dynamic Test of (X-306) Damping Material; April 20, 1961; Schock, R., (U)

IN-S&M-S-61-10, Correlation of the Vibration Environment of the ST-90 Guidance System for the SATURN (SA-1) & Jupiter Vehicles; May 31, 1961; Jewel, R.

IN-S&M-S-61-11, Special Case of a Helicoil Spring of Hollow Circular Cross Section; June 5, 1961; Deuel, G., (U)

IN-S&M-S-61-13, Predicted Bendings and Torsional Vibration of SATURN SA-D in Dynamic Test Tower; June 1, 1961; Bullock, T.

IN-P&VE-S-62-7, Vibration and Shock Specifications for Components on SATURN C-1, Block Vehicles; May 25; M-P&VE-SD (U)

IN-P&VE-S-62-11, Evaluation of the Vehicle Bending Mode Accl. From the SATURN SA-2 Flight Test; July 10; Bullock, T; Beam, E. E.; Wiener, W.R.

IN-P&VE-S-62-12, Launch Complex 39 Acoustic Environmental and General Noise Reduction Data; August 8

MTP-P&VE-S-62-1, Comparison of SATURN Vibration Data-Static and Flight; M-P&VE-SD (C)

MTP-P&VE-S-62-3, Experimental Vibration Program on a Full Scale SATURN Space Vehicle; April 26; Slayden, Kay and Watson, Charles E. (U)

NASA TN-D-1114, Determining Inertia by Using the Amplitude Decay Rate of a Mechanical Oscillating System; Meredity, Dan and Carpenter, Gene (U)

TECHNICAL STUDY
GUIDANCE AND CONTROL

Juno V Missile (SATURN): Preliminary First Stage Control Analysis for Missiles SA-3 and SA-4; McNair, Lewis L. and Lisle, Bon J; March 10, 1959; ABMA Aero Lab DA-TH-32-59 (S)

Actuator Torque Requirements of the Swiveled SATURN Engine; Smith, J. D., and Kennel, Hans; April 24, 1959; ABMA G&C Lab (C)

SATURN Project: Missiles SA-3 and SA-4 with Atlas Second Stage: Control Analysis of First Stage Flight; McNair, Lewis L., May 26, 1959; ABMA Aero Lab DA-TM-66-59 (S)

Control Feed-Back Flutter Analysis SATURN 3, 4 (Atlas Second Stage) Using Edcliff Angle-of-Attack Meter for Alpha Control; Ryan, Robert S., May 26, 1959; ABMA Aero Lab DA-TM-65-59 (C)

Control Flutter Stability Analysis, SATURN 3, 4 (120" Diameter Second Stage) for First Stage Flight Using Accelerometers as Alpha Control; Ryan, Robert and Rees, Jim; August 31, 1959, ABMA Aero Lab DA-TM-110-59 (C)

SATURN Control Feedback Stability Analysis Using Accelerometers for Alpha Control (Including Loading Due to Sloshing Propellant); Ryan, Robert and Rees, Jim; October 9, 1959; ABMA Aero Lab DA-TM-129-59 (C)

Preliminary Investigation of Roll Control with the Multi-Engine Booster of the SATURN Vehicle; Golley, Paul T., October 9, 1959, ABMA G&C Lab (S)

SATURN Control Study for Various Upper Stage Diameters; Jean, O. C. and Sullivan, E. L.; December 18, 1959; ABMA Aero Lab DA-TM-157-59 (S)

SATURN Control Feedback Stability Analysis Using an Edcliff Angle-of-Attach Meter for Alpha Control; Ryan, Robert S. and Rees, Jim W., January 26, 1960; ABMA Aero Div. DA-TN-10-60

SATURN C-1 Control Study for Four Control Motors Operative; Sullivan, E.L., and Jean, O. C.; April 14, 1960; ABMA Aero Lab DA-TM-30-60 (S)

SATURN Missile Control Factors: Sign Convention, Symbols and Equations; Donehoo, Larry K., April 18, 1960; ABMA Aero Lab DA-TN-27-60 (U)

SATURN Linear Hydraulic Actuator Summary Report; Warren, R. L., April 29, 1960; Chance Vought Aircraft (U)

SATURN Vehicle: Comparative Study of Performance and Controllability of Two-Stage and Three-Stage Versions for Low Altitude and Orbits; Hoelker, R. F., May 25, 1960; ABMA Aero Lab DA-TM-44-66 (C)

SATURN C-1 Control Study for Three Control Motors Operative and Possible Improvement Measure; Sullivan, E. L. and Jean, O. C.; June 8, 1960; ABMA Aero Lab (C)

Some Comments on the Gravitational Feedback Instability; Neighbors, A. K.; June 17, 1960; ABMA G&C Lab (U)

Theory of Artificial Stabilization of Missiles and Space Vehicles with Exposition of Four Control Principles; Hoelker, R. F.; November 7, 1960; MTP-AERO-60-7 (U)

Control Flutter Stability Analysis SATURN SA-1 (Dummy Upper Stages); Ryan, R. S., November 1960; NASA-TM-X-400 (C)

Proposal for Ballistic Missile Controls Utilizing Multi-Chamber Propulsion System, ABMA G&C Lab (U)

A High Capacity PAM-FM-FM Telemetering System for the SATURN Booster; King, Olin B., December 1, 1959; ABMA G&C Lab (U)

A Study of Space Guidance Requirements; May 1, 1959; Jet Propulsion Lab (C)

Evolution of the SATURN Booster Telemetry System; Rorex, James; March 21, 1960; ABMA G&C Lab (U)

MTP-P&VE-M-62-11, The Calibration of Diatron - 20 Residual Gas Analyzer for Use in High Vacuum System; July 9; Caruso, S. V. (U)

MTP-G&C-61-18 Comparison of SATURN Rigid Body Control Scheme Proposed by Cornell Aeronautical Lab; 4/17/61; Blanton, J. E. and Jones, C. A. (U)

MTP-G&C-61-19 Bending Frequency Changes Due to Gravity; 4/28/61; Landwehr, George (U)

MTP-G&C-61-21 Summary Report & Comments on the SATURN Guidance System Development Plan; 5/4/61; Dr. Haeussermann (C)

MTP-G&C-61-23 Alignment & Checkout Procedure for UDOP Transponder AN-DRN-11; 5/8/61; Roberts, Ray C. (U)

MTP-G&C-61-25 Descriptions & Capabilities of the Environmental Studies Unit Ground Station; 5/19/61; Beltran, A. (U)

MTP-G&C-61-26 Scheme for Laboratory Simulation for Orbital Rendezvous Maneuver; 5/23/61; Boehm, Joseph (U)

MTP-G&C-61-27 The Δs Method - A Simplified Method for Stability Studies of Certain Linear Systems; 8/29/61; Gunderson & Hosenthien

MTP-G&C-61-34 Preliminary Investigation of Roll Programming for SA-4 SATURN Vehicle After Lift-Off; 8/8/61; Fisher, R. H. Jr. (U)

MTP-G&C-61-35 Performance Evaluation of SA-1 Fire Detection Thermocouple; Burke, Harlan; 8/18/61

MTP-G&C-N-61-36 Improvement of Computer System for Reliability Through Redundancy; 8/30/61; White, J. B. (U)

MTP-G&C-E-61-37 SATURN SA-1 Vehicle Electrical Integration; 9/13/61; Bennett, H. K., (U)

MTP-G&C-G-61-30 Gimbal Geometry and Attitude Sensing of the ST-124 Stabilized Platform; 9/27/61; Moore, R. L. and Thomason, H. (U)

MTP-G&C-I-61-39 SS-FM: A New Telemetry Technique; 10/16/61; Frost, W.O. (U)

MTP-ASTR-F-61-42 Support of Heavy Space Vehicles Such as SATURN C-1 and C-4 for Dynamic Tests; 12/6/61; Landwehr, G. (U)

MTP-ASTR-N-41-61 The Effect of Sensing and Restoring Plane Misalignment on Control System Stability; 12/1/61; Schultz, David N. (U)

MTP-ASTR-F-61-43 Hydraulic Support System for Dynamic Testing - Initial Tests on the Prototype; 12/6/61; Borelli, M. T. (U)

MTP-ASTR-F-62-1 Stability Region Based on Frequency Response Data; 1/8/62; George, John H. (U)

MTP-ASTR-A-62-3 Minimization of the Angle Between Target and Chaser Orbital Planes with Reference to Chaser Launch Time Variations; 1/30/62; Harden, J. W. (U)

MTP-ASTR-R-62-4 Mean Distribution of Stellar Light Intensity According to Apparent Magnitude and Galactic Latitude; i/31/62; (U)

MTP-ASTR-I-62-5 Telemetry System for SATURN S-I Stage Development; 2/14/62; Rorex, J. E. (U)

MTP-ASTR-A-62-6 A High Velocity Reentry Guidance Study; 4/2/62; Williamson, Ken (U)

MTP-ASTR-A-62-7 An Analysis of a Rendezvous Guidance Scheme; 5/17/62; Harden, Jack (U)

MTP-ASTR-G-62-8 Considerations on Extended Operating Periods for the ST-124 Stabilized Platform; 5/17/62; Thomason, H. (U)

MTP-ASTR-G-62-9 Summary Report on Evaluation of Razdow Microdynamic Rate Monitoring System; 6/13/62; McDonald, P. (U)

MTP-ASTR-I-62-10 Space Vehicle SA-1, Telemetry System; 7/11/62; Bowling, A. L. Jr. and Threlkeld, W. B. Jr. (U)

MTP-ASTR-N-62-11 Attitude Control of Space Vehicles Using Minimum Switching Jet Logic; 7/16/62; Schultz, David N. and Sweitzer, David L. (U)

M-G&C-IN-61-2 SATURN Guidance System; 5/26/61; Weber, F. (U)

M-G&C-IN-61-6 Vibration Qualification Testing of J-Box Assembly 10A29; Stulting, J. B.; 7/19/61; (U)

M-G&C-IN-61-7 Vibration Qualification Tests and Operational Test of J-Box Assembly 11A20 Part #10421039; 7/19/61; Stulting, J. B. (U)

M-G&C-IN-61-8 SATURN Guidance System Status Report; 8/10/61; Weber, F. (U)

M-G&C-IN-61-9 Static Inverter; 7/31/61; Anderson, D., Willis, A. and Winkler, C. (U)

M-G&C-IN-61-10 Procedure for Fabricating Plastic Molds; 8/8/61; Hardage, J. (U)

M-G&C-IN-61-12 Vibration Qualification Testing of the Heater Power Distributor Assembly 9A2 Part #104200010; 8/11/61; Stulting, J. B. (U)

M-G&C-IN-61-14 Vibration Qualification Testing of Measuring Distributor Assembly 13A1 Part #10420003; 8/30/61; Stulting, J. B. (U)

M-G&C-IN-61-15 Vibration Qualification Testing of the Control Distributor Assembly 15A1 Part #10420001; 9/12/61; Stulting, J. B. (U)

M-G&C-IN-61-16 Procedures for Molding Cable Assemblies Using Polyurethane; 9/22/61; Hardage, J., Knott, D. and Fussel, C. J. (U)

M-G&C-IN-61-17 Variable Amplitude and Frequency Pulse Generator; 9/25/61; Baker, D. (U)

M-G&C-IN-61-18 Measurements & Instrumentation Discrepancy Analysis Vehicle SA-1; 10/3/61; Perry; (U)

M-G&C-IN-61-19 A Brief History of Inertial Guidance; 10/9/61; DIR Office; (U)

M-G&C-IN-61-20 Fire Detection Thermocouple Environmental Tests Super-cooled Conditions; 10/12/61; Burke, H. (U)

M-G&C-IN-61-21 Vibration and Thermal Shock Qualification Testing of Switch Assembly 14A7, Part #B50M01135; 10/25/61; Stulting (U)

M-G&C-IN-61-22 Survey on Test Facilities for Simulation of Space Environment; 11/2/61; McLain, J. (U)

M-G&C-IN-61-23 Vibration Qualification Testing of the Battery Shunt Box Assembly 14A8 Part #50M00751; 11/3/61; Stulting, J. B. (U)

M-G&C-IN-61-24 SATURN Guidance System Report No. III; 11/4/61; Weber, F. (U)

M-G&C-IN-61-25 Vibration Testing of the MOOG Model 22-157 Servo; 11/24/61; Howard, W. and Martin, C. W. (U)

M-ASTR-IN-61-28 Electrical Ground Support Equipment; 12/29/61; Gardner, D. (U)

