Nova and other heavy lift concepts − PDF files

Source: http://sci.tech−archive.net/Archive/sci.space.history/2006−08/msg00883.html

- *From*: "Rusty" <reuben_barton@xxxxxxxxx>
- *Date*: 12 Aug 2006 01:28:59 −0700

The first two PDF files are not about heavy lift launchers. The first is a monograph about the history of NASA KSC up to July 1, 1962 (I know, it wasn't KSC yet). The second PDF is a 1964 study about the all up testing concept for the Saturn V.

The remainder of the PDF files are about Nova and other heavy lift concepts.

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KSC Historical Monograph: Origins of nasa's launch operations center to july 1, 1962

Jarrett, F. E., Jr.; Lindemann, R. A.
NASA Center for AeroSpace Information (CASI)
NASA−TM−X−54991; KHM−1 , 19641001; Oct 1, 1964
Historical origins of NASA Launch Operations Center to July 1, 1962
Accession ID: 65N16348
Document ID: 19650006747

http://ntrs.nasa.gov/archive/nasa/casi.ntrs.nasa.gov/19650006747_1965006747.pdf

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The reliability of the All−Up concept Special technical report no. 13

Jackson, T. T.; Tinkelenberg, A. D.; Van Tijn, D.NASA Center for AeroSpace Information (CASI) NASA−CR−79732; PUBL.−294−02−12−440 , 19640615; Jun 15, 1964
Implementation approaches for conducting Saturn V launch vehicle program without
dummy stages
Accession ID: 67N12931
View PDF File
Document ID: 19670003602

http://ntrs.nasa.gov/archive/nasa/casi.ntrs.nasa.gov/19670003602_1967003602.pdf

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Future studies branch activities report, fiscal year 1963

Poppel, T. A.; Von Tiesenhausen, G.
NASA Center for AeroSpace Information (CASI)
NASA−TM−X−51925; TR−4−17−3−D , 19630819; Aug 19, 1963
Space vehicle launch operations − research, communications, and computer
programming Early Saturn, Nova, Orbital tanker, manned lunar rover illustrations.
Accession ID: 64N29523
Document ID: 19640019609

http://ntrs.nasa.gov/archive/nasa/casi.ntrs.nasa.gov/19640019609_1964019609.pdf

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Solid−boosted Nova vehicle study. Volume III − Current−technology vehicle Final
report

NASA Center for AeroSpace Information (CASI)
NASA−CR−50591; D2−22431, VOL. III , 19630401; Apr 1, 1963
Structures and weight, environment and control, design configuration, and payload
growth of Current−Technology Vehicle /T−65/ − Nova launch vehicle
Accession ID: 66N22223
Document ID: 19660012934

http://ntrs.nasa.gov/archive/nasa/casi.ntrs.nasa.gov/19660012934_1966012934.pdf

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Project Apollo − A description of a Saturn C−3 and Nova vehicle
Smith, R. P.
NASA Center for AeroSpace Information (CASI)
NASA−TM−X−66777 , 19610725; Jul 25, 1961

Accession ID: 79N76276
Document ID: 19790076768

http://ntrs.nasa.gov/archive/nasa/casi.ntrs.nasa.gov/19790076768_1979076768.pdf

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Evaluation of the JPL proposal for a large four stage solid rocket Nova vehicle for
manned lunar landing, volume ii technical addendum

NASA Center for AeroSpace Information (CASI)

NASA−CR−81089; STL−8632−0001−RC−V02 , 19610915; Sep 15, 1961

Accession ID: 79N76251
Document ID: 19790076743

http://ntrs.nasa.gov/archive/nasa/casi.ntrs.nasa.gov/19790076743_1979076743.pdf

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An all−solid−propellant Nova injection vehicle system for the direct−ascent Man−on−Moon Project

NASA Center for AeroSpace Information (CASI)
NASA−CR−55010; JPL−TM−33−52−PT−2 , 19620124; Jan 24, 1962

Accession ID: 74N70140
Document ID: 19740072201

http://ntrs.nasa.gov/archive/nasa/casi.ntrs.nasa.gov/19740072201_1974072201.pdf

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Some interrelationships and long range implications of C−3 lunar rendezvous and solid Nova vehicle concepts

NASA Center for AeroSpace Information (CASI)
NASA−CR−136549; JPL−TM−33−52−ADD−B , 19611002; Oct 2, 1961

Accession ID: 74N70458
Document ID: 19740072519

http://ntrs.nasa.gov/archive/nasa/casi.ntrs.nasa.gov/19740072519_1974072519.pdf

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Payload, cost and reliability analysis of Saturn C−5 and NOVA with NERVA or chemical third stages

