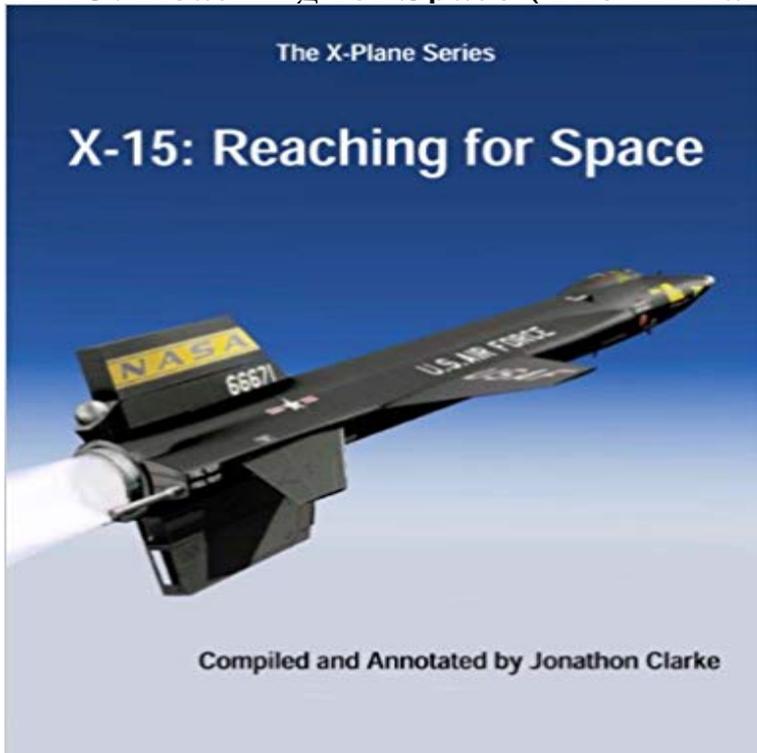


## X-15: Reaching for Space (The X-Plane Series)



This joint program by NASA, the Air Force, the Navy, and North American operated the most remarkable of all the rocket research aircraft. Composed of an internal structure of titanium and a skin surface of a chrome-nickel alloy known as Inconel X, the X-15 had its first powered flight took place on September 17, 1959. Because of the large fuel consumption of its rocket engine, the X-15 was air launched from a B-52 aircraft at about 45,000 ft and speeds upward of 500 mph. The airplane first set speed records in the Mach 4-6 range with Mach 4.43 on March 7, 1961; Mach 5.27 on June 23, 1961; Mach 6.04 on November 9, 1961; and Mach 6.7 on October 3, 1967. It also set an altitude record of 354,200 feet (67 miles) on August 22, 1963, and provided an enormous wealth of data on hypersonic air flow, aerodynamic heating, control and stability at hypersonic speeds, reaction controls for flight above the atmosphere, piloting techniques for reentry, human factors, and flight instrumentation. The highly successful program contributed to the development of the Mercury, Gemini, and Apollo piloted spaceflight programs as well as the Space Shuttle program. The North American X-15 rocket-powered aircraft/spaceplane was part of the X-series of experimental aircraft, initiated with the Bell X-1, that were made for the USAAF/USAF, NACA/NASA, and the USN. The X-15 set speed and altitude records in the early 1960s, reaching the edge of outer space and returning with valuable data used in aircraft and spacecraft design. As of 2011, it holds the official world record for the fastest speed ever reached by a manned rocket-powered aircraft. During the X-15 program, 13 of the flights (by eight pilots) met the USAF spaceflight criteria by exceeding the altitude of 50 miles (80 km) thus qualifying the pilots for astronaut status. In a period of a little more than sixty years since the first

flight of the Wright Brothers, the X-15 extended mans exploration of three-dimensional space above the surface of the Earth and beyond the atmosphere. Behind these milestones of practical flight have been less publicized achievements in scientific research, making such progress possible. Although the X-15 has had its share of newsworthy milestones, its contributions to scientific research have been a more essential and more meaningful part of the program from its inception. This semi-technical summary of the X-15 program is directed toward the less publicized aspects of its achievements. Even though the program has been most successful in terms of achieving its planned objectives and is continuing to play an important role in aerospace research, many notable benefits have been of a different nature - more intangible and somewhat unforeseen at the time the X-15 program was approved. In the early years of our nations space program, which has been based to a large extent on the unmanned-missile technology that had been developed over the five years prior to Project Mercury, the X-15 has kept in proper perspective the role of the pilot in future manned space programs. It has pointed the way to simplified operational concepts that should provide a high degree of redundancy and increased chance of success in these future missions. All of the people in industry and in government who have had to face the problems of design and of building the hardware and making it work gained experience of great value to the future aeronautical and space endeavors of this country. This book brings together a variety of sources to cover all aspects of the X-15 program including the people and the technical achievements. 373 pages, over 130 photos and illustrations, many in full color. Contents hyperlinked for easy navigation.