M-ASTR-IN-62-2 Study of Engine Position Control Systems; 1/19/62; Weaver, C. H. (U)

M-ASTR-IN-62-3 Moisture Resistance Tests of Bendix PYGMY PT-SE (Crimped) Connectors; 2/27/62; Stulting, J. B. (U)

M-ASTR-IN-62-4 Degree of Stability Regions for Polynomials and Stability Regions for Exponential Polynomials; 3/6/62; George, J. (U)

M-ASTR-IN-62-5 Vibration Testing of the E.B.W. Controller Assembly 50M01076; Stulting, J. B; 3/13/62 (U)

M-ASTR-IN-62-6 Sulinac Alignment Method and Procedure; 3/23/62; Macuch, M. M. (U)

M-ASTR-IN-62-7 Examination of S-1 Probability of Success (Engine-Out); 5/17/62; Broussard, P. (U)

M-ASTR-IN-62-8 Vibration Testing of the Cadillac Gage Model FC11-680A Servo Valve; Martin, C. W., 4/13/62 (U)

M-ASTR-IN-62-11 Moisture Resistance Tests of Bendix PYGMY PT-P (Potted) Connectors; 5/17/62; Stulting, J. B. (U)

M-ASTR-IN-62-12 General Description of the Guidance Signal Processor; 6/15/62; White, J. B. (U)

M-ASTR-IN-62-13 Clearance and Heat Tests of PRC Type TX093, TX154 and TX158 Resistors; 6/22/62; Stulting, J. (U)

M-ASTR-IN-62-14 Status of Flight Leak Measuring Transducers; 7/5/62; Paludan (U)

M-ASTR-IN-62-15 Vibration Testing of Propulsion Distributor Assembly 9A1 and Measuring Distributor Assembly 9A3 for SATURN Block I Vehicles; 7/10/62; Stulting, J. B. (U)

M-ASTR-IN-62-16 High Power DC/DC and DC/AC Techniques; 7/13/62; Berryman, G and White, W. (U)

TECHNICAL STUDY
LAUNCHING

Bending Moment Imposed on the SATURN Missile Due to Wind Velocities While Installed on the Launcher; Stevens, John T., June 11, 1959, 7p., ABMA S&M Lab (S)

SATURN Noise Measurement Program; August 19, 1959, 14p., Bolt Beranek and Kewman, Inc. (U)

Calculated Noise Levels of SATURN and SATURN Scale Model Engines; August 31, 1959; Farrow, J. H.; ABMA S&M Lab DSF-TM-13-59 (C)

Status of Flight Instrumentation Planning as of August 27, 1959; Collins, D. D., Gwinn, R. T.; September 1959; ABMA Missile Firing Lab (S)

SATURN Base Plate Thermal Radiative Calculation Procedures; December 28, 1959; DSD-TM-29-59 (C)

Backup Considerations and Proposals SATURN Launch Facilities Cape Canaveral Missile Test Annex AFMTC SATURN Service Structure No. 11 Design Committee; Pierce, Harvey F., Undated 24p.; Connel (Maurice H.) & Associates (U)

Sealing and Pressure Withstanding Characteristics of Four-Inch and Six-Inch Heavy Duty LOX Quick-Disconnect Couplings; January 5, 1960, 28p., Comeron, Roy L., ABMA Systems Support Equipment Lab (U)

Preliminary Estimations of Acoustic Conditions at the SATURN Launch Complex During the Initial Part of a Flight of the SATURN Booster; January 20, 1960, 17p., Dorland, W. D.; ABMA Test Lab (U)

A Committee Study of Blast Potentials at the SATURN Launch Site and a Contractor Study of Blast Forces on Structures; February 1960, 51p., Hall, C. J., ABMA Missile Firing Lab DSC-TN-8-60. (C)

A Preliminary Study of Lift-Off Motion of the SATURN SA-1 Missile Including Structural Bending Effects; April 25, 1960, 29p., Showers, Nathan and Moreland, Wayne; ABMA S&M Lab (C)

Design, Installation and Load Test of Missile Hold-Down Hardware for the SATURN Modification to the Static Test Tower; May 6, 1960, 33p., Hoover, Alvie L., ABMA Test Lab (U)

SATURN Destruction Tests, DSD-TN-15-60; May 6, 1960.

Preliminary Instrumentation Plan for SATURN Block I; June 8, 1960, 18p., Gwinn, Ralph T., Colling, D. D., ABMA Missile Firing Lab (C)

SATURN Service Structure No. II Design Committee Summary Report and Recommendations; July 12, 1960, 35p., Pierce, Harvey F.; Connell (Maurice H.) & Associates, Inc. (U)

V.L.F. 34 Complex, Firing Accessories, Leak and Functional Checkout Equipment, and Servicing Equipment for SATURN SA-1 - -3, LOD; November 22, 1960; MTP-M-LOD-DA-5-60 (U)

IN-P&VE-E-62-3 Launching Information for SATURN SA-2; February 16; Functional Systems Integration Section; (U)

IN-P&VE-E-62-14 Launching Information for SATURN SA-3; June 26; M-P&VE-EF-(U)

TECHNICAL STUDY
RELIABILITY AND QUALITY CONTROL

Reliability Program Specifications, DRR-TM-5-60; January 14, 1960

SATURN Quality Engineering Plan; DRR-TM-14-60; March 18, 1960

Propagation of Confidence Levels; DRR-TM-12-60; May 11, 1960

Reliability of the H-1 Engine and Clusters Before and After Three Seconds; M-REL-MTP-2-60; October 6, 1960; Dalton, Charles C.

IN-P&VE-E-61-14 A Generalized Approach for Systems Analysis and Selection of Components for Ramscot (with Special Emphasis on Reliability); November 6, 1961; Functional Systems Integration Section (U)

MTP-P&VE-M-62-5 Studies on the Reliability of Particulate Contamination Analysis; March 5; Gayle, J. B. and Romine, J. O. (U)

MTP-P&VE-F-62-6 Prediction of Liquid Propellant Vehicle Reliability; April 16; Hurst, Croft, and Voss (S)

IN-M-QUAL-61-18 Recommendations Concerning Alignment of the Pratt & Whitney Aircraft RL-119 Rocket Engine; May 25, 1961; Hendricks, E. S. (U)

IN-M-QUAL-61-1 Qualification & Evaluation Test of the Sub-Assembly of Short Cable Mast - Ground Support Equipment; July 12, 1961; Brisbois, W. I. (U)

IN-M-QUAL-61-6, Quality Engineering Survey of Astronautics Division, General Dynamics Corporation, San Diego, California; May 1961 (U)

IN-M-QUAL-61-7 Final Acceptance Test Report SATURN SA-1; September 18, 1961 (U)

IN-M-QUAL-61-7.1 Final Alignment Report SA-1; August 16, 1961; Walker, Jack (U)

IN-M-QUAL-61-7.2 Electrical Systems Analysis SA-1; August 16, 1961 (U)

IN-M-QUAL-61-7.3 Performance Analysis, SA-1; August 9, 1961; Sinderson, R. L. (U)

IN-M-QUAL-61-7.4 Radio Frequency Systems Test Report SA-1; August 4, 1961; Norton, C. M. (U)

IN-M-QUAL-61-7.5 Guidance and Control Systems Checkout SA-1; August 7, 1961 (U)

IN-M-QUAL-61-7.6 Instrumentation Analysis SA-1; August 11, 1961; Gibson, J. H. and Reimer, R. L. (U)

IN-M-QUAL-61-7.7 Final Mechanical Assembly Analysis SA-1; August 15, 1961 (U)

IN-M-QUAL-61-7.8 Final Pressure & Functional Analysis SA-1; August 2, 1961; Baker, R. (U)

IN-M-QUAL-61-17 Pre-Static Mechanical Assembly Analysis of S-I-2; September 18, 1961 (U)

IN-M-QUAL-62-9 Final Acceptance Test Report SATURN S-I-2; March 9, 1962 (U)

IN-M-QUAL-62-9.1 Final Alignment Report S-I-2; Walker, Jack; February 15, 1962 (U)

IN-M-QUAL-62-9.2 Electrical Systems Analysis S-I-2; February 19, 1962 (U)

IN-M-QUAL-62-9.3 Performance Analysis S-I-2; February 19, 1962 (U)

IN-M-QUAL-62-9.4 Radio Frequency Systems Test Report S-I-2; February 3, 1962; Slayden, M. D. and Toler, James C. (U)

IN-M-QUAL-62-9.5 Guidance and Control Systems Checkout S-I-2; February 14, 1962 (U)

IN-M-QUAL-62-9.6 Instrumentation Analysis S-I-2; Covington, C. H.; February 19, 1962 (U)

IN-M-QUAL-62-9.7 Final Mechanical Assembly Analysis S-I-2; February 16, 1962 (U)

IN-M-QUAL-62-9.8 Final Pressure and Functional Analysis S-I-2; Lovell, Charles W., February 13, 1962 (U)

IN-M-QUAL-62-15.7 Pre-Static Mechanical Assembly Analysis S-I-3; March 16, 1962 (U)

IN-M-QUAL-62-15.9 Pre-Static Mechanical Pressure and Functional Analysis; S-I-3; Lovell, Charles W., March 14, 1962 (U)

IN-M-QUAL-62-15.10 Determination of Weight, Center of Gravity and Mass Moment of Inertia S-I-3; Saratore, A. C.; March 9, 1962 (U)

IN-M-QUAL-62-17-1 Rotational Clearance and Deflection Test S-I-4; July 20, 1962 (U)

IN-M-QUAL-62-17-2 Determination of Mass Characteristics (Pre-Static) S-I-4; Saratore, A. C.; July 10, 1962 (U)

IN-M-QUAL-62-11 Vibration Test of the Edcliff Angle of Attack Transducer; Reavis, James; February 12, 1962 (U)

IN-M-QUAL-61-26; Evaluation Test of the Ball-Loc Separator, Ground Support Equipment; Seale, E. D.; October 24, 1961 (U)

IN-M-QUAL-62-12 Evaluation Test of the Quick Connector of Ground Support Equipment; Seale, E. D.; February 21, 1962 (U)

IN-M-QUAL-62-43 Evaluation Test of the Continental Connectors; Seale, E. D.; May 25, 1962 (U)

IN-M-QUAL-62-2 Evaluation Test of the Lift-Off Switch of Ground Support Equipment; January 9, 1962; Seale, E. D. (U)

IN-M-QUAL-62-38 Qualification Test of the Filters J-26A5C6A-1 Relays; May 7, 1962; Reavis, James (U)

IN-M-QUAL-62-31 Qualification Test of the North Electric Relay; April 13, 1962; Reavis, James (U)

IN-M-QUAL-62-16 Qualification Test of the Union Switch and Signal Relay No. UC328345; March 1, 1962; Day, Wiley S. Jr. (U)

IN-M-QUAL-62-48 Qualification Test of the Sigma 22KNCC-1000G-SIL Relays; June 1, 1962; Reavis, James (U)

IN-M-QUAL-62-53 Qualification Test of the Potter and Brumfield SC-7081 Relays; June 12, 1962; Hine, H. S. (U)

TECHNICAL STUDY
INSTRUMENTATION AND TELEMETRY

A High Capacity PAM-FM-FM Telemetering System for the SATURN Booster; Kine, Olin B., December 1, 1959; ABMA G&C Lab (C)

Evolution of the SATURN Booster Telemetry System; Rorex, James; March 21, 1960; ABMA G&C Lab (U)

Preliminary Instrumentation Plan DMTR-TR-29-60; June 8, 1960; ABMA (C)

IN-S&M-P-61-5 SATURN Preflight Instrument Compartment Cooling System - SA-1 and SA-2; July 14, 1961; Moss (U)

IN-P&VE-P-62-14 Development Test of SATURN Preflight Instrument Compartment Cooling System SA-3 and SA-4; May 23; Vaughan (U)

IN-P&VE-P-62-8 Preliminary Tests of Texas Instruments (Klixon) Subminiature Switches Model AT 2-1 and AT 3-1; February 26; Lanier, J. R. (U)

IN-P&VE-E-62-6, SATURN S-I Stage Measuring & Functional Sensors Failure; P&VE-EF- (U)

MTP-S&M-P-61-18 SA-1 SATURN Instrumentation and Guidance Canister Pressure System Evaluation; October 2, 1961; Hoodless; (U)

NASA TN-D-1275 The Suitability of Delta p Sensors for Monitoring Liquid Propellant Sloshing During Rocket Flight; July 1962; Eulitz, Dr. W. R. (U)

