

**SHUTTLE SERIES****SHUTTLE/CENTAUR AND VANDENBERG LAUNCH SITE (VLS) DOCUMENTS**

This subseries contains materials outlining the integration of the Centaur upper stage vehicle as a shuttle "upper stage" to boost satellites into higher orbits, perform plane changes, and to provide escape energy for planetary probes. The Shuttle/Centaur integration never proceeded beyond the design phase. This subseries also contains materials related to the Vandenberg Launch Site (VLS). The VLS facility, based at Vandenberg Air Force Base in California, was to be a launch site for the shuttle on the West Coast. Its major purpose was launch capabilities for polar orbits of defense and research satellites, which are currently unavailable from Kennedy Space Center. Construction of the VLS was begun and almost completed by 1986, but the Challenger accident stopped production of the facility and the Air Force looked for other alternatives than the shuttle for its payloads. The documents in this collection were arranged chronologically, since they originally arrived in a haphazard order. As a result, the majority of the Shuttle/Centaur materials are found in boxes 1-4, since they date from 1980-1984. An interesting feature of this collection is that it contains STS 83-1036, Shuttle/Centaur Level II Critical Design Review. This nine book, sixteen volume document of January 16, 1984, is also the red line copy, with annotations written in red ink throughout. The majority of the VLS documents date from September to November of 1985, when three major meetings on this subject took place: 1) VLS Design Certification Review (DCR), Level II, September 5-6, 1985; 2) VLS DCR, Level II Delta, October 24, 1985; and 3) VLS DCR, Level I, November 22, 1985. The October 24, 1985 meeting materials were represented by triplicate copies in separate folders, one for Arnold Aldrich, manager of the STS program; one for Bert Jackson, who appears to have been associated with Rockwell; and one copy designated "unmarked copy." All three folders contained the exact same documents for this meeting. Mr. Jackson's copies were incorporated into the collection because they contain annotations done in purple marker. Mention must also be made concerning the document "The STS Program at Vandenberg" found in box 2, as an explanation of the VLS program. The collection ends with two folders containing photographs of demolition and construction work on the VLS project (98 and 121 photographs, respectively). Some of the photographs have comments appended on the front or back describing the picture. The construction photographs include a note from Jeff Geiger, WSMC historian, to Janet Kovacevich, JSC archivist, dated August 10, 1990. The provenance of these materials is unknown, although the photographs and perhaps some documents came from Mr. Geiger.

**Inventory**

<b>SubHeading:</b>	<b>Box Number: 1</b>	
	STS 81-0636 Shuttle/Centaur System Requirements Review Volume IV-Shuttle/Centaur Studies, Analyses and Miscellaneous Data	October 5, 1981
	Errata Changes to September 1981 Issue	October 21, 1981
	Shuttle/Centaur Functional Requirements Document (Centaur Support Structures (CSS))	November 19, 1981
	Shuttle/Centaur FRD Deployment Adapter FRR	November 19, 1981
	Shuttle/Centaur FRD: Propellant Level Indicating System (PLIS) and Propellant Utilization System (PU) (Centaur F)	January 31, 1982
	Centaur-in-Shuttle Integration Study/Final Report	March 28, 1980
	Shuttle Centaur Development and Production, Summary Network (blueprints)	March 4, 1981
	Centaur/Shuttle Panel Meeting Guidelines and Background Information/MOA with Lewis Research Center	August 6, 1981
	Review Material:Shuttle/Centaur System Requirements Review	August 1981
	Standard Requirements for Ground Support Equipment of Shuttle/Centaur, General Specification for	September 1, 1981
	Shuttle/Centaur Deviation Document	September 1, 1981
	Applicable Specifications and Documents for Shuttle/Centaur,	September 20, 1981