NASA Center for AeroSpace Information (CASI)
NASA−CR−147060; AGC−2279 , 19620601; Jun 1, 1962

Accession ID: 76N73970
Document ID: 19760068929

http://ntrs.nasa.gov/archive/nasa/casi.ntrs.nasa.gov/19760068929_1976068929.pdf

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Solid−boosted nova vehicle system study. Volume 4: Operations, manufacturing and
facilities; reliability and development plan; advanced technology and costing and
funding

NASA Center for AeroSpace Information (CASI)
NASA−CR−183284; NAS 1.26:183284; D2−22431−VOL−4 , 19630401; Apr 1, 1963

Accession ID: 89N71071
Document ID: 19890068698

http://ntrs.nasa.gov/archive/nasa/casi.ntrs.nasa.gov/19890068698_1989068698.pdf

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Solid−boosted Nova vehicle study. Volume III − Current−technology vehicle Final
report

NASA Center for AeroSpace Information (CASI)
NASA−CR−50591; D2−22431, VOL. III , 19630401; Apr 1, 1963
Structures and weight, environment and control, design configuration, and payload
growth of Current−Technology Vehicle /T−65/ − Nova launch vehicle
Accession ID: 66N22223
Document ID: 19660012934

http://ntrs.nasa.gov/archive/nasa/casi.ntrs.nasa.gov/19660012934_1966012934.pdf

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Sea Dragon concept. Volume 1: Summary

NASA Center for AeroSpace Information (CASI)
NASA−CR−52817; NAS 1.26:52817; LRP−297−VOL−1 , 19630128; Jan 28, 1963

Accession ID: 88N71080
Document ID: 19880069339

http://ntrs.nasa.gov/archive/nasa/casi.ntrs.nasa.gov/19880069339_1988069339.pdf

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Sea Dragon concept, volume 3

NASA Center for AeroSpace Information (CASI)
NASA−CR−51034; NAS 1.26:51034; LRP−297−VOL−3 , 19630212; Feb 12, 1963

Accession ID: 88N71081
Document ID: 19880069340

http://ntrs.nasa.gov/archive/nasa/casi.ntrs.nasa.gov/19880069340_1988069340.pdf

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Post−saturn launch vehicle study /part ii/ condensed summary report
Huber, N. G.
NASA Center for AeroSpace Information (CASI)
NASA−TM−X−53010 , 19640410; Apr 10, 1964
Post−saturn launch vehicle concepts and technology − nova rocket
Accession ID: 64N22479
Document ID: 19640012565

http://ntrs.nasa.gov/archive/nasa/casi.ntrs.nasa.gov/19640012565_1964012565.pdf

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Advanced post−saturn earth launch vehicle study executive summary report
Sanders, J. L.
NASA Center for AeroSpace Information (CASI)
NASA−TM−X−53200 , 19650203; Feb 3, 1965
Advanced post−Saturn earth launch vehicle design and chemonuclear propulsion system

performance
Accession ID: 65N17542
Document ID: 19650007941

http://ntrs.nasa.gov/archive/nasa/casi.ntrs.nasa.gov/19650007941_1965007941.pdf

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Modified launch vehicle /mlv/ saturn v improvement study composite summary report

NASA Center for AeroSpace Information (CASI)
NASA−TM−X−53252 , 19650702; Jul 2, 1965
Modifications on S−IC, S−II, and S−IVB stages of Saturn V launch vehicle
Accession ID: 65N29682
Document ID: 19650020081

http://ntrs.nasa.gov/archive/nasa/casi.ntrs.nasa.gov/19650020081_1965020081.pdf

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A concept for handling and launching large solid rockets

Craft, G. W.; Starkey, A. W.
NASA Center for AeroSpace Information (CASI)

NASA−CR−79885; TR−66−330−2 , 19660930; Sep 30, 1966
Dock concept for handling and launching large solid rocket engines applied to Saturn
IB−5A launch vehicle
Accession ID: 79N72580
View PDF File
Document ID: 19790073072

http://ntrs.nasa.gov/archive/nasa/casi.ntrs.nasa.gov/19790073072_1979073072.pdf

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Cost studies of Multipurpose Large Launch Vehicles. Volume 2 − Half size vehicle

/MLLV/ conceptual design Final report
Corso, C. J.
NASA Center for AeroSpace Information (CASI)
NASA−CR−73329; D5−13463−2 , 19690915; Sep 15, 1969
Conceptual design of half−size multipurpose large launch vehicle with liquid
propellant main and injection stages and solid propellant strap−on stage
Accession ID: 69N39577
Document ID: 19690030192

http://ntrs.nasa.gov/archive/nasa/casi.ntrs.nasa.gov/19690030192_1969030192.pdf

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Saturn 5 launch vehicle flight evaluation report, SA−513, Skylab 1