TECHNICAL STUDY
FABRICATION DOCUMENTATION

E.P. No. 1 SATURN Alignment and Drilling Procedure, Instrument Container Number 15 (EFF. SA-1-3) (U)

E.P. No. 2 SATURN Manufacture and Installation Procedure, 1.5 Inch Diameter Inboard and Outboard GOX Lines (EFF. SAT-SA-1-3) (U)

E.P. No. 3 SATURN Fabrication and Installation Procedure Criteria Tail Fin (EFF. SA-7 and subs) (U)

E.P. No. 4 SATURN Structural Fabrication Procedure, Top Adapter, (EFF. SA-1-3 and D)

E.P. No. 6 SATURN Installation Procedure,Outboard and Inboard Engine (Overhead Crane)(EFF. SA-1-3) (U)

E.P. No. 7 SATURN Removal Procedure, Outboard and Inboard H-1 Engine (Air Logistic;s Trailer Pres-Ray Beam) (EFF. SA-1-3) (U)

E.P. No. 8 SATURN Installation Procedure, Outboard and Inboard H-1 Engine (Air Logistic's Trailer Pres-Ray Beam)(EFF. SA-1-3) (U)

E.P. No. 9 SATURN Installation Procedure, Instrument Container #15 Components (EFF. SA-1-3) (U)

E.P. No. 11 SATURN Assembly Procedure, 70-Inch Diameter LOX Tank (Prior to Clustering) (EFF. SA-1-3 and D) (U)

E.P. No. 12 SATURN Assembly Procedure, 70-Inch Diameter Fuel Tank (EFF. SA-1-3 and D) (U)

E.P. No. 13 SATURN Assembly Procedure, 105" Diameter LOX Tank (EFF. SA-1-3 and D) (U)

E.P. No. 14 SATURN Assembly Procedure, Second-Stage Adapter (Prior to Clustering) (EFF. SA-1-3 and D) (U)

E.P. No. 15 SATURN Prefitting Procedure, Tail Shrouds, Heat Shield, and Flame Shield (EFF. SA-1-3 and D) (U)

E.P. No. 16 SATURN Mating and Alignment Procedure, S-IV and S-V Dummy States and Dummy Payload (EFF. SA-1-3) (U)

E.P. No. 17 SATURN Installation Procedure, Interstage Fairing (EFF. SA-1-3) (U)

NOTE: E.P. numbers not appearing in proper sequence have been cancelled.

TECHNICAL STUDIES
FABRICATION DOCUMENTATION

E.P. No. 18 SATURN Installation Procedure, Instrument Container #16 Components (EFF. SA1-3) (U)

E.P. No. 19 SATURN Structural Fabrication Procedure, Inboard and Outboard Outriggers (EFF. SA-4 and subs) (U)

E.P. No. 20 SATURN Structural Fabrication Procedure, Thrust Barrel (EFF. SA-4 and subs) (U)

E.P. No. 23 SATURN Installation Procedure, S-IV Dummy Stage Components (EFF. SA1-3 and D) (U)

E.P. No. 25 SATURN Fabrication, Assembly, and Installation Procedure, Firewall (Tail Section) (EFF. SA-2, 3, and D) (U)

E.P. No. 26 SATURN Installation Procedure, Instrument Container #13 Components (EFF. SA1-3) (U)

E.P. No. 27 SATURN Installation Procedure, Instrument Container #14 Components (EFF. SA1-3) (U)

E.P. No. 28 SATURN Alinement and Drilling Procedure, Instrument Container #13, #14, and #16 (EFF. SA1-3) (U)

E.P. No. 29 SATURN Manufacture and Installation Procedure, Upper 8 Inch Diameter Inboard and Outboard LOX and Fuel Suction Lines (EFF. SA1-3) (U)

E.P. No. 30 SATURN Installation and Alinement Procedure, Instrument Container #13, #14, #15, and #16 (EFF. SA1-3) (U)

E.P. No. 31 SATURN Assembly Procedure, Tail Unit (Prior to Clustering) (EFF. SA-2, 3, & D) (U)

E.P. No. 32 SATURN Assembly Procedure, LOX Container Unit Center (EFF. SA-2, 3, & D) (U)

E.P. No. 33 SATURN Installation Procedure, Clustering 70 Inch Diameter LOX and Fuel Tanks (EFF. SA-2, 3, & D) (U)

E.P. No. 34 SATURN Assembly Alignment Check Procedure, Engine to Power Unit (EFF. SA1-3) (U)

E.P. No. 37 SATURN Installation Procedure, Measuring Components, Power Unit Assembly (EFF. SA-1) (U)

NOTE: E.P. numbers not appearing in proper sequence have been canceled.

E.P. No. 38 SATURN Assembly and Installation Procedure, Forward Ring, GMT-12004-8-0, (To Spider Beam Assembly) (EFF. SA-1) (U)

E.P. No. 39 SATURN Installation Procedure, Lower Inboard and Outboard Suction Lines (EFF. SA1-3) (U)

E.P. No. 40 SATURN Installation Procedure, Inboard Engine Turbine Exhaust System (EFF. SA-1) (U)

E.P. No. 41 SATURN Installation Procedure, Cooling Ducts to Instrument Containers (EFF. SA1-3) (U)

E.P. No. 42 SATURN Alinement Check Procedure, 8 Inch Diameter Lower Suction Lines and 1.5 Inch Diameter LOX Lines Outboard Gimbal Joints (Optical) (EFF. SA1-3) (U)

E.P. No. 46 SATURN Structural Modification Procedure, Aft Section (Jupiter to Saturn) (EFF. SA1-3 & D) (U)

E.P. No. 47 SATURN Structural Modification Procedure, Nose Cone (Jupiter to Saturn) (EFF. SA1-3 &D) (U)

E.P. No. 48 SATURN Structural Fabrication Procedure, Adapter (Top) (EFF. SA-4 and subs) (U)

E.P. No. 49 SATURN Structural Fabrication Procedure, Top Instrument Compartment (EFF. SA-4) (U)

E.P. No. 50 SATURN Weighing and Center of Gravity Determining Procedure, Booster Assembly (EFF. SA1-3) (U)

E.P. No. 51 SATURN Optical Control and Alinement Check Procedure, LOX Container Unit Center Assembly (EFF. SA1-3 &D) (U)

E.P. No. 52 SATURN Installation Procedure, Transfer Fin Lines to 70 Inch Diameter Containers and Install Erection Target (EFF. SA1-3) (U)

E.P. No. 53 SATURN Mating and Alinement Procedure, Payload Body Assembly (EFF. SA1-3) (U)

E.P. No. 55 SATURN Alinement Procedure, Local Angle Attack Meters on Aft Unit (EFF. SA1-3) (U)

NOTE: E.P. numbers not appearing in proper sequence have been canceled.

TECHNICAL STUDIES
FABRICATION DOCUMENTATION

E.P. No. 56 SATURN Alinement Procedure, ST-90 Tilt Frame to Vehicle Centerline (EFF. SA1-3) (U)

E.P. No. 57 SATURN Alinement Procedure, Accelerometers and Rate Gyros to Vehicle Centerline (EFF. SA1-3) (U)

E.P. No. 58 SATURN Alinement Procedure, Operation of Resolver Controlled Roll Indicator (EFF. SA1-3 and D) (U)

E.P No. 59 SATURN Electrical Assembly Procedure, Measuring Distributor 9A3 (EFF. SA1-3) (U)

E.P. No. 60 SATURN Termination Procedure, Semi-Rigid Coaxial Cable (EFF. SA-1 and D) (U)

E.P. No. 61 SATURN Assembly Procedure, Armored Cable (EFF SA1-3) (U)

E.P. No. 62 SATURN Assembly and Installation Procedure, Cable Transposer (EFF. SA1-3) (U)

E.P. No. 63 SATURN Manufacturing Fabrication Procedure, Heat Exchanger Manufacture (EFF. SA4-7) (U)

E.P. No. 64 SATURN Modification Procedure, H-1 Engine (Inboard) (EFF. SA1-3) (U)

E.P. No. 65 SATURN Modification Procedure, H-1 Engine (Outboard) (EFF. SA1-3) (U)

E.P. No. 66 SATURN Handling Procedure, H-1 Engine and Engine Handling Equipment (EFF. SA1-3) (U)

E.P. No. 67 SATURN Fabrication Procedure, Heater Power Distributor Mechanical Assembly 10420292 (EFF. SA1-3) (U)

E.P. No. 68 SATURN Installation Procedure, S-V Dummy Stage Components Installation (EFF. SA1-3 and D) (U)

E.P. No. 69 SATURN Installation Procedure, Installation Dummy Payload Components (EFF. SA1-3) (U)

E.P. No. 70 SATURN Installation Procedure, Inboard Engine Drain Lines (EFF SA1-3) (U)

E.P. No. 71 SATURN Installation Procedure, Fuel Vent Line Adapter Plate Assembly (EFF. SA2-3) (U)

NOTE: E.P. numbers not appearing in proper sequence have been canceled.

E.P. No. 73 SATURN Installation Procedure, LOX Interconnect and LOX Fill and Drain Lines (EFF. SA1-3) (U)

E.P.No. 74 SATURN Installation Procedure, Fuel Fill and Fuel Interconnect Lines (EFF. SA1-3) (U)

E.P. No. 75 SATURN Installation Procedure, Fuel Pressurization Manifold (EFF. SA2-3) (U)

E.P. No. 76 SATURN Installation Procedure, 4 Inch GOX Line Assembly (EFF. SA1-3) (U)

E.P. No. 77 SATURN Installation Procedure, 4 Inch LOX Vent Line Adapter (EFF. SA1-3) (U)

E.P. No. 78 SATURN Installation Procedure, 7 Inch LOX Vent Line Adapter Plate Assembly (EFF. SA1-3) (U)

E.P. No. 79 SATURN Fabrication Procedure, 4 Inch Diameter 60 Foot GOX Line (EFF. SA1-3) (U)

E.P. No. 80 SATURN Handling Procedure, Vent and Pressurizing Lines (EFF. SA1-3) (U)

E.P. No. 81 SATURN Handling Procedure, Till and Drain LOX and Fuel (EFF. SA1-3) (U)

E.P. No. 82 SATURN Handling Procedure, High Pressure Spheres (EFF. SA1-3) (U)

E.P. No. 83 SATURN Termination Procedure, Flat Radio Frequency Transmission Cable (EFF. SA1-3 and subs) (U)

E.P. No. 84 SATURN Installation Procedure, Semi-Rigid Coaxial Cable (EFF. SA-1 and subs) (U)

E.P. No. 85 SATURN Termination Procedure, Cable Shielding, "Uniring" and "Hyring" Process (EFF. SA-1 and subs) (U)

E.P. No. 86 SATURN Installation Procedure, Armored or Conducted Cables (EFF. SA-1 and subs) (U)

E.P. No. 87 SATURN Manufacturing and Wiring Procedure, Universal Measuring Adapter Rack (EFF. SA-1 and subs) (U)

E.P. No. 88 SATURN Manufacturing and Wiring Procedure, Flight Sequence (EFF. SA-1 and subs) (U)

TECHNICAL STUDIES
FABRICATION DOCUMENTATION

E.P. No. 89 SATURN Manufacturing and Wiring Procedure, Squib Switch (EFF. SA1-3) (U)

E.P. No. 90 SATURN Manufacturing Procedure, LOX Relief Valve 1014000 (EFF. SA1-3) (U)

E.P. No. 91 SATURN Manufacturing Procedure, Pre-cooling Valve 10417068 (EFF. SA1-3) (U)

E.P. No. 92 SATURN Alinement Check Procedure, 8 Inch Diameter Suction Lines and 1.5 Inch Diameter GOX Lines Outboard Gimbal Joints (Mechanical) (EFF. SA1-3) (U)

E.P. No. 93 SATURN Removal Procedure, Outboard and Inboard Engine, Stratton Hydro Hi-Lift (EFF. SA1-3 and D) (U)

E.P. No. 94 SATURN Installation Procedure, Outboard and Inboard Engine, Stratton Hydro Hi-Lift (EFF. SA1-3 and D) (U)

E.P. No. 95 SATURN Fabrication Procedure, Mechanical Assembly Power Distributor 10420225 (EFF. SA1-3) (U)

E.P. No. 96 SATURN Fabrication Procedure, Measuring Distributor Mechanical Assembly 10420246 (EFF. SA1-3) (U)

E.P. No. 97 SATURN Fabrication Procedure, Mechanical Component Assembly Control Distribution 10420265 (EFF. SA1-3) (U)

E.P. No. 99 SATURN Alinement and Drilling Procedure "Q" Ball Hole Location Nose Cone (EFF. SA1-2) (U)

E.P. No. 100 SATURN Installation Procedure, Inboard and Outboard Engine Heat Shield, Curtains and the Flame Shield (EFF. SA1-3 and D) (U)

E.P. No. 101 SATURN Electrical Assembly Procedure, Measuring Distributor 9A4 (EFF. SA1-3) (U)

E.P. No. 102 SATURN Electrical Assembly Procedure, Measuring Distributor 9A5 (EFF. SA1-3) (U)

E.P. No. 103 SATURN Electrical Assembly Procedure, Measuring Distributor 9A6 (EFF. SA1-3) (U)

NOTE: E.P. numbers not appearing in proper sequence have been canceled.