	Appendix A	
	Prime Item Development Specification for Centaur Airborne Support Equipment (CASE) of the STS Program, Part I of II	September 25, 1981
	Shuttle/Centaur Integrated Test Plan Revision A	September 1981
	Design Engineering Directorate Shuttle/Centaur Project Schedules	October 1, 1981
<b>SubHeading:</b>	<b>Box Number: 2</b>	
	Shuttle/Centaur Integrated Test Plan, Revision 3	June 15, 1982
	The STS Program at Vandenberg	August 19, 1982
	Shuttle/Centaur System Interface Requirements (SIR) Liquid Hydrogen System	November 24, 1982
	Shuttle/Centaur FRD: Propellant Tanks Fill/Drain and Dump System	November 30, 1982
	Shuttle/Centaur FDR: Purge System	March 1, 1983
	Electromagnetic Compatibility Control Plan for Shuttle/Centaur	March 15, 1983
	Shuttle Centaur Composite Adapters CDR	March 28, 1983
	Letter from Forrest S. McCartney concerning Readiness Review process for Vandenberg AFB	September 23, 1983
SHUTTLE/CENTAUR LEVEL II CRITICAL DESIGN REVIEW	STS 83-1036 Book 1 - Shuttle/Centaur Level II Baseline	January 16, 1984
<b>SubHeading:</b>	<b>Box Number: 3</b>	
SHUTTLE/CENTAUR LEVEL II CRITICAL DESIGN REVIEW	STS 83-1036 Book 2 - Avionics v. 1 - Orbiter/Centaur Cargo Element Avionics RDD	January 16, 1984
SHUTTLE/CENTAUR LEVEL II CRITICAL DESIGN REVIEW	STS 83-1036 Book 2 - Avionics v. 2 - Avionics Data	January 16, 1984
SHUTTLE/CENTAUR LEVEL II CRITICAL DESIGN REVIEW	STS 83-1036 Book 2 - Avionics v. 3 - Interface Schematics	January 16, 1984
SHUTTLE/CENTAUR LEVEL II CRITICAL DESIGN REVIEW	STS 83-1036 Book 3 - Integrated Fluids/Main Propulsion System v. 1 - Integrated Fluids Data	January 16, 1984
SHUTTLE/CENTAUR LEVEL II CRITICAL DESIGN REVIEW	STS 83-1036 Book 3 - Integrated Fluids/Main Propulsion System v. 2 - Dump System Requirements and Analysis	January 16, 1984
SHUTTLE/CENTAUR LEVEL II CRITICAL DESIGN REVIEW	STS 83-1036 Book 4 - Aero Venting	January 16, 1984
SHUTTLE/CENTAUR LEVEL II CRITICAL DESIGN REVIEW	STS 83-1036 Book 5 - Purge Vent and Hazardous Gas Detection Systems (Deliver at CDR)	January 16, 1984
SHUTTLE/CENTAUR LEVEL II CRITICAL DESIGN REVIEW	STS 83-1036 Book 6 - Flight Performance	January 16, 1984
SHUTTLE/CENTAUR LEVEL II CRITICAL DESIGN REVIEW	STS 83-1036 Book 6, Revision 1 - Flight Performance	January 16, 1984
SHUTTLE/CENTAUR LEVEL II CRITICAL DESIGN REVIEW	STS 83-1036 Book 7 - Test and Ground Operations	January 16, 1984
<b>SubHeading:</b>	<b>Box Number: 4</b>	
SHUTTLE/CENTAUR LEVEL II CRITICAL DESIGN REVIEW	STS 83-1036 Book 8 - Guidance, Navigation and Control	January 16, 1984
SHUTTLE/CENTAUR LEVEL II CRITICAL DESIGN REVIEW	STS 83-1036 Book 9 - System Interfaces v. 1 - ICD-2-1-1F001, Orbiter Vehicle/Centaur (Deliver at CDR)	January 16, 1984
SHUTTLE/CENTAUR LEVEL II CRITICAL DESIGN REVIEW	STS 83-1036 Book 9 - System Interfaces v. 2 - ICD-2-AF002, Orbiter/Centaur Ground System Interface (Deliver at CDR)	January 16, 1984

