

SHUTTLE SERIES
SHUTTLE CARRIER AIRCRAFT DOCUMENTS

These documents were collected by the Engineering Analysis Division, Aerodynamics Branch, which was the JSC group responsible for studying the Shuttle ferry concepts. The documents track the studies done by Boeing, Lockheed, Rockwell, JSC, Langley, & McDonnell Douglas which contributed to the choice of the modified Boeing 747 as the carrier of the Shuttle Orbiter for both ALT (Approach & Landing Tests) and ferry flights. The Boeing Reports are organized chronologically and followed by wind tunnel reports, Rockwell reports, and Lockheed reports. At the end of the run are miscellaneous subject files organized by folder dates and consisting of presentation material, correspondence, meeting minutes, and reports. The bulk of the documents were produced between 1974 and 1976.

Inventory

SubHeading:	Box Number: 01	
BOEING REPORTS	747 Space Shuttle Orbiter Piggyback, Preliminary Wind Tunnel Test Results and Performance Estimates	December 11, 1973
SubHeading:	Box Number: 01 *	
BOEING REPORTS	747 Piggyback Carrier for Space Shuttle Orbiter & External Tank Feasibility Study * This 469 page document has been scanned	March 15, 1974
BOEING REPORTS	SSO (Orbiter) Boilerplate Vehicle, Phase 1 Preliminary Design Contract Final Briefing to Rockwell * This 198 page document has been scanned	June 27, 1974
BOEING REPORTS	747 Space Shuttle Carrier Aircraft - External Tank Ferry Feasibility Study * This 149 page document has been scanned	August 15, 1974
SubHeading:	Box Number: 02	
BOEING REPORTS	Carrier Aircraft Modification (CAM) Simulation Plan	August 21, 1974
BOEING REPORTS	Preliminary Analysis Report of the CS5 Test of the 747 CAM with the Space Shuttle Orbiter in the Boeing 8 x 12 Foot Transonic Wind Tunnel	January 18, 1975
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BOEING REPORTS	Model 747 CAM (Carrier Aircraft Modification) Design Objectives and Criteria * This 45 page document has been scanned	August 23, 1974
BOEING REPORTS	747 CAM Program Review * This 202 page document has been scanned	August 28, 1974
BOEING REPORTS	Analysis of CA3 Low Speed Tests of Boeing 747 / Space Shuttle Orbiter and External Tank * This 84 page document has been scanned	October 7, 1974
BOEING REPORTS	Analysis of CA5 High Speed Test of Boeing 747 Space Shuttle Orbiter Carrier * This 102 page document has been scanned	October 31, 1974
BOEING REPORTS	Carrier Aircraft Modification (CAM) Simulation Report - Orbiter Ferry * This 71 page document has been scanned	December 9, 1974
BOEING REPORTS	747 CAM / Orbiter Launch Performance * This 79 page document has been scanned	January 6, 1975
BOEING REPORTS	Final Report on the CS-3 Low Speed Aeroelastic Buffet Test off the 747 CAM / Orbiter in the University of Washington Wind Tunnel * This 155 page document has been scanned	January 18, 1975
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BOEING REPORTS	Flight Test Instrumentation Requirements	January 28, 1975
SubHeading:	Box Number: 03 *	
BOEING REPORTS	Structure Analysis * This 295 page document has been scanned	January 28, 1975
BOEING REPORTS	747 CAM Program Review * This 140 page document has been scanned	January 30, 1975
BOEING REPORTS	Flight Control System Report * This 266 page document has been scanned	January 1975
BOEING REPORTS	Model 747 CAM (Carrier Aircraft Modification) Verification Plan - Phase II * This 80 page document has been scanned	February 3, 1975