E.P. No. 104 SATURN Electrical Assembly Procedure, Measuring Distributor 13A1 (EFF. SA1-3) (U)

E.P. No. 105 SATURN Installation Procedure, Tail Shroud and Heat Shield (EFF. SA1-3) (U)

E.P. No. 106 SATURN Electrical Assembly Procedure, Propulsion Distributor 10420011 (9A1) (EFF. SA1-3) (U)

E.P. No. 107 SATURN Electrical Assembly Procedure, Control Distributor 10420001 (15A1) (EFF. SA1-3) (U)

E.P. No. 108 SATURN Structural Procedure, Inboard Outrigger Assembly Tail (EFF. SA1-3) (U)

E.P. No. 109 SATURN Structural Procedure, Outboard Outrigger Assembly Tail (EFF. SA1-3) (U)

E.P. No. 111 SATURN Structural Procedure, Tail Assembly (EFF. SA1-3) (U)

E.P. No. 112 SATURN Removal Procedure, Forward Ring GMT-12004-8-0 from Spider Beam Assembly (EFF. SA2, 3, & D) (U)

E.P. No. 113 SATURN Assembly Installation Procedure, Rear Ring GMT-12004-7-0 (EFF. SA2, 3, & D) (U)

E.P. No. 114 SATURN Removal Procedure, Rear Ring GMT-12004-7-0 from Tail Section (EFF. SA1-3) (U)

E.P. No. 115 SATURN Installation Procedure, Engine Purge Lines (EFF. SA1-3) (U)

E.P. No. 116 SATURN Fabrication Procedure, Electrical Terminal Board (EFF. SA1-3) (U)

E.P. No. 119 SATURN Assembly and Installation Procedure, Forward Ring GMT-12004-8-0 (EFF. SA2, 3, & D) (U)

E.P. No. 120 SATURN Assembly and Installation Procedure, Rear Ring GMT-12004-2-0 (EFF. SA-1) (U)

E.P. No. 121 SATURN Assembly and Installation Procedure, Forward Ring GMT-12004-3-0 (EFF. SA-1) (U)

NOTE: E.P. numbers not appearing in proper sequence have been canceled.

TECHNICAL STUDIES
FABRICATION DOCUMENTATION

E.P. No. 122 SATURN Removal Procedure, Rear Ring GMT-12004-2-0 (EFF. SA-1) (U)

E.P. No. 123 SATURN Removal Procedure, Forward Ring GMT-12004-3-0 (EFF. SA-1) (U)

E.P. No. 124 SATURN Installation Procedure, Firewall Seals (EFF. SA1-3) (U)

E.P. No. 125 SATURN Weighing and CG Determination Procedure, Tooling Ring GMT-12004 (EFF. SA1-3) (U)

E.P. No. 126 SATURN Handling Procedure, S-V Dummy Stage (EFF. SA1-3 &D) (U)

E.P. No. 127 SATURN Locating and Drilling Procedure, Holes and Firewall No. Step Area (EFF. SA1-3) (U)

E.P. No. 130 Manufacturing Study, SATURN C-3 Configuration (U)

E.P. No. 131 260 Inch Diameter Segmented Tank, SATURN Phase II-C-2 Configuration (U)

E.P. No. 132 SATURN Installation Procedure, Components Shipped as Loose Equipment to the Launch Site (U)

E.P. No. 133 Manufacturing Study Single Tank Configuration (U)

E.P. No. 134 Manufacturing Study S-II Stage Single Tank (U) Configuration

NOTE: E.P. numbers not appearing in proper sequence have been canceled.

TECHNICAL STUDIES
FABRICATION DOCUMENTATION

Spinning of Welded 5086 Aluminum Alloy, DFR-IN-2-58 (U)

Forming Aluminum by the Hydrodynamic Process, DFR-IN-3-58 (U)

Program for Development of a Multiple Roll Weld Backing and Weld Down System, DFR-IN-4-58 (U)

Preliminary Research Note on Measurement Aspects of Weldment Displacement during the Welding Cycle as Conducted on the Universal Welding Fixture, R. J. Schwinghamer, DFR-IN-5-58 (U)

Project Notes of Measurement Analysis and Research Unit Contribution to Loftus Furnace Checkout Operation, R. J. Schwinghamer, DF-IN-7-58 (U)

Welding Wheel Pickup Investigation 400 KVA Sciaky Seam Welder, M. W. Sanders, DF-IN-9-58 (U)

Tool Design Manual, DF-IN-10-58 (U)

Investigation of Silk Screen as a Tool for Making Terminal Boards Mr. Neisler - Elect. Engr. Sect., DF-IN-11-58 (U)

Stress Corrosion Testing of Aluminum Alloy 5086, E. Hasemeyer, DF-IN-13-58 (U)

Fusion Welding 2014-T3. Dan Daley, DF-IN-14-58 (U)

Resume of Experimental Data Pertaining to Epoxy Resin Curing Capabilities of the 500 KW Loftus Vertical Solution Heat Treat Furnace, Mr. Schwinghamer, DF-IN-16-58 (U)

Fabrication with Plastics. F. J. Beyerle, DF-IN-17-58 (U)

Preliminary Report of MA&R Unit, Contribution to Design Criteria Development of Juno V Electronic Weighing System, Robert Schwinghamer DF-IN-18-59 (U)

Flaring of a Typical Bulkhead Hole at Various Temperatures, D. H. Hoppers, DFR-IN-01-59 (U)

Optical Assembly Procedure, George Sipes, DFE-IN-03-59 (U)

Preliminary Report, Design Criteria for Development of Juno V Alinement System, John R. Rasquin, DFE-IN-05-59 (U)

Ductaluminum 356 High Strength Aluminum Alloy Castings, Dave Hoppers, DFR-IN-06-59 (U)

A Study of New Non-Metallic Materials for Missile Applications, Ed Brown, DFR-IN-07-59 (U)

Resistance Test of Burndy Hufen Pins and Sockets (Interim Report) W. A. Wall, DFE-IN-08-59 (U)

Transverse Bow in Milled SATURN Skin Sheets, D. H. Hoppers, DFR-IN-10-59 (U)

An Introduction to New Methods of Machining Using Electrical, Chemical, and Ultrasonic Energy, D.H. Hoppers, DFR-IN-12-59 (U)

Ultrasonic Weld Technique Development, Status Report No. 1, James M. Hoop, DFR-IN-13-59 (U)

Investigation of Shrinkage in an Aluminum Girth Weld, John Melonas, DFR-IN-14-59 (U)

Plastic Round-Out Ring, Pomeroy, DFR-IN-15-59 (U)

Forming Knuckles on Single Knuckle Die, Hasemeyer, DFR-IN-16-59 (U)

Forming of Bulkheads by Flanging Method, Hasemeyer, DFR-IN-17-59 (U)

The Control of Corrosion During Fabrication of the Jupiter Missile, Beyerle and Brown, DFR-IN-18-59 (U)

Study of the Weldability of Aluminum Casting Alloys with 5086 Wrought Aluminum Alloy, D. H. Hoppers, DFE-IN-19-59 (U)

Tool and Fixture Models in Tool Engineering, R. Pomeroy, DFR-IN-19-59 (U)

Welding Meter Calibration Program, W. A. Wall, DFE-IN-20-59 (U)

Minimum Bend Radii for Aluminum Alloy 5456, E. Hasemeyer, DFR-IN-20-59 (U)

Preliminary Investigation of the Magnetic Flux Distributed Around the Welding Arc. J. R. Rasquin, DFR-IN-21-59 (U)

SATURN Electronic Weighing System, R. J. Schwinghamer, DFE-IN-22-59 (U)

Test of "Heli-Coil" Insert for Cable Trunk Fasteners, Dave Hoppers, DFR-IN-23-59 (U)

Correlation of Mechanical Properties Derived by Power Spinning and Rolling (Final Report), Paul Schuerer, Jim Trimble, and Earl Hasemeyer, DFR-IN-24-59 (U)

Electrical Design Concept - SATURN Assembly Fixture and Scaffold, W. P. McCormick, DFE-IN-27-59 (U)

Weldment Temperature Measurement, John K. Morris, DFE-IN-28-59 (U)

Forming of PH 15-7 MO Stainless Steel, P. H. Schuerer, DFR-IN-29-59 (U)

"Huckbolt" Fasteners for Thin Wall Aluminum Cylinders, D. H. Hoppers, DFR-IN-30-59 (U)

Measuring Analysis and Research Unit SATURN Committments and Status, R. J. Schwinghamer, DFE-IN-32-59 (U)

Forming at High Energy Rates, Earl A Hasemeyer, DFR-IN-33-59 (U)

Development of Technique for Forming Long Bellows (Insulation Pipe) Earl A. Hasemeyer, DFR-IN-34-59 (U)

Investigation of Shrinkage in Aluminum Welds, John Melonas, DFR-IN-35-59 (U)

Evaluation of Turco 4461, Ed Brown and Max Sharpe, DFR-IN-36-59 (U)

Ultrasonic Transducer Impedance Measurement, John Morriss and W. B. Cruise, DFE-IN-37-59 (U)

Preliminary Report on Determination of Hold-Down Requirements in Fusion Welding of Aluminum Alloys, W. B. Cruise, DFE-IN-38-59 (U)

Evaluation of Procedures, for Heat Exchanger Tube Cleaning, Edwin L. Brown, DFA-IN-40-59 (U)

The Right Heat Treatment Keeps It Stainless, J. R. Trimble, DFR-IN-41-59 (U)

Status Report - Seam Tracker Development, J. D. Bennight, DFE-IN-42-59 (U)

Evaluation of Tri-Acid Etch, Edwin L. Brown and Max Sharpe, DFR-IN-43-59 (U)

New Welding Processes, J. R. Trimble, DFR-IN-45-59 (U)

Milling of High Strength Steels in the Hardness Range of 330 to 560 Brinell, DFR-IN-46-59 (U)

Temperature Measurement for Aluminum Sheet Edge Heating, J. K. Morris, DFE-IN-47-59 (U)

SATURN Electrical Connector and Wiring Heat Test, J. K. Morris, DFE-IN-48-59 (U)

Handbook of Operation Instructions for Missile Valves Pneumatic Test Console MMS-5413, W. Chovan, DFPM-IN-49-59 (U)

Status Report on the Sciaky Arc Guidance System, Frits Rienks and Daniel M. Daley, Jr., DFR-IN-50-59 (U)

Manufacturing Forecast to 1965, J. R. Trimble, DFR-IN-51-59 (U)

Etch Rates of 321 Stainless Steel and the Prevention of Smut Formation in Nitric-Hydrofluoric Acids Pickling Solution, R. W. Fitzgerald DFR-IN-02-60 (U)

An Examination of Corrosion Effects of Leak-Tec #277-C and Dowell F-33 on 321 Stainless Steel, R. W. Fitzgerald, DFR-IN-03-60 (U)

The Use of a Strippable Coating for the Protection of Aluminum in Acids, R. W. Fitzgerald, DFR-IN-04-60 (U)

Tank Line Developmental Plating - MMS-5311, Mr. Culley, DFPM-IN-05-60 (U)

Chemical Cleaning Console - Missile Tubing, Mr. Culley, DFPM-IN-06-60 (U)

Instrumentation for the Measurement of Arc Spot Welding Currents, John K. Morris, DFE-IN-07-60 (U)

Preliminary Review of Type 410 Stainless Steel, Robert Hancock, DFR-IN-09-60 (U)

Voltage Level Survey - 480V Distribution System, W. B. Cruise, DFR-IN-10-60 (U)

Welding of Magnesium Alloys, Frits Rienks, DFR-IN-11-60 (U)

SATURN Ring Alinement Check, George Sipes, DFE-IN-12-60 (U)

Artifical Passivation of 300 Series Stainless Steel, R. W. Fitzgerald, DFR-IN-14-60 (U)