SHUTTLE/CENTAUR LEVEL II CRITICAL DESIGN REVIEW	STS 83-1036 Book 9 - System Interfaces v. 3 - Orbiter Modifications and Mission Kit Safety Analysis	January 16, 1984
SHUTTLE/CENTAUR LEVEL II CRITICAL DESIGN REVIEW	STS 83-1036 Book 9 - System Interfaces v. 4 - Miscellaneous System Data	January 16, 1984
SHUTTLE/CENTAUR LEVEL II CRITICAL DESIGN REVIEW	Materials for Level II DCR Board meeting	September 5-6, 1985
SHUTTLE/CENTAUR LEVEL II CRITICAL DESIGN REVIEW	VLS Design Certification Review, Level II	September 5-6, 1985
SHUTTLE/CENTAUR LEVEL II CRITICAL DESIGN REVIEW	VAFB Ground Support Equipment (GSE) Status Report	October 1, 1985
<b>SubHeading:</b>	<b>Box Number: 5</b>	
SHUTTLE/CENTAUR LEVEL II CRITICAL DESIGN REVIEW	Various Level II DCR Papers on VLS	October 10, 1985
SHUTTLE/CENTAUR LEVEL II CRITICAL DESIGN REVIEW	Level I Vandenberg Launch and Landing Site DCR (various materials)	October 21, 1985
SHUTTLE/CENTAUR LEVEL II CRITICAL DESIGN REVIEW	Level II Delta VLS DCR (with comments)	October 24, 1985
SHUTTLE/CENTAUR LEVEL II CRITICAL DESIGN REVIEW	Level II Delta DCR - VL & LS	October 24, 1985
SHUTTLE/CENTAUR LEVEL II CRITICAL DESIGN REVIEW	VLS Flight Software Design	October 24, 1985
SHUTTLE/CENTAUR LEVEL II CRITICAL DESIGN REVIEW	Solid Rocket Booster STS 62-A (FWC) DCR Level II Board Meeting	October 24, 1985
SHUTTLE/CENTAUR LEVEL II CRITICAL DESIGN REVIEW	Level II Delta DCR System Integration	October 24, 1985
SHUTTLE/CENTAUR LEVEL II CRITICAL DESIGN REVIEW	OV-103 (VLS/WTR)DCR Delta, Phase II	October 24, 1985
SHUTTLE/CENTAUR LEVEL II CRITICAL DESIGN REVIEW	VLS Design Certification Review System Review Launch Mount	October 24, 1985
SHUTTLE/CENTAUR LEVEL II CRITICAL DESIGN REVIEW	VLS Design Certification Review Level II Delta	October 24, 1985
SHUTTLE/CENTAUR LEVEL II CRITICAL DESIGN REVIEW	Vandenberg Launch & Landing Site sticker (on cover of Aldrich's VLS DCR Level II Delta book)	October 24, 1985
SHUTTLE/CENTAUR LEVEL II CRITICAL DESIGN REVIEW	Various Level II VLS DCR Action Items (Delta crossed out)	October 24, 1985
SHUTTLE/CENTAUR LEVEL II CRITICAL DESIGN REVIEW	Various documents, attendees, seating arrangements for Level II and Level I VLS DCR	October-November 1985
SHUTTLE/CENTAUR LEVEL II CRITICAL DESIGN REVIEW	Various Level II Delta DCR papers (with signatures)	October-November 1985
SHUTTLE/CENTAUR LEVEL II CRITICAL DESIGN REVIEW	Folder of Level II and Level I materials (Minutes, correspondence, action items, attendance lists)	October-December 1985
<b>SubHeading:</b>	<b>Box Number: 6</b>	
SHUTTLE/CENTAUR LEVEL II CRITICAL DESIGN REVIEW	Various Level II Delta VLS DCR Action Items	November 15, 1985
SHUTTLE/CENTAUR LEVEL II CRITICAL DESIGN REVIEW	Level I Dry Run on VLS DCR	November 15, 1985
SHUTTLE/CENTAUR LEVEL II CRITICAL DESIGN REVIEW	Vandenberg Launch Site (VLS) DCR Book 1 - Orbiter Certification Status	November 22, 1985
SHUTTLE/CENTAUR LEVEL II CRITICAL DESIGN REVIEW	Vandenberg Launch Site (VLS) DCR Book 2 - Orbiter Certification Statements	November 22, 1985
SHUTTLE/CENTAUR LEVEL II CRITICAL DESIGN REVIEW	Solid Rocket Booster STS 62-A (FWC) DCR Level I	November 22, 1985
SHUTTLE/CENTAUR LEVEL II CRITICAL DESIGN REVIEW	Level I VLS DCR - System Integration	November 22, 1985
SHUTTLE/CENTAUR LEVEL II CRITICAL DESIGN REVIEW	Level II SR&QA VLS DCR Briefing	November 22, 1985
SHUTTLE/CENTAUR LEVEL II CRITICAL DESIGN REVIEW	VLS DCR - System Review Launch Mount	November 22, 1985
SHUTTLE/CENTAUR LEVEL II	VLS DCR Level I	November 22, 1985

CRITICAL DESIGN REVIEW		
SHUTTLE/CENTAUR LEVEL II CRITICAL DESIGN REVIEW	Level I DCR - Vandenberg Launch and Landing Site	November 22, 1985
SHUTTLE/CENTAUR LEVEL II CRITICAL DESIGN REVIEW	Level II Action Items	November 1985
SHUTTLE/CENTAUR LEVEL II CRITICAL DESIGN REVIEW	Level I VLS DCR Action Items	December 6, 1985
SHUTTLE/CENTAUR LEVEL II CRITICAL DESIGN REVIEW	Various materials on Level II, Level I and Test Readiness Review (TRR) at VLS	December 1985 - August 19
SHUTTLE/CENTAUR LEVEL II CRITICAL DESIGN REVIEW	Western Space and Missile Center (WSMC) Vandenberg Air Force Base, California (picture book)	n/d
<b>SubHeading:</b>	<b>Box Number: 7</b>	
SHUTTLE/CENTAUR LEVEL II CRITICAL DESIGN REVIEW	Centaur/Shuttle FRD Liquid Hydrogen Ground Support Equipment	n/d
SHUTTLE/CENTAUR LEVEL II CRITICAL DESIGN REVIEW	Update JSC 07700, Volume 12, Rev. A	n/d
SHUTTLE/CENTAUR LEVEL II CRITICAL DESIGN REVIEW	Space Shuttle System, Weight and Performance Control, Appendix 10.12	n/d
SHUTTLE/CENTAUR LEVEL II CRITICAL DESIGN REVIEW	Shuttle/Centaur Integration Project Facility and Equipment Requirements Documentation, STS/Centaur Ground Support	n/d
SHUTTLE/CENTAUR LEVEL II CRITICAL DESIGN REVIEW	Demolition Work at Space Launch Complex 6 (SLC-6) in 1979 before construction work for Space Shuttle pad at Vandenberg AFB (98 photographs)	1979
SHUTTLE/CENTAUR LEVEL II CRITICAL DESIGN REVIEW	Note from Western Space and Missile Center (WSMC) historian and construction photographs (121)	1980-1981