BOEING REPORTS	Model 747 CAM (Carrier Aircraft Modification) Verification Plan - Phase II * This 80 page document has been scanned	February 3, 1975
SubHeading:	Box Number: 04 *	
BOEING REPORTS	Model 747 CAM (Carrier Aircraft Modification) Verification Plan * This 153 page document has been scanned	February 3, 1975
BOEING REPORTS	Sellers Preliminary Design Review, Final Report - 747 Carrier Aircraft Modification Program * This 494 page document has been scanned	February 28, 1975
BOEING REPORTS	747 Carrier Aircraft Modification, Final Oral Report, External Tank * This 76 page document has been scanned	March 27, 1975
BOEING REPORTS	747 CAM Program Review Carrier Aircraft Modification * This 68 page document has been scanned	April 2, 1975
BOEING REPORTS	747 CAM Hazard Analysis Report * This 49 page document has been scanned	May 6, 1975
BOEING REPORTS	747 CAM Program Review (Carrier Aircraft Modification) * This 117 page document has been scanned	June 5, 1975
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BOEING REPORTS	747 CAM Flight Test Instrumentation / Data Acquisition System (FTI / DAS) Deliverable Equipment	October 20, 1975
BOEING REPORTS	Preliminary Summary Report for the CS-6 Aeroelastic Dynamic Loads Test of the 747 CAM / Orbiter in the CVAL Wind Tunnel	February 27, 1976
SubHeading:	Box Number: 05 *	
BOEING REPORTS	Final Report on the CS-1 Low Speed Flutter Model Test (UWAL 1160) of the 747 CAM with the Space Shuttle Orbiter * This 106 page document has been scanned	August 8, 1975
BOEING REPORTS	Final Analysis Report of the CS2 Test of the 747 CAM with the Space Shuttle Orbiter in the Boeing 8 x 12 Foot Transonic Wind Tunnel * This 87 page document has been scanned	August 28, 1975
BOEING REPORTS	747 CAM Program Review * This 77 page document has been scanned	September 18, 1975
BOEING REPORTS	747 CAM Program Review (Carrier Aircraft Modification) * This 62 page document has been scanned	October 20, 1975
BOEING REPORTS	747 CAM Program Review * This 94 page document has been scanned	January 20, 1976
BOEING REPORTS	Final Analysis Report of the CS4 and CS5 Tests of the 747 CAM with the Space Shuttle Orbiter in the Boeing 8 x 12 Foot Transonic Wind Tunnel * This 119 page document has been scanned	January 23, 1976

BOEING REPORTS	Modification Description, Shuttle Carrier Aircraft * This 153 page document has been scanned	February 27, 1976
BOEING REPORTS	747 CAM Program Review * This 110 page document has been scanned	March 30, 1976
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BOEING REPORTS	Boeing Flight Test Data Processing Programs (Ground Support)	April 27, 1976
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BOEING REPORTS	The Analysis of 747 CAM Empennage Buffet Loads Using Wind Tunnel Measured Pressures as Excitation * This 166 page document has been scanned	April 13, 1976
BOEING REPORTS	Final Analysis Report of the CS-6 Aeroelastic Dynamic Loads Test of the 747 CAM / Orbiter in the CVAL Wind Tunnel * This 79 page document has been scanned	April 24, 1976
BOEING REPORTS	Predicted Flight Characteristics * This 269 page document has been scanned	May 3, 1976
BOEING REPORTS	Launch Verification * This 158 page document has been scanned	May 4, 1976
BOEING REPORTS	Phase II Flutter and Vibrations Investigations for the 747 CAM (Carrier Aircraft Modification) * This 206 page document has been scanned	May 6, 1976