Typical SATURN Assembly Procedure for Sub-Assembly and Clustering, Earl Wilson, DFME-IN-15-60 (U)

Second Status Report - Seam Tracker Development, J. D. Bennight and W. A. Wall, DFE-IN-16-60 (U)

Preliminary Investigation of the Properties of Type 17-7 PH Stainless Steel, Robert L. Hancock, DFR-IN-17-60 (U)

Manual Heliarc Spot Welding Equipment Development, W. M. McCampbell, DFMP-IN-19-60 (U)

Perimeter Gage Development and Use, W. R. Pomeroy, DFR-IN-20-60 (U)

Preliminary Investigation of the Properties of AM-350 and AM-355 Stainless Steel, Robert L. Hancock, DFR-IN-21-60 (U)

Fabrication Techniques for Type 410 Stainless Steel, D. Daley, P. Schuerer, and Dave Hoppers, DFR-IN-21-60 (U)

Calibration of Azusa Thermostats, George Sipes, DFR-IN-23-60 (U)

Environmental and Passivation Tests with Precipitation Hardening Stainless Steels, W. Fitzgerald, DFR-IN-24-60 (U)

Power Shear - Spinning of Aluminum Alloy Type 2014, E. A. Hasemeyer (U)

M-F&AE-IN-61-1 Titanium as the Structural Material for Liquid Fueled Vehicles, May 22, 1961

M-F&AE-IN-61-2 Automatic Fusion Welding of Specially Designed Aluminum Alloy Structures, May 24, 1961

M-F&AE-IN-61-3 Horizontal Circumferential Assembly, May 25, 1961

M-F&AE-IN-61-4 Forming 70,000 PSI Yield Strength Tubing, May 25, 1961

M-F&AE-IN-61-5 The Effects of Cold Working of Welds in Aluminum Alloys, May 8, 1961

M-F&AE-IN-61-6 Exploring the Use of Modules in Versatile Tooling Systems, June 2, 1961

M-F&AE-IN-61-7 The Fabrication Assembly of Space Booster Tank Sections in the Vertical Attitude Using a Modular Tooling Concept, June 19, 1961

M-F&AE-IN-61-8 Weld Seamtracking Intelligence Performance of the Sciaky S 204-2, June 21, 1961

M-F&AE-IN-61-10 Methods of Scale Prevention and Scale Removal During Heat Treating of Type 17-7 and Type 410 Stainless Steel; June 23, 1961

M-F&AE-IN-61-11 Drying Capabilities of the Kinney Vacuum Oven; June 27, 1961

M-F&AE-IN-61-2 Machiniability of High Strength Metals - A Literature Survey; June 12, 1962

M-F&AE-IN-61-13 Upsetting Metal Edges for Welding; July 21, 1961

M-F&AE-IN-61-14 Automating Ultrasonics for Control of Weld Quality (A Progress Report on a Development Program); July 24, 1961

M-F&AE-IN-61-15 Spin-Forging of SATURN Bulkheads - A Study of Techniques and Problem Areas; August 1, 1961

M-F&AE-IN-61-16 Test Performance of Instrument Compartment Thermostats; August 2, 1961

M-F&AE-IN-61-17 Interim Report - Electronics Rough Alignment System; August 4, 1961

M-F&AE-IN-61-18 Use of Vacuum for Welding Fixture Holddowns; August 7, 1961

M-F&AE-IN-61-19 State-of-the-Art of Electroforming Processes - A Literature Survey; August 15, 1961

M-F&AE-IN-61-21 Welding Arc Force Measurements; September 11, 1961

M-F&AE-IN-61-22 Hydrogen Embrittlement of Stainless Steel by Vapor Blasting; July 20, 1961

M-F&AE-IN-61-23 A Literature Survey of Flow or Wave Soldering; September 20, 1961

M-F&AE-IN-61-24 Preliminary Studies in Explosive Hardening; October 10, 1961

M-F&AE-IN-61-25 Welding of Aluminum Alloys on a Constantly Changing Radial Path; October 19, 1961

M-F&AE-IN-61-26 Using High Energy to Form Materials; October 20, 1961

M-F&AE-IN-61-28 Determining Presence of Bond in Adhesively Bonded Honeycomb; October 25, 1961

M-F&AE-IN-61-30 F-1 Engine Angle Measuring System; November 7, 1961

M-F&AE-IN-61-32 Fabricating Characteristics of Types A-286, AM-355, 304L, Stainless W, and 19-9DL Stainless Steels; November 17, 1961

M-F&AE-IN-61-33 Design of a Laboratory Schlieren System; November 20, 1961

M-ME-IN-61-34 Analysis of a Tooling Concept for Vertical Assembly of Large Cylinders, December 8, 1961

M-ME-IN-61-35 An Interim Study of a Suspended Weld Carriage for Vertical Assembly of Liquid Propellant Containers, December 8, 1961

M-ME-IN-61-36 Evaluation of a Low Frequency ARC Guidance Transducer; December 8, 1961

M-ME-IN-61-37 Tooling for High Energy Forming; December 14, 1961

M-ME-IN-61-38 Interim Report - Development of Tooling Concepts and Welding Techniques for S-IB Structure; January 9, 1962

M-ME-IN-62-1 A Tool Study for Large Diameter Bulkheads; January 15, 1962

M-ME-IN-62-2 Weld Automation and Control Study; January 16, 1962

M-ME-IN-62-3 Evaluation of Multi-Pass MIG and TIG Welds in 2014-T651 Aluminum Plate; January 23, 1962

M-ME-IN-62-4 Vertical Longitudinal Welding Tool Analysis; January 31, 1962

M-ME-IN-62-5 State-of-the-Art for Electron Beam, High Frequency, and Plasma Arc Welding; February 3, 1962

M-ME-IN-62-6 Horizontal Fusion Welding of Specially Designed Aluminum Alloy Rib Sections; February 7, 1962

M-ME-IN-62-7 LOX Relief Valve Switch Malfunction Determination; February 8, 1962

M-ME-IN-62-8 Stored Energy and Applications of Intense Magnetic Fields; February 7, 1962

M-ME-IN-62-9 Machining Tests on 2219-T87 Aluminum Alloy; March 16, 1962

M-ME-IN-62-10 Evaluation of Vari-Arc Equipment for Metal-Inert-Gas Spot Welding; March 22, 1962

M-ME-IN-62-11 Research Report Pertaining to Aluminum Rib Detection; March 23, 1962

M-ME-IN-62-12 Electro Optical Control of Machine Tooling; March 23, 1962

M-ME-IN-62-13 The Electrical Discharge Michining Process; March 28, 1962

M-ME-IN-62-15 Electron Beam Welding at MSFC; April 2, 1962

M-ME-IN-62-17 Metal Forming Development for S-IC SATURN; April 18, 1962

M-ME-IN-62-18 Feasibility Study on Forming Thin Wall Elbows From Forgings; April 18, 1962

M-ME-IN-62-19 Multiple Repair Welding of 3/4" Thick Types 5456-H343 and 2219-T87 Aluminum Alloy; May 7, 1962

M-ME-IN-62-20 Basic Characteristics and Preliminary Welding Data for 2219 Aluminum Alloy; May 8, 1962

M-ME-IN-62-21 Forming of Milled Panels; May 16, 1962

M-ME-IN-62-22 Hand Welding of Dissimilar Aluminum Alloys; May 10, 1962

M-ME-IN-62-23 Explosive Sizing of Welded Preforms; June 8, 1962

M-ME-IN-62-24 Heat Treating Tests on 2219 Aluminum Alloy; June 4, 1962

M-F&AE-MTP-61-20 Vertical Position Welding of Aluminum Alloy for Space Launch Vehicle Applications; April 8, 1961

M-F&AE-MTP-61-21 Survey of High Intensity Arc Phenomena; April 8, 1961

M-F&AE-MTP-61-22 Investigation of the Influence of Weld Variables upon the Quality Obtainable in Perfectly Aligned and Mechanically Supported Butt Joints; April 14, 1961

M-F&AE-MTP-61-23 M-F&AE-MI SATURN and Juno II Project Status; April 23, 1961

M-F&AE-MTP-61-24 Use of Load Cells with the Prespray Engine Handling System; April 24, 1961

M-F&AE-MTP-61-25 Flare-Type Demountable Stainless Steel Tubing Connections for Space Vehicle Service; March 22, 1961

M-F&AE-MTP-61-26 Fabricating 2219 Aluminum Alloy; April 28, 1961

MTP-F&AE-61-27 Applications of Stored Energy and Magnetomotive Force in Orbital Operations; November 21, 1961

FINAL MANUFACTURING PROCEDURES

E.P. 1 SATURN Alignment Procedure, Instrument Container Number 15; (EFF: SA-1-4); November 27, 1961

E.P. 2 SATURN Fabrication and Installation Procedure 1.5-Inch Diameter Inboard and Outboard GOX Lines; (EFF: SA-T-SA 1-4); March 20, 1961

E.P. 4 SATURN Structural Fabrication Procedure Top Adapter (EFF. SA 1-4 & D); March 27, 1962

E.P. 6 SATURN Installation Procedure Outboard and Inboard Engines (Overhead Crane); (EFF: SA 1-4); October 30, 1961

E.P. 7 SATURN Removal Procedure Outboard and Inboard H-1 Engines (Air Logistic's Trailer Presray Beam)(EFF: SA 1-4); October 30, 1961 - revised January 30, 1962

E.P. 8 SATURN Installation Procedure Outboard and Inboard H-1 Engines (Air Logistic's Trailer Presray Beam) (EFF: SA 1-4); October 30, 1961 - Revised February 15, 1962

E.P. 9 SATURN Installation Procedure Instrument Container No. 15 Components (EFF: SA 1-4); July 19, 1961

E.P. 11 SATURN Assembly Procedure 70-Inch-Diameter LOX Container Unit Assembly (Prior to Clustering) (EFF: SA 1-4 & D); January 24, 1962

E.P. 12 SATURN Assembly Procedure 70-Inch-Diameter Fuel Container Unit Assembly (EFF: SA 1-4 & D); March 26, 1962

E.P. 13 SATURN Assembly Procedure 105-Inch-Diameter LOX Container Unit Assembly (EFF: SA 1-4 & D); November 30, 1961

E.P. 14 SATURN Assembly Procedure Second Stage Adapter (Prior to Clustering)(EFF: SA 1-4 & D); November 30, 1961

NOTE: E.P.'s were prepared for Block I vehicles and M.P.'s were prepared for Block II vehicles.

E.P. 15 SATURN Assembly Procedure Tail Shrouds, Heat Shield, and Flame Shield (Prefitting) (EFF: SA 1-4 & D), December 14, 1961

E.P. 17 SATURN Installation Procedure Interstage Fairing (EFF: SA 1-4 & D); June 8, 1961 - revised November 8, 1961

E.P. 18 SATURN Installation Procedure Instrument Container No. 16 Components (EFF: SA-1-4); December 7, 1961

E.P. 25 SATURN Fabrication and Installation Procedure Firewall (EFF: SA 2-4 & D); March 2, 1962

E.P. 26 SATURN Installation Procedure Instrument Container No. 13 Components (EFF: SA 1-4); December 17, 1961

E.P. 27 SATURN Installation Procedure Instrument Container No. 14 Components (EFF: SA 1-4); December 1, 1961

E.P. 28 SATURN Alignment Procedure Instrument Container Nos. 13, 14, & 16 (EFF: SA 1-4); August 17, 1961

E.P. 29 SATURN Fabrication and Installation Procedure Upper 8-Inch-Diameter Inboard and Outboard LOX and Fuel Suction Lines (EFF: SA 1-4); January 2, 1962

E.P. 30 SATURN Installation Procedure Instrument Container Nos. 13, 14, 15 & 16 (EFF: SA 1-4); December 18, 1961

E.P. 32 SATURN Assembly Procedure LOX Container Unit Center Assembly (EFF: SA 2-4 & D); January 5, 1962

E.P. 33 SATURN Installation Procedure Clustering 70-Inch-Diameter LOX and Fuel Container Unit Assemblies (EFF: SA-2-4 & D); January 5, 1962

E.P. 38 SATURN Installation Procedure Forward Ring GMT-12004-8-0 (EFF: SA 2 & 4); January 22, 1962

E.P. 39 SATURN Installation Procedure Lower Inboard and Outboard Suction Lines (EFF: SA 1-4); January 30, 1962

E.P. 40 SATURN Installation Procedure Inboard Engine Turbine Exhaust System (EFF: SA-1); December 29, 1961