NASA Center for AeroSpace Information (CASI)
NASA−TM−X−69537; MPR−SAT−FE−73−4 , 19730801; Aug 1, 1973
Saturn V SA−513 (Skylab−1) was launched at 13:30:00 Eastern Daylight Time (EDT) on
May 14, 1973, from Kennedy Space Center, Complex 39, Pad A. The vehicle lifted off
on a launch azimuth of 90 degrees east of north and rolled to a flight azimuth of
40.88 degrees east of north. The launch vehicle successfully placed the Saturn Work
Shop in the planned earth orbit. All launch vehicle objectives were accomplished. No

launch vehicle failures or anomalies occurred that seriously affected the mission.
Accession ID: 73N33848
Document ID: 19730025115

http://ntrs.nasa.gov/archive/nasa/casi.ntrs.nasa.gov/19730025115_1973025115.pdf

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Space station heavy lift launch vehicle utilization

Deryder, L. J.
NASA Center for AeroSpace Information (CASI)
NASA−TM−100604; NAS 1.15:100604 , 19880401; Apr 1, 1988
The use of Heavy Lift Launch Vehicles (HLLVs) for Space Station assembly, logistics.
and resupply is explored. Potential HLLVs, including those based on the Titan, and
Shuttle−derived vehicles (SDV), are discussed. The baseline Critical Evaluation Task
Force (CETF) Space Station assembly sequence is described and compared with assembly

options made possible through the use of HLLVs.
Accession ID: 88N21188
Document ID: 19880011804

http://ntrs.nasa.gov/archive/nasa/casi.ntrs.nasa.gov/19880011804_1988011804.pdf

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Advanced Transportation System Studies Technical Area 2 (TA−2) Heavy Lift Launch

Vehicle Development Contract; Volume 2; Technical Results
NASA Center for AeroSpace Information (CASI)
NASA−CR−201127−Vol−2; NAS 1.26:201127−Vol−2; LMSC−P038190−Vol−2 , 19950701; Jul.
1995 The sections in this report include: Single Stage to Orbit (SSTO) Design Ground−
rules; Operations Issues and Lessons Learned; Vertical−Takeoff/Landing Versus
Vertical−Takeoff/Horizontal−Landing; SSTO Design Results; SSTO Simulation Results;
SSTO Assessment Results; SSTO Sizing Tool User's Guide; SSto Turnaround Assessment
Report; Ground Operations Assessment First Year Executive Summary; Health Management
System Definition Study; Major TA−2 Presentations; First Lunar Outpost Heavy Lift
Launch Vehicle Design and Assessment; and the section, Russian Propulsion Technology

Assessment Reports.
Accession ID: 96N31778
Document ID: 19960042873

http://ntrs.nasa.gov/archive/nasa/casi.ntrs.nasa.gov/19960042873_1996058486.pdf

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Advanced transportation system studies. Technical area 2: Heavy lift launch vehicle
development; Volume 2; Technical Results

NASA Center for AeroSpace Information (CASI)
NASA−CR−201126; NAS 1.26:201126; LMSC−P038190 , 19950701; Jul. 1995
Sections 10 to 13 of the Advanced Transportation System Studies final report are included in this volume. Section 10 contains a copy of an executive summary that was prepared by Lockheed Space Operations Company (LSOC) to document their support to the TA−2 contract during the first−year period of performance of the contract, May 1992 through May 1993. LSOC participated on the TA−2 contract as part of the concurrent engineering launch system definition team, and provided outstanding heavy lift launch vehicle (HLLV) ground operations requirements and concept assessments for Lockheed Missiles and Space Company (LMSC) through an intercompany work transfer as well as providing specific HLLV ground operations assessments at the direction of NASA KSC through KSC funding that was routed to the TA−2 contract. Section 11 contains a copy of a vehicle−independent, launch system health management requirements assessment. The purpose of the assessment was to define both health management requirements and the associated interfaces between a generic advanced transportation system launch vehicle and all related elements of the entire transportation system, including the ground segment. Section 12 presents the major TA−2 presentations provided to summarize the significant results and conclusions that were developed over the course of the contract. Finally, Section 13 presents the design and assessment report on the first lunar outpost heavy lift launch

vehicle.
Accession ID: 96N31153
Document ID: 19960041001

http://ntrs.nasa.gov/archive/nasa/casi.ntrs.nasa.gov/19960041001_1996058481.pdf

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Advanced transportation system studies technical area 2 (TA−2): Heavy lift launch
vehicle development; volume 3; Program Cost estimates

McCurry, J. B.