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BOEING REPORTS	747 CAM Program Review * This 72 page document has been scanned	September 29, 1976
BOEING REPORTS	747 CAM / AERO Data Review Minutes of a Series of Informal Meetings * This 258 page document has been scanned	May 14 - 17, 1976
BOEING REPORTS	Modification Description Shuttle Carrier Aircraft * This 174 page document has been scanned	May 1976
BOEING REPORTS	Sellers Critical Design Review, Final Report, 747 Carrier Aircraft Modification Program, Volume IV, Team 3 Flight Sciences * This 157 page document has been scanned	June 4, 1976
BOEING REPORTS	Simulation Report - Orbiter Ferry - Phase II * This 118 page document has been scanned	June 21, 1976
BOEING REPORTS	747 CAM Program Review * This 135 page document has been scanned	June 25, 1976
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BOEING REPORTS	747 CAM, SCA Final Pre - Flight Review * This 99 page document has been scanned	November 16, 1976
BOEING REPORTS	Phase II Verification Compliance Report * This 215 page document has been scanned	October 29, 1976
BOEING REPORTS	Boeing Weight and Balance Manual Control and Loading NASA 747 Shuttle Carrier Airplane * This 187 page document has been scanned	November 15, 1976
BOEING REPORTS	ALT Launch Simulation No. 3 and Captive Flight Test Simulation No. 1 - 30 Day Report * This 155 page document has been scanned	November 24, 1976
BOEING REPORTS	Shuttle Carrier Aircraft Configuration Acceptance Review * This 116 page document has been scanned	January 12, 1977
BOEING REPORTS	747 Space Shuttle Orbiter Carrier Aircraft Modification (CAM) Mass Properties Final Report (Phase II) *	January 1977

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BOEING REPORTS	Turbulence Calibration of the General Dynamics 8 x 12 Foot Low Speed Wind Tunnel * This 102 page document has been scanned	February 1, 1977
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CARRIER AIRCRAFT WIND TUNNEL PROGRAM	Carrier Aircraft Wind Tunnel Program * This 71 page document has been scanned	1974-75
CARRIER AIRCRAFT WIND TUNNEL PROGRAM	CA4 Boeing 747 / External Tank Ferry Feasibility Wind Tunnel Summary Report & Associated Documents * This 123 page document has been scanned	June 1974
CARRIER AIRCRAFT WIND TUNNEL PROGRAM	CA-5 Wind Tunnel Test Data * This 80 page document has been scanned	August 1974
CARRIER AIRCRAFT WIND TUNNEL PROGRAM	CA-6 747 / Orbiter Wind Tunnel Test Information * This 337 page document has been scanned	May - July 1975
CARRIER AIRCRAFT WIND TUNNEL PROGRAM	CA-8 747 / Orbiter Wind tunnel Test Information * This 347 page document has been scanned	August - December 1975
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CARRIER AIRCRAFT WIND TUNNEL PROGRAM	CA-11 747 / ET Wind Tunnel Test * This 95 page document has been scanned	January 1975
CARRIER AIRCRAFT WIND TUNNEL PROGRAM	CA-13 Orbiter / 747 Wind Tunnel Test * This 88 page document has been scanned	May 1976
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CARRIER AIRCRAFT WIND TUNNEL PROGRAM	CA14A, CA14B 747 / Orbiter Wind Tunnel Tests Reports & Supporting Data * This 457 page document has been scanned	August 1975 - Feb 1976
CARRIER AIRCRAFT WIND TUNNEL PROGRAM	CA15A 747 / Orbiter Wind Tunnel Tests * This 391 page document has been scanned	Sept 1975 - Jan 1976
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CARRIER AIRCRAFT WIND TUNNEL PROGRAM	CA15B 747 / Orbiter Wind Tunnel Test Reports * This 201 page document has been scanned	Nov 1975 - Jan 1976