E.P. 50 SATURN Weighing Procedure Booster Assembly (EFF: SA 1-4); May 10, 1962

E.P. 52 SATURN Installation Procedure Erection Targets on the S-I Stage (EFF: SA 1-4); March 12, 1962

E.P. 53 SATURN Alignment Procedure Payload Body Assembly (EFF: SA 1-4 & D); November 27, 1961

E.P. 55 SATURN Alignment Procedure Local Langle of Attack Meters on Aft Unit (EFF: SA 1-4); January 17, 1962

E.P. 56 SATURN Alignment Procedure ST-90 Tilt Frame to Vehicle Centerline (EFF: SA 1-4); November 29, 1962

E.P. 57 SATURN Alignment Procedure Accelerometers and Rate Gyros to Vehicle Centerline; February 27, 1962

E.P. 58 SATURN Alignment Procedure Operation of Resolver Controlled Roll Indicator (EFF: SA 1-4 & D); November 27, 1961

E.P. 63 SATURN Fabrication Procedure Heat Exchanger (EFF: SA 2-4) March 2, 1962

E.P. 69 SATURN Installation Procedure Dummy Payload Components (EFF: SA 1-4); March 14, 1962

E.P. 71 SATURN Installation Procedure Fuel Vent Line Adapter Plate Assembly (EFF: SA-2 & 4); February 6, 1961

E.P. 73 SATURN Installation Procedure LOX Interconnect, Fill, and Drain Lines (EFF: SA 1-4); December 11, 1961

E.P. 74 SATURN Installation Procedure Fuel Fill and Interconnect Lines (EFF: SA 1-4); December 13, 1961

E.P. 75 SATURN Installation Procedure Fuel Pressurizing Manifold (EFF: SA-2 & 4); December 15, 1961

E.P. 76 SATURN Installation Procedure 4-Inch GOX Line Assembly (EFF: SA 1-4); December 22, 1961

E.P. 77 SATURN Installation Procedure 4-Inch LOX Vent Line Adapter (EFF: SA 1-4); December 12, 1961

E.P. 78 SATURN Installation Procedure 7-Inch LOX Vent Line Adapter Plate Assembly (EFF: SA 1-4); December 22, 1961

E.P. 79 SATURN Fabrication Procedure 4-Inch-Diameter GOX Line Assembly (EFF: SA 1-4); September 13, 1961 - Revised November 6, 1961

E.P. 99 SATURN Alignment Procedure "Q" Ball Hole Location Nose Cone (EFF: SA-1); November 17, 1961

E.P. 100 SATURN Installation Procedure Inboard Engine Heat Shield, Outboard Engine Curtains and the Flame Shield (EFF: SA 1-4 & D); December 15, 1961

E.P. 105 SATURN Installation Procedure Tail Shroud and Heat Shield (EFF: SA 1-4); January 16, 1962

E.P. 134 SATURN Fabrication and Assembly Procedure S-II Stage Single Tank Configuration Manufacturing Study; March 10, 1961

E.P. 140 SATURN Components Assembly Procedure Valves and Control Devices (EFF: SA 1-4); May 19, 1961

E.P. 144 SATURN Fabrication Procedure Upper Thrust Rinc (EFF: SA-4); February 15, 1962

E.P. 145 SATURN Fabrication Procedure Lower Thrust Ring (EFF: SA-4); March 2, 1962

E.P. 148 SATURN Installation Procedure H-1 Engines (Counterbalance Beam) EFF: SA 1-4); January 31, 1962

E.P. 149 SATURN Alignment Procedure "Q" Ball Hole Locations - Nose Cone (EFF: SA-2); November 15, 1961 - revised February 9, 1962

E.P. 150 SATURN Assembly Plan S-I Stage Procurement Package Assembly Contract; July 15, 1961

E.P. 151 SATURN Installation Procedure Instrument Container No. 12 Components (EFF: SA 3-4); March 28, 1962

E.P. 156 SATURN Alignment Procedure Optical Control of S-1 Stage (EFF: SA 1-4); March 26, 1962

E.P. 168 SATURN Removal Provedure H-1 Engines Using Counterbalance Presray Beam (EFF: SA 1-4); May 14, 1962

E.P. 169 SATURN Alignment Procedure Instrument Container No. 15 Rate Gyro Bracket Alignment at A.M.R. (EFF: SA 1-4); March 14, 1962

- -

MP-1000 SATURN C-1 Alignment Procedure S-I Stage Optical Control (EFF: SA-5, -6, -7, -9, and SA-D5); July 18, 1962

MP-1002 SATURN C-1 Alignment and Installation Procedure: Suction Line Support Brackets (EFF: SA-5, -6, -7, and -9); June 20, 1962

MP-1100 SATURN C-1 Assembly Procedures Mating the Tail, 105-Inch Diameter LOX Container, and Spider Beam Unit Assemblies; (EFF: SA-5 and SA-D5); June 18, 1962

MP-1101 SATURN C-1 Assembly Procedure Clustering the 70-Inch - Diameter Container Unit Assemblies (EFF: SA-5, -6, -7, -9, and SA-D5); July 14, 1962

MP-1400 SATURN C-1 Handling Procedure Propellant Containers (Prior to Installation of External Components) (EFF: SA-5, -6, -7, and -9); April 4, 1962

MP-1401 SATURN C-1 Handling Procedure H-1 Engine (EFF: SA-5, -6, -7, and -9); June 18, 1962

MP-1501 SATURN C-1 Installation Procedure Hydrogen Vent Lines (EFF: SA-5, -6, -7, -9, and SA-D5); April 3, 1962

MP-1502 SATURN C-1 Installation Procedure Components in the 70-Inch Diameter Fuel Container Unit Assemblies (EFF: SA-5, -6, -7, and -9); April 30, 1962

MP-1503 SATURN C-1 Installation Procedure Components in the 105-Inch Diameter LOX Container Unit Assembly (EFF: SA-5, -6, -7, and -9); April 20, 1962

MP-1504 SATURN C-1 Installation Procedure Components in the Tail Unit Assembly (Prior to Clustering) (EFF: SA-5, -6, -7, and -9); June 18, 1962

MP-1505 SATURN C-1 Installation Procedure Components in the 70-Inch Diameter LOX Container Unit Assemblies (EFF: SA-5, -6, -7, and -9); April 14, 1962

MP-1506 SATURN C-1 Installation Procedure Components on the Spider Beam Unit Assembly (Prior to Clustering); June 15, 1962

MP-1507 SATURN C-1 Installation Procedure LOX and Fuel Interconnect Lines (EFF: SA-5, -6, -7, and -9); June 22, 1962

MP-1508 SATURN C-1 Installation Procedure Components in Instrumentation Assembly No. 1 (Fuel Tank No. 1) (EFF: SA-5, -6, -7, and -9) June 25, 1962

MP-1509 SATURN C-1 Installation Procedure Components in Instrumentation Assembly No. 2 (Fuel Tank No. 2) EFF: SA-5, -6, -7 and -9); July 17, 1962

MP-1511 SATURN C-1 Installation Procedure LOX and Fuel Suction Lines for Engines (EFF: SA-5 and -6); June 20, 1962

MP-1512 SATURN C-1 Installation Procedure GOX Pressurization and LOX Vent Lines and Valves (EFF: SA-5, -6, -7, -9 and SA-D5); June 27, 1962

MP-1513 SATURN C-1 Installation Procedure Shroud Fairings (EFF: SA-5, -6, -7, -9 and SA-D5); June 26, 1962

MP-1514 SATURN C-1 Installation Procedure Fuel Pressurization Manifold and Connecting Lines (EFF: SA-5, -6, -7, -9 and SA-D5); July 17, 1962

MP-1515 SATURN C-1 Installation Procedure Flame Shield Assembly and Access Chute Assembly (EFF: SA-5, -6, -7, -9 and SA-D5); July 16, 1962

MP-1516 SATURN C-1 Installation Procedure GOX Manifold and 1.5-Inch Diameter Lines for Outboard Engines (EFF: SA-5, -6, -7 and -9); June 18, 1962

MP-1524 SATURN C-1 Installation Procedure LOX-GOX System (EFF: SA-5, -6, -7, and -9); June 25, 1962

MP-1902 SATURN Manufacturing Plan S-I Stage and Instrument Unit Dynamic Test Vehicle (EFF: SA-D5); July 17, 1962

TOOL INSTRUCTIONS (Monthly Reports)

SK-915 Clamps - Quick Installation; March 14, 1961

A1F-11732 Fixture - Alignment, Aft Section, ST-90 Tilt Frame; May 15, 1962

AF-12004 Main Cluster Assembly Fixture; August 21, 1962; March 26, 1962

EAF-12004 SATURN Fixture Electrical Installation; June 22, 1961; October 9, 1961

OA1F-12002 Tail Section Assembly Optical Alignment Fixture; June 12, 1961

AF-12032 Fixture- Assembly, SATURN Barrel Section; April 20, 1961

MF-12043 Fixture - Mill, Thrust Frame Upper Connecting Angles; April 20, 1961

AF-12044 Fixture - Assembly, Upper Thrust Ring Assembly, 103-Inch Diameter; April 20, 1961

AF-12045 - Fixture - Assembly, Lower Thrust Ring Assembly, 103-Inch Diameter; April 20, 1961

AF-12054 - Fixture, Assembly, Upper Thrust Ring Subassemblies; April 20, 1961

ADF-12055 - Fixture - Assembly Drill, L. H. Longeron Assembly; April 20, 1961

AF-12060 - Upper Spider Beam Assembly Fixture; April 20, 1961; August 15, 1961

WF-12063 - Fixture - Weld, Fuel Transfer Assembly; April 10, 1961

AF-12073 - Fixture - Locating, Upper Thrust Ring Stiffner Blocks to Connector Blocks; April 20, 1961

AF-12074 - Fixture - Assembly, LOX Plate Assembly, April 20, 1961

AF-12075 - Fixture, Assembly, Fuel Plate Assembly; April 20, 1961

DF-12104 - Fixture - Drill, Engine Outrigger Support Plate, May 25, 1961

OA1F-12116 - Fixture - Optical Alignment, Actuator Points, Outboard Outrigger, Tail Section Assembly; May 19, 1961

OA1F-12117 - Fixture - Optical Alignment, Actuator Points, Inboard Thrust Barrel, Tail Section Assembly; May 19, 1961

WF-12172 Fixture - Locating & Weld, Forward LOX Pipe, Outlet & Lead Gage to 70-Inch Diameter Spherical Bulkhead; January 25, 1961

HT-12177 Bracket - Hoist Equipment, Forward Support Ring, Main Cluster Assembly Fixture; April 19, 1961

DJ-12197 Jig - Drill, Upper Beam Outrigger Assembly; April 20, 1961

RF-12200 Fixture - Routing & Locating, 70" Diameter Fuel Front Bulkhead Assembly; January 31, 1961

DJ-12204 Jig - Drill, Upper Beam Hub Assembly Fitting; April 20, 1962

AF-12242 Fixture - Assembly, Inboard Beam Assembly; April 20, 1961

ME-12248 Bracket - Support, H-1 Engine Actuator; April 18, 1961

TmF-12266 Fixture - Trim, 4" Diameter Vent and Pressurizing Lines, Missile Tubing; April 19, 1961

HF-12303 Fixture - Holding Attachment of Clips, Legs, Stiffener, Sensor Tube Weldment to Oxidizer Tank Assembly; April 20, 1961

ADT-12307 Template - Drill, Forward and Aft Fuel and Oxidizer Bulkheads, 70" Diameter Tanks; February 27, 1961

HF-12311 Fixture, Holding, Fuel Pressure Interconnect Line and Brackets, Missile Tubing; April 18, 1961

HT-12337 Fixture, Support, Hoisting, Incasing GOX Line Assembly, Missile Tubing; April 18, 1961

ME-12339 Adapter Kits - Hose Cleaning Lines; April 18, 1961

WTF-12362 Fixture - Broken-Arm, 7" Diameter LOX Vent, Missile Tubing, April 18, 1961

WTF-12363 Fixture - Broken-Arm, 4" Diameter LOX Vent, Missile Tubing, April 18, 1961

WTF-12364 Fixture - Broken-Arm, 3" Diameter Fuel Vent, Missile Tubing; April 18, 1961

FPLT-12413 Template - Flat Pattern Layout, Measuring Distributor Chassis Assembly; April 19, 1961

RT-12414 Template - Router, Measuring Distributor Chassis Assembly; April 19, 1961

FB-12415 Block - Form, Measuring Distributor Chassis Assembly Cover; April 19, 1961