NASA Center for AeroSpace Information (CASI)
NASA−CR−201128; NAS 1.26:201128; LMSC P038190 , 19950701; Jul. 1995
The purpose of the TA−2 contract was to provide advanced launch vehicle concept definition and analysis to assist NASA in the identification of future launch vehicle requirements. Contracted analysis activities included vehicle sizing and performance analysis, subsystem concept definition, propulsion subsystem definition (foreign and domestic), ground operations and facilities analysis, and life cycle cost estimation. The basic period of performance of the TA−2 contract was from May 1992 through May 1993. No−cost extensions were exercised on the contract from June 1993 through July 1995. This document is part of the final report for the TA−2 contract. The final report consists of three volumes: Volume 1 is the Executive Summary, Volume 2 is Technical Results, and Volume 3 is Program Cost Estimates. The document−at−hand, Volume 3, provides a work breakdown structure dictionary, user's guide for the parametric life cycle cost estimation tool, and final report developed by ECON, Inc., under subcontract to Lockheed Martin on TA−2 for the analysis of

heavy lift launch vehicle concepts.
Accession ID: 96N29574
Document ID: 19960028975

http://ntrs.nasa.gov/archive/nasa/casi.ntrs.nasa.gov/19960028975_1996058479.pdf

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Advanced transportation system studies technical area 2(TA−2): Heavy lift launch vehicle development; volume 1; Executive summary

McCurry, J.
NASA Center for AeroSpace Information (CASI)
NASA−CR−201124; NAS 1.26:201124; LMSC PC308190 , 19950701; Jul. 1995
The purpose of the TA−2 contract was to provide advanced launch vehicle concept definition and analysis to assist NASA in the identification of future launch vehicle requirements. Contracted analysis activities included vehicle sizing and performance analysis, subsystem concept definition, propulsion

subsystem definition
(foreign and domestic), ground operations and facilities analysis, and life cycle
cost estimation. This document is part of the final report for the TA−2 contract.
The final report consists of three volumes: Volume 1 is the Executive Summary,
Volume 2 is Technical Results, and Volume 3 is Program Cost Estimates. The document
−at−hand, Volume 1, provides a summary description of the technical activities that
were performed over the entire contract duration, covering three distinct launch
vehicle definition activities: heavy−lift (300,000 pounds injected mass to low Earth
orbit) launch vehicles for the First Lunar Outpost (FLO), medium−lift (50,000−80,000
pounds injected mass to low Earth orbit) launch vehicles, and single−stage−to−orbit
(SSTO) launch vehicles (25,000 pounds injected mass to a Space Station orbit).
Accession ID: 96N29571
Document ID: 19960028972

http://ntrs.nasa.gov/archive/nasa/casi.ntrs.nasa.gov/19960028972_1996058483.pdf

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Advanced Transportation System Studies Technical Area 2 (TA−2) Heavy Lift Launch
Vehicle Development Contract; Volume 2; Technical Results

NASA Center for AeroSpace Information (CASI)
NASA−CR−201125−Vol−2; NAS 1.26:201125−Vol−2; LMSC−P038190 , 19950701; Jul. 1995
The purpose of the Advanced Transportation System Studies (ATSS) Technical Area 2
(TA−2) Heavy Lift Launch Vehicle Development contract was to provide advanced launch
vehicle concept definition and analysis to assist NASA in the identification of
future launch vehicle requirements. Contracted analysis activities included vehicle
sizing and performance analysis, subsystem concept definition, propulsion subsystem
definition (foreign and domestic), ground operations and facilities analysis, and
life cycle cost estimation. This document is Volume 2 of the final report for the
contract. It provides documentation of selected technical results from various TA−2

analysis activities, including a detailed narrative description of the SSTO concept
assessment results, a user's guide for the associated SSTO sizing tools, an SSTO
turnaround assessment report, an executive summary of the ground operations
assessments performed during the first year of the contract, a configuration−
independent vehicle health management system requirements report, a copy of all
major TA−2 contract presentations, a copy of the FLO launch vehicle final report,
and references to Pratt & Whitney's TA−2 sponsored final reports regarding the

identification of Russian main propulsion technologies.
Accession ID: 96N29100
Document ID: 19960027977

http://ntrs.nasa.gov/archive/nasa/casi.ntrs.nasa.gov/19960027977_1996058482.pdf

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