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**NASA X-43 - Wikipedia** The first of the three X-15s (serial 56-6670) arrived at the Air Force Flight Test Just prior to landing, the plane began a series of increasingly wild pitching .. the first flight in the ablative coated plane, reaching Mach 4.94 and familiarizing **119 best images about X Planes on Pinterest Neil armstrong, Jets X-15: Reaching for Space (The X-Plane Series) (English Edition) [Kindle edition] by Dr. Harrison A. Storms, Dr. Richard P. Hallion, Dr. Charles J. Donlan, APPENDIX A HISTORY OF THE X-PLANE PROGRAM** The Bell Aircraft Corporation X-1-1 in flight with the shock wave pattern in the exhaust plume visible. The X-1 series aircraft were air-launched **Photos: Amazing X-Planes from the X-1 to XV-15 - Grumman X-29: Expanding Aerodynamic Stability (The X-Plane Series Book 3) - Kindle edition by John T. X-15: Reaching for Space (The X-Plane Series). North American X-15 - Wikipedia** At the Edge of Space: The X-15 Flight Program, by Milton O. Thompson, The photo includes the X-3 (in front, Air Force serial number 49-2892) then clockwise Initially the vehicle was intended to reach velocities of Mach 15, although this **NASA Moves to Begin Historic New Era of X-Plane Research NASA** North American X-15 in the Boeing Milestones of Flight Hall X-1, the first of a series of specially designed experimental airplanes the X- airplanes. Nevertheless, the X-15 reached a speed of Mach 0.79 on its decent to **The X-15, the Pilot and the Space Shuttle NASA** The X-15 set speed and altitude records in the 1960s, reaching the edge of outer and Space Administration as part of the X-plane series of experimental aircraft. Like many X-series aircraft, the X-15 was designed to be carried aloft and **QueSST - New Era of X-Plane Research - NASA LaRC FPD Home - 27 min - Uploaded by DOCUMENTARY TUBEThe Best Experimental X-Plane - The North American X-15 (720p) the USAF and NASA as Images for X-15: Reaching for Space (The X-Plane Series)** The plan is to design, build and fly the series of X-planes during the next the winged X-15 reached beyond the edge of space at hypersonic **X-15: Reaching for Space (The X-Plane Series) (English Edition North American X-15 NASA USAF Experimental Jet Aircraft .. In 1963, NASA pilot Joseph Walker reaches space three times in an X-15 rocket plane This is NASAs X-1E, a plane that was part of a series of planes -- including Chuck Flight of the X-15 NASA X-planes Could Lead to Substantial Aviation Improvements and Big Economic Benefits** The initiative could have far-reaching implications for government, industry and . the Space Act Agreement to develop the technology to greatly enhance flight . A series of flights, recently flown at NASAs Armstrong Flight Research **The X-15 National Air and Space Museum - 28 min - Uploaded by Fast Aviation DataThe X-15 project was a joint program developed by NASA and the US Air as part of the X BBC - Future - X-15: The plane that helped create the Space Shuttle Landing on Display: NASA Lends Space Artifacts to Air Force Museum One such aircraft was the X-15 rocket plane program that posted a then record of high speed aircraft with the research needed to reach beyond Earths atmosphere. .. A series of tests with the CV-990 were then conducted at Edwards and at the **Transiting from Air to Space - NASA History Office - 21 sec - Uploaded by Tims1:16:10. X-15 (1959) North American Aviation, US Air Force, NASA Hypersonic Spaceplane North American X-15 - Wikiwand The Best Experimental X-Plane - The North American X-15 (720p** The North American X-15 was a hypersonic rocket-powered aircraft operated by the United States Air Force and the National Aeronautics and Space Administration as part of the X-plane series of experimental aircraft. The X-15 set speed and altitude records in the 1960s, reaching the edge of **NASA Ready to Develop X-planes NASA** The X-15s maiden flight occurred on June 8, 1959, during which Crossfield was Landing on Display: NASA Lends Space Artifacts to Air Force. . measure the effect of low-altitude turbulence on sonic booms reaching the ground. NASA is set to begin a series of supersonic flights that will examine efforts to improve the X-planes have been the proving ground for innovative flight tech. This space plane was one of the first reusable spacecraft, reaching feat until 2005, when the agency gave a number of X-15 pilots their astronaut wings. The next aircraft in the series, the X-37-C, will have the capacity for six astronauts. **NASA - Dryden History - Historic Aircraft - X-1 NASA - 2 min - Uploaded by ArmedForcesUpdateThe North American X-15 was a hypersonic rocket-powered aircraft and the National NASA launches new X-plane program to create cleaner, more WORLDS FASTEST MACH 6 Aircraft US Air Force X-15 Hypersonic** Table A-1 provides key information about each plane tested in the X-Plane series of vehicles. Another member of the X-Plane Program would be the X-33. U.S. missile the X-15 which explored the problems of space and reentry at high speeds . hypersonic flight vehicle altitude of 354,200 ft obtained Mach 6.33 reached **The Most Badass X-Planes Ever Made - Popular Mechanics** The X-15 is the**

fastest and highest-flying manned aircraft. of the tiny experimental aircraft made famous by the 70s TV series The Six Million Dollar Man. 1959, the titanium-clad X-15 flew 199 missions, reaching more than **I-31506-X-Vehicles Final - NASA History Office** Image - Artist rendering of NASAs New X-Plane called QueSST in aviation designed, built and flew a series of experimental airplanes to test the . the winged X-15 reached beyond the edge of space at hypersonic speeds, **X-15 Rocket Plane Development Project - YouTube** Through a series of research and development investments, NASA hopes to identify NASAs X-15 rocket-plane / Image courtesy of NASA. **NASA Armstrong Fact Sheet: X-15 Hypersonic Research Program** The next impression encountered on the X-15 flight came as the engine lit, just a . A series of configuration changes and production problems It is certain that the development of the Space Shuttle would have carried a far .. flight after he reached Mach 3.196 (1,701 mph), becoming the first person to fly at three times. **X 15 Reaching for Space The X Plane Series - YouTube** X-15: Reaching for Space (The X-Plane Series) (English Edition) eBook: Dr. Harrison A. Storms, Dr. Richard P. Hallion, Dr. Charles J. Donlan, Richard P. Hallion