LT-12416 Template - Locating, Base Plate, Measuring Distributor; April 19, 1961

ME-12429 Platform - Personnel Access, LOX Container Unit Center Assembly; April 19, 1961

CKF-12433 Fixture - Check, Gimbal Joints, Power Unit Assembly, Inboard Engine Missile Tubing; April 18, 1961

FPLT-12435 Template - Flat Pattern Layout, Measuring Distributor Cover; April 19, 1961

AF-12447 Fixture - Assembly, Shroud and Heat Shield Assembly; April 24, 1961

AF-12454 Fixture - Assembly, Fuel Transfer Assembly to Tail Section Assembly, LOX Container Unit Center Assembly; April 18, 1961

WF-12476 Fixture - Weld, GOX Line Assembly, 1.5" Diameter Inboard and Outboard Engines; April 6, 1961

CKF-12502 Fixture - Check, Power Unit Assembly, 1.5" Gimbal Joint, Missile Tubing; April 18, 1961

CKF-12504 Fixture - Check, Power Unit, 8"; April 19, 1961

AF-12507 Fixture - Assembly, Alignment of S-V Adaptor Booster Assembly; April 24, 1961

DJ-12521 Jig - Drill, LOX Unit Center Assembly; April 18, 1961

A1F-12528 Fixture - Alignment, S-IV to S-I; January 31, 1961

A1F-12529 Fixture - Alignment, S-IV to S-V; February 7, 1961

A1F-12542 Fixture - Alignment, 1.5" and 8" Gimbal Joints on Outboard Engines; January 6, 1961

AF-12543 Fixture - Assembly, Tail Section Firewall Octant Assemblies; February 2, 1961

AF-12551 Fixture - Assembly, Forward Hoist Connection, 5th Stage Adapter; January 6, 1961

HF-12562 Fixture - Holding, Pickling, Passivating & Cleaning Missile Tubing; February 6, 1961

P&HF-12575 Fixture - Positioning & Holding, Lower Turbine Exhaust, Inboard Engine; April 19, 1961

P&HF-12576 Inboard Engines Upper Turbine Exhaust Duct Positioning and Holding Fixture; August 21, 1961

ADF-12578 Fixture - Assembly Drill, Power Unit Assembly, Major Assembly; May 23, 1961

OA1FA-12589 Accessory - Optical Alignment Fixture, Vertical Tooling Bar, Major Assembly, January 17, 1961

HF-12595 Fixture - Hold, Front and Rear Assembly, LOX and Fuel, 70" Diameter Tank; July 7, 1961

DJ-12600 Jig - Drill, Skin Assembly to Connection Bracket, S-IV Stage; January 10, 1961

DJ-12606 Jig - Drill, Housing End, Heat Exchanger, Tail Section; May 10, 1961

DJ-12607 Jig - Drill, Housing End, Missile Tubing; February 14, 1961

TrT-12612 Template - Trim, Frame, Zee Segment, Tail Section; April 13, 1961

DJ-12614 Jig - Drill, Retro-Rocket Installation, 2nd Stage Adapter; April 24, 1961 and June 1, 1961

WFA-12620 70-Inch-Diameter Tanks Vacuum-Type Plastic Backup Bar; August 25, 1961

P&HF-12702 Fixture - Positioning & Holding, H-1 Engine; January 16, 1961; August 15, 1961

SF-12707 Fixture, Support, Aft Tooling Ring, Outboard Panel, Shroud; January 7, 1961

CKF-12709 Fixture - Check, Displacement Expansion Joints, Turbine Exhaust Duct; April 19, 1961

OA1FA-12713 Accessory - Optical Alignment Fixture, Sub-Base, Optical Stand, Major Assembly; March 1, 1961

W&TF-12714 Fixture - Weld and Trim; January 6, 1961

FrD-12715 Die - Flaring, Housing End, Heat Exchanger, Main Assembly; January 17, 1961

W&TF-12716 Fixture - Weld & Trim, Flange, GOX Outlet, Missile Tubing; January 9, 1961

FrD-12717 Die - Flaring, Housing End, Heat Exchanger, Missile Tubing; February 27, 1961

LDJ-12718 Jig - Locating Drill, Nose Cone; January 18, 1961

WF-12721 Fixture - Weld, Housing End Subassembly, Heat Exchanger, Tail Section; February 27, 1961; June 29, 1961

WF-12722 Tail Section Heat Exchanger Assembly Welding Fixture; February 27, 1961 and August 21, 1961

WF-12724 Fixture - Weld, Bosses, Fuel and LOX, 70" and 105" Diameter Tanks, January 31, 1961

WF-12731 Fixture - Weld, Tube Assembly, Purge System, LOX Dome & Auxiliary Manifold, Missile Tubing; April 19, 1961

TmF-12732 Fixture - Trim, Body Oxygen, Heat Exchanger; April 21, 1961

SAF-12736 Fixture - Subassembly, Outboard Fairing, LOX; June 30, 1961

SAF-12737 Fixture - Subassembly, for Half Section of Outboard Fairing, Fuel; June 30, 1961

FB-12738 Block, Form, Clamp Gang Lines, Missile Tubing; April 10, 1961

WF-12739 Fixture - Welding, LOX Inlet Manifold Heat Exchanger; May 11, 1961

AF-12750 Fixture - Assembly, Suction Line Bracket Assembly, May 24, 1961

DF-12752 Fixture - Drill, Nose Cone; May 22, 1961

WF-12755 Fixture - Weld, Support Assembly, Discrete Measurements, 70-Inch Tanks; May 24, 1961

HF-12760 H-1 Engine Holding and Handling Fixture; May 17, 1961 and August 15, 1961

MiT-12761 Load Test Procedure, Engine Handling Portable Gantry; November 15, 1961

WF-12765 Fixture - Weld, Flexible Hose Assembly, Heat Exchanger Supply Line; June 26, 1961

EWF-13339 Bulkhead Test Weld Station (EWF-13339) and Associated Equipment; October 2, 1961; December 29, 1961

WF-10403767 Fixture - Weld, Outboard Engine, GOX Line Assembly, 1.5" Diameter

RT-10410089 Template - Router, Arm, Suction Line Support, Missile Tubing; March 1, 1961

WF-10410838 Fixture - Weld, Mounting Weldment, Q-Ball (Nose Cone); June 27, 1961

DJ-10411182 Jig - Drill, Stiffener, Retro-Rocket, 2nd Stage Adapter; April 24, 1961 and May 22, 1961

DP-10411184 Plate - Drill; April 27, 1961

DP-10411186 Plate - Drill; April 27, 1961

DP-10411194 Plate - Drill; May 5, 1961

DP-10411195 Plate - Drill, Fitting, 2nd Stage Adapter, Sta. 889.304; June 24, 1961

AT-10413034 Tool - Assembly, Flowmeter, Fuel and LOX Tanks; April 20, 1961

HB-10413861 Block - Hydroform, Bracket, High Pressure Sphere, Major Assembly, April 17, 1961

WF-10416107 Fixture - Weld, Sensor Tube Weldment, Oxidizer Tank, 105" Diameter; April 17, 1961

DF-10416170 Fixture - Drill, Compression Member Assembly at Fin II and IV, 2nd Stage Adapter; June 30, 1961

DJ-10416260 Jig - Drill, Fitting, Truss Sta. 979.304; April 20, 1961

DT-10416299 Template - Drill, "Z" Ring Frame Profile, 70" Tanks; March 15, 1961

P&HF-10416505 Fixture - Positioning & Holding, Stiffener, (Tail Section); April 27, 1961

AF-10417530 SATURN Canister Subassembly Station 891.054 to 902.084 and Final Assembly, Assembly Fixture; August 21, 1961

SAF-10417530 Fixture - Assembly, SATURN Canister Subassembly, (Long Section), Sta. 902.084 to 947.803; July 26, 1961

DP-10417608 Plate - Drill, Bracket Assembly, No. 12 Canister; June 28, 1961

DP-10417609 Plate - Drill, Bracket Assembly, Canister Assembly, Canister No. 12; June 28, 1961

AF-10440400 Fixture - Assembly, 5th Stage Adapter; January 6, 1961

SAF-10440400 Fixture - Subassembly, "Z" Ring, 5th Stage Adapter; January 6, 1961

RF-10440423 Fixture - Router, Segment, Conical Skin, 5th Stage Adapter; June 6, 1961

AF-10440480 Fixture - Assembly, Catwalk Frame Assembly, 5th Stage Adapter; April 20, 1961

WF-10481740 Fixture - Weld, Manifold, Cold Air Outlet, Missile Tubing; April 6, 1961

DJ-10491013-1 Jig - Drill; May 10, 1961

DJ-10491014-1 Jig - Drill; May 10, 1961

DJ-10491015-1 Jig - Drill; May 10, 1961

SA-5 through SA-10

AF1-303-02006 Inboard Shear Box Assembly Left and Right Panels Assembly Fix; October 23, 1961

AF2-303-02006 Inboard Shear Box Assembly Fixture; October 23, 1961

AF1-303-02007 Shear Box Assembly Outboard Left and Right Panels Assembly Fixiture; November 24, 1961

AF2-303-02007 Outboard Shear Box Assembly Fixture; December 18, 1961

STA-395-2005 Upper and Lower Thrust Ring Assembly Station; December 27, 1961

AF-303-02001 Barrel Assembly Fixture; February 20, 1962

AF-303-02008 Ring, Center and Tee Ring Assembly Fixture; February 9, 1962

RDF-303-02010 Skin Assembly Router Frill Fixture; February 26, 1962

ADF-303-02167 Support Assembly Tee Drill Fixture; February 9, 1962

ADF-303-02160 Support Assembly Drill Fixture; February 9, 1962

AF1-356-02051 Shear Panel Assembly Side A Assembly Fixture; November 30, 1961

AF-356-02050 Fin Support Outrigger Assembly Fixture; February 5, 1962

AF-356-02052 Shear Panel Assembly Side B Assembly Fixture; January 31, 1962

AF-356-02072 Fin Support Outrigger Support Beam Assembly Fixture; March 9, 1962

AF-304-02100 Thrust and Support Outrigger Assembly Fixture; February 5, 1962

AF-304-02101 Thrust Outrigger Shear Panel Assembly, Side C; January 12, 1962

ADF1-304-02110 and ADF2-303-02110 Thrust Beam Assembly Fixture; February 20, 1962

AF1-304-02102 Shear Panel Assembly - Side D Assembly Fixture; January 31, 1962

ADF-304-02116 Outer Web Assembly Fixture; February 9, 1962

ADF-304-02112 Web Assembly - Thrust Beam Inner; February 1, 1962

STA-395-2017 and AF-303-02000 Thrust Structure Assembly Fixture Station 1; May 25, 1962

DJ-357-03010 and DJ-356-02050 Drill Jig and Fin to Outrigger; March 27, 1962

ADF-303-02180 Upper Ring Segment Assembly Fixture; February 6, 1962

ADF-303-02184 Lower Ring Segment Assembly Fixture; February 6, 1962

AF-321-00402 Main Spider Beam Assembly Fixture; July 27, 1962

SAF-321-00404 2nd Stage Adapter Radial Beam Fixture; March 21, 1962

AF-325-00401-1 and AF-325-00401-2 45° Shroud Assembly Fixture; March 21, 1962

AF-325-00408-1 45° Shroud Assembly Fixture; March 19, 1962

AF-325-00409-1 and AF-325-00409-2 45° Shroud Assembly Fixture; March 19, 1962

DP-320-00500 and DP-320-00403 For 2nd Stage Adapter; March 22, 1962

AF-325-00482 (2nd Stage Adapter) Shear Panel Assembly Fixture; February 1, 1962

AF1-378-05000 Instrument Container "154" Assembly Fixture; May 21, 1962

SAF1-378-05000 Instrument Container 40" Tube Assembly; March 30, 1962

SAF2-378-05000 Instrument Container 40" Tube Assembly

AF-496-3000 Main Cluster Assembly Fixture; June 25, 1962

EAF-496-3000 SATURN Fixture Electrical Installation; November 13, 1961

Preparation of Tool Instructions; August 15, 1961 and December 20, 1961

Tool Design Manual, Mechanical Drawings; April 6, 1962

DJ-12615 S-I to S-4 Stage Adapter Drill Jig; April 13, 1962

AFA-415-00000 105-Inch Diameter Oxidizer Tank, Assembly Fixture Accessory; May 22, 1962