CARRIER AIRCRAFT WIND TUNNEL PROGRAM	CA17 747 / Orbiter Wind Tunnel Test Results * This 301 page document has been scanned	Dec 1975 - August 1976
CARRIER AIRCRAFT WIND TUNNEL PROGRAM	CA20 Orbiter / 747 Wind Tunnel Test Reports * This 375 page document has been scanned	Sept 1974 - July 1975
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CARRIER AIRCRAFT WIND TUNNEL PROGRAM	CA23 Orbiter / 747 Wind Tunnel Test Information	January - February 1975
CARRIER AIRCRAFT WIND TUNNEL PROGRAM	CA92 747 / Orbiter Wind Tunnel Test Information	November 1973
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CARRIER AIRCRAFT WIND TUNNEL PROGRAM	CA21 Orbiter / 747 Wind Tunnel Test Reports * This 162 page document has been scanned	Sept 1974 - April 1976
CARRIER AIRCRAFT WIND TUNNEL PROGRAM	CA26 Orbiter / 747 Wind Tunnel Test Information * This 65 page document has been scanned	June 1975
ROCKWELL DOCUMENTS	ABPS Study Review Ferry Requirements, Rockwell * This 113 page document has been scanned	February 21, 1973
ROCKWELL DOCUMENTS	747 - C5A Carrier Aircraft Evaluation	December 18, 1973

	Status, Rockwell * This 57 page document has been scanned	
ROCKWELL DOCUMENTS	Feasibility Evaluation of Carrier Aircraft for Space Shuttle Orbiter Ferry and Flight Test, SSV74-7, Rockwell * This 138 page document has been scanned	January 30, 1974
SubHeading:	Box Number: 14	
ROCKWELL DOCUMENTS	Feasibility Evaluation of Carrier Aircraft for Space Shuttle Orbiter Ferry and Flight Test SSV74-7, Rockwell	January 30, 1974
ROCKWELL DOCUMENTS	Summary Team 07.2 Separation AVionics Shuttle Carrier Aircraft PDR Carrier Aircraft Systems Integration PDR, Rockwell	February 1975
SubHeading:	Box Number: 14 *	
ROCKWELL DOCUMENTS	Space Shuttle Separation System Data Book (Carrier Aircraft PDR Only) SD73-SH-0180C, Rockwell * This 151 page document has been scanned	December 1974
ROCKWELL DOCUMENTS	ALT Separation Monitor & Control Unit Systems REquirements (Carrier Aircraft PDR Only) Rockwell * This 60 page document has been scanned	1974
ROCKWELL DOCUMENTS	Orbiter / Carrier Aircraft Interface Control Document 2-70001, Rockwell * This 67 page document has been scanned	January 24, 1975
ROCKWELL DOCUMENTS	Flight System - Ferry Station, Interface Control Document, Rockwell * This 52 page document has been scanned	January 1975
ROCKWELL DOCUMENTS	Carrier Aircraft Modification, Technical Requirements for, Specification, Rockwell * This 124 page document has been scanned	August 15, 1975
ROCKWELL DOCUMENTS	Shuttle Master Verification Plan, Volume VII, Shuttle Carrier Aircraft, MJ072-0004-7, Rockwell * This 241 page document has been scanned	October 20, 1975
ROCKWELL DOCUMENTS	Backup Information Supporting Assessment of Effects of Orbiter Tailcone - Off Configuration on Carrier Aircraft and ALT Program, Rockwell * This 72 page document has been scanned	November 18, 1975
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ROCKWELL DOCUMENTS	Assessment of Effects of Orbiter Tailcone - Off Configuration on Carrier Aircraft and ALT Program, Rockwell * This 103 page document has been scanned	November 18, 1975
ROCKWELL DOCUMENTS	Orbiter / 747 Carrier Separation Aerodynamic Data Substantiation Report, SD75-SH-0257C * This 498 page document has been scanned	November 1976
ROCKWELL DOCUMENTS	Shuttle Master Verification Plan Vol. VII Shuttle Carrier Aircraft Verification Plan MJ072-0004-7A, Rockwell * This 62 page document has been scanned	January 26, 1977
MCDONNELL DOUGLAS DOCUMENTS	ALT Separation Pre - Simulation Report, McDonnell Douglas * This 131 page document has been scanned	November 21, 1974
MCDONNELL DOUGLAS DOCUMENTS	Orbiter / 747 ALT Separation Real Time Simulation Report, McDonnell Douglas * This 213 page document has been scanned	January 24, 1975
MCDONNELL DOUGLAS DOCUMENTS	ALT Separation Real Time Simulation Termination Status Report, McDonnell Douglas * This 170 page document has been scanned	April 8, 1975
MCDONNELL DOUGLAS	Orbiter / 747 Separation Analysis "On	April 29, 1975

DOCUMENTS	the Road to Recovery" McDonnell Douglas * This 150 page document has been scanned	
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LOCKHEED DOCUMENTS	C5A / Orbiter Wind Tunnel Testing and Analysis - Piggyback Ferry, Lockheed * This 241 page document has been scanned	December 1973
LOCKHEED DOCUMENTS	C5 Piggyback Feasibility Study Status Report for Rockwell International, Lockheed * This 170 page document has been scanned	January 25, 1974
LOCKHEED DOCUMENTS	C5A / Orbiter External Fuel Tank Piggyback Ferry Low Speed Wind Tunnel Test, Lockheed California Company 8 x 12 Foot Wind Tunnel, * This 82 page document has been scanned	February 1974
LOCKHEED DOCUMENTS	C5 Piggyback Study (Final Oral Report) Lockheed * This 75 page document has been scanned	March 15, 1974
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LOCKHEED DOCUMENTS	C5 / Orbiter Piggyback Study, Lockheed, Volumes I and II * This 800 page document has been scanned	April 1974
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LOCKHEED DOCUMENTS	C5 / Orbiter Basic Aerodynamic Characteristics Report, Lockheed * This 195 page document has been scanned	June 28, 1974
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MISCELLANEOUS SUBJECT FILES	Preliminary Test Results, Wind Tunnel (Ames)	October 20, 1972
MISCELLANEOUS SUBJECT FILES	SSV Flight Test Thoughts, Space Shuttle Flight Test Requirements Management Plans; Orbiter Horizontal Flight Test Operations Plan	1972
MISCELLANEOUS SUBJECT FILES	C5A Ferry Feasibility Study Presentation Charts	June 19, 1973
MISCELLANEOUS SUBJECT FILES	Langley Ferry, Alternate Ferry Concepts	October 29, 1973
MISCELLANEOUS SUBJECT FILES	Orbiter / Carrier Concept Feasibility Study Plan	December 5, 1973
MISCELLANEOUS SUBJECT FILES	Status Charts: Ferry with ABES; Orbiter Piggy Back Concept	December 5, 1973
MISCELLANEOUS SUBJECT FILES	Orbiter Ferry and HFT Mode Review	February 7, 1974
MISCELLANEOUS SUBJECT FILES	Shuttle Carrier Aircraft Briefing to Military Airlift Command	March 25, 1974
MISCELLANEOUS SUBJECT FILES	Space Shuttle Carrier Aircraft Briefing to ASD Advisory Group	April 9, 1974
MISCELLANEOUS SUBJECT FILES	Space Shuttle Carrier Aircraft Options	May 1, 1974
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MISCELLANEOUS SUBJECT FILES	LAC C5A & ET; Lockheed Wind Tunnel Tests * This 111 page document has been scanned	November 1973
MISCELLANEOUS SUBJECT FILES	CAE Feasibility Study - Virtus Air Launch and Air Transport Vehicle for Space Shuttle Orbiter * this 205 page document has been scanned	April 3, 1974
MISCELLANEOUS SUBJECT FILES	747 & External Tank Abbreviated Test Plan * This 10 page document has been scanned	May 1974

MISCELLANEOUS SUBJECT FILES	RI Management; Carrier Aircraft Modification Correspondence * this 89 page document has been scanned	July 1973 - August 1974