FD440-50811 Form Die, Engine Drain Line Bracket; May 25, 1962

AF-1-400-10537 Engine Flight Purge System Assembly Fixture; May 25, 1962

STA-395-2017 Thrust Structure Assembly, Assembly Station No. 1; May 25, 1962

ADF-480-29900 Retro-Rocket Cover Assembly; May 29, 1962

P&HF-480-10003 Fuel Pressure System; June 5, 1962

WF-440-85036 Hydraulic Panel Frame Assembly; June 5, 1962

DJ-495-0063 Sleeve Assembly Drill Jig; May 25, 1962

MiT-415-00000 105" - Oxidizer Tank Assembly Heater Blanket; June 25, 1962

WF-1-478-40126 154" Instrument Container Outer Sheel Weld Fixture

P&HF-445-03020 Upper Flange Elbow Assembly, July 18, 1962

CKF-12502 Power Unit Assembly 1.5 Gimbal Joint Check Fixture; July 25, 1962

ADJ-440-03594,95,96, & 97 Assembly Drill Jig, Flame Curtain; July 20, 1962

Special Projects

Precision Positioning Control for Welding of SATURN Space Vehicles

Arc Variation Study, Internal Note; April 13, 1962

Dynamic Braking Motor Governor, Invention Disclosure; February 20, 1962

Research Effort Pertaining to Aluminum Rib Detection, Internal Note; January 15, 1962

Metal-Inert-Gas (MIG) Spot Welder; Redesign

Alignment Position Indicator for AF-1-302-02000; March 16, 1962

Governor Servo Control Unit; February 21, 1962

Controlled Arc Power Supply; July 24, 1961

Manual Heliarc Spot Welding Equipment Development; DFMT-IN-19-60; June 6, 1960

Timer Programmed Consummable Electrode Fusion Spotwelding Process (Variac); 4-GM-451230; January 1961 and December 15, 1961

Specification, Bridge Type Cranes for Use on North Gantry, SATURN Assembly Station No. 3; August 30 and September 18, 1961

STRUCTURAL MANUFACTURING PLANS
(Monthly Reports)

Saturn C-1:
SA-5 through SA-10

MP-1700 Barrell Assembly; October 27, 1961

MP-1701 Fin Outrigger; December 22, 1961

MP-1702 Thrust Outrigger; February 15, 1962

MP-1705 Tail Section Assembly Thrust Structure; March 15, April 26 and June 1, 1962

MP-1706 Spider Beam Assembly; January 2, 1962

MP-1708 45-Degree Shrouds; January 5, 1962

MP-1709 2nd Stage Adapter; April 13, 1962

MP-1710 154" Instrument Container; April 9 and May 21, 1962

Saturn C-5:

Initial Manufacturing Plan for SATURN C-5 Booster Stage S-IC; July 5, 1962

Initial Manufacturing Plan for SATURN C-5 Booster Stage S-IC Thrust Structure; July 25, 1962

Special Projects:

Advanced Vehicle Technology Report on Large Elliptical Bulkhead Fabrication; December 21, 1960

Advantages and Disadvantages in Fabrication of Cylindrical and Multi-Cell Containers; September 11, 1961

Advantages and Disadvantages in Horizontal Assembly of Cylindrical and Multi-Cell Containers; September 11, 1961

Advantages and Disadvantages in Vertical Assembly of Cylindrical and Multi-Cell Containers; September 11, 1961

Manufacturing Proposal, SA-5 Large Fin Assembly 30M03010; August 25, 1961

Manufacturing Proposal, SA-5 Tail Section Assembly; September 21, 1961

Manufacturing Study, Large Single Cylinder Booster; June 17, 1961

FACILITIES

George C. Marshall Space Flight Center Fiscal Year 1962 Facilities Estimates - Test Division; December 1, 1960 (U)

Support of Plant Construction, Alteration, and Repair Projects Test Division; January 23, 1961; (U)

TECHNICAL STUDIES ON RESEARCH PROJECTS

RP-1001 Development of Tooling Principle and Welding Technique for Large Diameter Tanks, MTP-F&AE-60-13 (U)

RP-1002 Forming Tubing, M-F&AE-MTP-61-04 (U)

RP-1003 Development of Technique for Improving Joint Efficiency

The Effect of Pressure Rolling Joints in 5456 Aluminum Alloys at 400°F. M-F&AE-MTP-61-02 (U)

Working of Aluminum Welds, M-F&AE-MTP-60-07 (U)

Preliminary Study to Determine the Amount of Misfit Acceptable in Stainless Steel Welding Joints, DFR-TN-04-60 (U)

RP-1004 Development of Welding Arc Guidance Systems

Second Status Report - Seam Tracker Development (DFE-IN-16-60 (U)

Status Report - Seam Tracker Development DFE-IN-42-59(U)

RE-1005 Weld Technique Development

Investigation of Shrinkage in an Aluminum Girth Weld DFR-IN-49-59 (U)

Effects of Chlorine Additions on Aluminum-Magnesium Fusion Welds, DFR-TN-06-59 (U)

RP-1006 Evaluation of Fabricability of New Materials

A-286 Stainless Steel Alloy, M-F&AE-MTP-60-09 (U)

Mechanical Fasteners in Spacemetal, M-F&AE-MTP-60-06 (U)

Fusion Welding Type 201 Stainless Steel in the Strain Hardened Condition, M-F&AE-MTP-04-60 (U)

Effect of Surface Preparation and Argon Purge Method on Heat Treating of Type 321 Stainless Steel, M-F&AE-MTP-02-60 (U)

Heat Treating of Type 17-7 PH Precipitation Hardenable Stainless Steel, M-F&AE-M-01-60 (U)

Environmental and Passivation Tests with Precipitation Hardening Stainless Steels, DFR-IN-24-60 (U)

Fabrication Techniques for Type 410 Stainless Steel, DFR-IN-22-60 (U)

Preliminary Investigation of the Properties of AM-350 and AM-355 Stainless Steel, DFR-IN-21-60 (U)

Preliminary Investigation of the Properties of Type 17-7 PH Stainless Steel, DFR-IN-17-60 (U)

Welding of Magnesium Alloys, DFR-IN-11-60 (U)

Preliminary Review of Type 410 Stainless Steel, DFR-IN-09-60 (U)

Fabrication of "Spacemetal" Sandwich Material, DFR-TN-05-60 (U)

Fabricating ZE10A H24 Magnesium Alloy, DFR-TN-03-59 (U)

Forming of PH 15-7 Mo Stainless Steel, DFR-IN-29-59 (U)

RP-1008 Explosive Forming Technique Development

Forming at High Energy Rates, DFR-IN-33-59 (U)

State-of-the-Art of High Energy Forming, DFR-TM-02-60 (U)

RP-1009 Quality and Technique Improvement for Shear-Spun Parts

Status Report on Metal Spinning Processes, DFR-TM-03-60 (U)

Correlation of Mechanical Properties Derived by Power Spinning and Rolling

RP-1010 Development of Basic Weld Tooling Criteria

A Preliminary Investigation of the Influence of Tooling in Welding Strain-Hardened Aluminum Alloys, DFR-TN-02-60 (U)

Increase of Weld Joint Efficiency in Strain-Hardening Aluminum Alloys, DFR-TN-03-60 (U)

Tool and Fixture Models in Tool Engineering, DFR-IN-19-59 (U)

RP-1011 Ultrasonic Weld Technique Development, Status Report #1, DFR-IN-13-59 (U)

RP-1015 Preliminary Evaluation of the Electric Discharge Forming System, M-F&AE-MTP-60-08 (U)

RP-1022 Tests on Flared Tube Connection Joints, DFR-TN-01-60 (U)

RP-1024 Electron Beam as a Fabrication Process, DFR-TN -08-59

TESTS
STRUCTURAL DESIGN

Test Program on Development of a Heat Exchanger for the 165K SATURN Engine, DT-TN-55-59; Lane, S., December 9, 1959

Flow Regulator Evaluation Test; Folk, Craig L., January 13, 1960; ABMA Systems Support Equipment Lab (U)

Qualification Tests of LOX Replenishing Valve, Dwg. #10414003 (Hydromatics, Inc., Part #131K6), Marks, Loyd B., March 9, 1960, ABMA (U)

Proposed Test Facility for Ground Test of Space Support Equipment; March 9, 1960; ABMA Systems Support Equipment Lab (U)

Development of a Facility for an Investigation of the Base Flow of a Clustered Motor Configuration; Owens, Robert W., March 21, 1960; ABMA AERO Lab (U)

SATURN Destruction Test; Rudder, Elbert; May 6, 1960; ABMA S&M Lab (U)

Design, Installation and Load Test of Missile Holddown Hardware for the SATURN Modification to the Static Test Tower; DT-TN-15-60; Hoover, A.; May 6, 1960 (U)

Hydraulic Flow Regulator Evaluation Test; Greer, Aubrey T., May 12, 1960; ABMA Support Equipment Lab (U)

Preliminary Tests on Engineering Materials for Tail Heating Protection; King, Harry M., Seltzinger, Vaughn F; May 18, 1960; ABMA S&M Lab (U)

The Effects of Lubricants on Performance of the H-1 Gas Generator Control Valve, DT-TN-16-60; Pohl, H., May 20, 1960 (U)

Construction Plans for Dynamic Test Facility; May 1960; Corps of Engineers (U)

SATURN Model Deflector Studies, DT-TN-18-60; Verschoore, C., June 23, 1960 (U)

Design, Fabrication and Installation of Fire Control System, SATURN Buildup, Static Test Tower East, Internal Note-TEST-1-61; Marsalis, W.; July 14, 1960 (U)

Investigation of Possible Contamination of the H-1 Turbopumps in the SATURN Booster as a Result of Insufficient Drainage of Preservative Oil; Internal Note TEST-2-61; Dawley, A., July 29, 1960 (U)

Structural Test Conducted on SA-T Booster in Static Test Tower, MM-M-S&M-S-1-60; July 29, 1960

Load Investigation of the SATURN C-1 and C-2 Vehicles Subjected to Wind During Assembly on the Launch Pad, MM-M-S&M-S-2-60; August 1, 1960 (C)

Static Load Test of a 70-Inch SATURN Outer LOX Tank, MM-M-S&M-S-4-60; September 6, 1960

Investigation of the Measuring Accuracy of the SATURN Main Flow Meters, Internal Note-TEST-6-61; McElroy, C., October 10, 1960 (U)

Structural Test on SATURN Suction Line Support Assembly, MTP-M-S&M-M-60-5; October 14, 1960

SATURN Short Cable Mast Retraction Time Tests, MTP-M-TEST-60-6; Bowman, C.; December 1, 1960 (U)

(AEROBALLISTICS)

Wind Tunnel Investigation of the Effects of Increased Upper Stage Diameter on the Static Longitudinal Stability and Drag Characteristics of a Preliminary SATURN Configuration; Andrews, C. Dale; February 5, 1960, 26p; ABMA AERO Lab (C)

Static Stability and Axial-Force Characteristics of Two Configurations of the SATURN Vehicle at Transonic Speeds; Johnson, B. H. and Rittenhouse, L. E.; August 1960, 21p; Arnold Engineering Development Center (C)

Some Summary Results of a SATURN Base Heating Investigation Conducted in the NASA Langley 8 x 6-foot Supersonic Wind Tunnel; Few, A. G., September 15, 1960; MTP-AERO-1-60

Wind Tunnel Investigations of Forces and Moments of Four Configurations of the SATURN Vehicle at Transonic Speeds; Nichols, J. H., October 1960, 34p., Arnold Engineering Development Center (C)

(FLIGHT EVALUATION)

SATURN SA-1 Flight Evaluation, MPR-SAT-WF-61-8 (Supp.) March 30, 1962 (C)

SATURN SA-1 Flight Evaluation, MPR-SAT-WF-61-8; December 14, 1961 (C)

MISCELLANEOUS

MTP-P&VE-P-61-24 Laminar Condensation in and Around a Long Horizontal Container in Space; December 20, 1961; Liu, Dr. C. K. (U)

MTP-P&VE-M-62-4 An Apparatus for the Measurement of the Total Normal Emmitance of Surfaces at Low Temps; February 23; Zerlaut, Gene A. (U)

NASA TM-X-776 Pressure Switches for High Vibration Applications on Launch and Space Vehicles; Melton, Darrell E. (U)

AUTHOR INDEX

INDEX OF

COMPANIES

BIBLIOGRAPHY

of the

SATURN System

PREPARED BY: Truman E. McClard
Truman E. McClard

SUBMITTED BY: Richard J. Stein
Richard J. Stein

APPROVED BY: for Oswald H. Lange
Director, SATURN Systems Office

DISTRIBUTION:

"D" Branch Level

"G" All Divisions and Offices