MISCELLANEOUS SUBJECT FILES	Orbiter Tail Cone Shape Definition * This 2 page document has been scanned	October 24, 1974
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MISCELLANEOUS SUBJECT FILES	A Rationale for Tail Cone Separation System Decision	December 4, 1974
MISCELLANEOUS SUBJECT FILES	External Tank Info; External Tank Review; Transport of ET on 747, Feasibility Study	November - December 1974
MISCELLANEOUS SUBJECT FILES	GAO 747 / C5A Words; Comparison of 747 & C5A As Shuttle Orbiter Carriers; Rockwell Assembled Information for Boeing and Lockheed Carrier Feasibility	January 9 - December 1974
MISCELLANEOUS SUBJECT FILES	Orbiter / Carrier Structural & Umbilical Separation	January 24, 1975
MISCELLANEOUS SUBJECT FILES	GAO Evaluation & Results; Response to GAO Letter on Carrier Aircraft Selection	January - February 1975
MISCELLANEOUS SUBJECT FILES	Orbiter / Carrier Wind Tunnel Testing and Data Availability Status	March 11, 1975
MISCELLANEOUS SUBJECT FILES	Shuttle Program Approach and Landing Test (ALT) Orbiter / Carrier Separation Status	March 17, 1975
MISCELLANEOUS SUBJECT FILES	Correlation and Resolution of Orbiter / 747 Separation Aerodynamic Parameters	March 20, 1975
MISCELLANEOUS SUBJECT FILES	Orbiter Tailcone for ALT	May 1, 1975
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MISCELLANEOUS SUBJECT FILES	Trade Study 10, Separation Pitch Trim * This 17 page document has been scanned	January 1975
MISCELLANEOUS SUBJECT FILES	Carrier Aircraft Correspondence * this 156 page document has been scanned	Sept 1973 - Jan 1975
MISCELLANEOUS SUBJECT FILES	Interface Loads Analysis Plan; Flight Control Requirements; Separation Monitor & Control Unit; Performance & Tailcone; Flight Test Requirements * This 341 page document has been scanned	Sept 1974 - Jan 1975
MISCELLANEOUS SUBJECT FILES	Rockwell CAM PDR at Boeing, Preliminary Design Review * This 119 page document has been scanned	February 17 - 21, 1975
MISCELLANEOUS SUBJECT FILES	Space Shuttle Carrier Aircraft Selection, Report of GAO from Fletcher * This 65 page document has been scanned	February 1975
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MISCELLANEOUS SUBJECT FILES	Separation Pitch Control Mode	November 1975
MISCELLANEOUS SUBJECT FILES	747 CAM AFCS Ground Test	January 13, 1976
MISCELLANEOUS SUBJECT FILES	TM11 Test Procedure AFCS Laboratory Test	February 4, 1976
MISCELLANEOUS SUBJECT FILES	Flight Flutter Test, Model 747 CAM, with Type I Modifications	June 10, 1976
MISCELLANEOUS SUBJECT FILES	747 CAM Aerodynamic Verification Flight Test Requirements, Type I	June 15, 1976

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MISCELLANEOUS SUBJECT FILES	Inflight Structures Stress Measurements	July 7, 1976
MISCELLANEOUS SUBJECT FILES	The 747 SCA ALT Capability	September 8, 1977
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MISCELLANEOUS SUBJECT FILES	747 / Orbiter Buffet October November 1975 Final Reviews * This 95 page document has been scanned	October - December 1975
MISCELLANEOUS SUBJECT FILES	Shuttle Ferry Vehicle Dynamic Stability Test Results * This 85 page document has been scanned	January 19, 1976
MISCELLANEOUS SUBJECT FILES	Design Status SCA / Orbiter * This 90 page document has been scanned	February 20, 1976
MISCELLANEOUS SUBJECT FILES	CAM Wind Tunnel Test Program, Correspondence & Charts * This 268 page document has been scanned	August 1974, March 1976