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Supplement 1 Quarto Publishing Group USA
The first volume in this series dealt with the Westinghouse J40. This volume details the development history of the J46 engine, beginning with the developments of the J34 engine that ended up in the initial J46. The unexpected and prolonged technical struggles of Westinghouse to bring the J46 to production status are detailed, along with the development histories of forgotten variants planned or developed for cancelled airframe projects. The J46 engine program resulted when The U.S. Navy Bureau of Aeronautics identified a need for more power than the existing J34 could produce. Expecting to capitalize on the outcome of BuAer's extensive J34 improvement investments, Westinghouse planned the new engine as yet another stretch of the J34 design with an all new electronic control system that for the first time integrated an afterburner. The development failure of the initial control system, and recurring mechanical problems led to late production and the delay of the introduction of the Vought's F7U-3 Cutlass into service. Itself over-weight and plagued with problems, this aircraft was called "gutless." The author offers interesting insights into contributing causes. With the withdrawal of the F7U-3 from service, both the J46 and its planned, almost unknown, successors quickly sank from view. Focusing on the technical aspects of the engine's development, primary sources were used almost exclusively. Contains 74 illustrations and numerous charts regarding the construction, performance, and operational details for the various models, many of which are almost unknown to the public.

Investigation of Fixed-geometry Supersonic Inlets with Bypass Ducts for Matching Turbojet-engine Air-flow Requirements Over a Range of Transonic and Supersonic Speeds John Wiley & Sons
Thrust-stand tests were conducted at high thrust outputs to determine the operating life of a 22-inch-diameter pulse-jet engine equipped with a neoprene-coated valve grid. The results of the endurance tests show that through the use of the neoprene-coated grid and operating life of the pulse-jet engine, as limited by valve deterioration, was extended to more than 164 minutes, as compared with 30 minutes for the standard uncoated grid. The average jet thrust (not deducting the momentum drag of the entering air) developed by the engine was 855 pounds at a simulated ram pressure of 58 inches of water and a fuel flow of 2800 pounds per hour; no decrease in thrust was obtained during the entire 164 minutes of operation. This jet-thrust value represents a slight reduction in performance from the average 890 pounds of thrust obtained with the standard valve grid under similar operation conditions.

The Commercial and Financial Chronicle Lulu.com
The variation of engine performance with liquid metal radiator diameter and flight altitude has been estimated for both the 1600F NaK and 1800F NaK radiators at Mach 0.6 and hot day atmospheric conditions. The net thrust, air flow and reactor power is presented in 3 figures for the Pratt & Whitney Aircraft J-58 engine with the 1600F NaK radiator. The net thrust, air flow and reactor power for the 1800F NaK radiator are also presented in figures.

Design and Checkout of a High Speed Research Nozzle Evaluation Rig University-Press.org
Please note that the content of this book primarily consists of articles available from Wikipedia or other free sources online. Pages: 27. Chapters: Pratt & Whitney R-2800 Double Wasp, Pratt & Whitney R-985 Wasp Junior, Pratt & Whitney F135, Pratt & Whitney JT8D, Pratt & Whitney J58, Pratt & Whitney PW1000G, Pratt & Whitney J52, Pratt & Whitney R-4360 Wasp Major, Pratt & Whitney J57, Pratt & Whitney F100, Pratt & Whitney PW4000, Pratt & Whitney R-1830 Twin Wasp, Pratt & Whitney R-1340 Wasp, Pratt & Whitney TF30, Pratt & Whitney JT3D, Pratt & Whitney R-1860, Pratt & Whitney PW2000, Pratt & Whitney R-1690 Hornet, Pratt & Whitney PW1120, Pratt & Whitney F119, Pratt & Whitney JT9D, Pratt & Whitney T34, Pratt & Whitney R-1535 Twin Wasp Junior, Pratt & Whitney X-1800, Pratt & Whitney R-2000 Twin Wasp, Pratt & Whitney PW6000, Pratt & Whitney J75, Pratt & Whitney JT12, Pratt & Whitney R-2180, Pratt & Whitney R-2060 Yellow Jacket, Pratt & Whitney XH-3130, Pratt & Whitney T73, Pratt & Whitney PT1. Excerpt: The Pratt & Whitney R-985 Wasp Junior is a series of nine-cylinder air-cooled radial aircraft engines built by the Pratt & Whitney Aircraft Company from the 1930s to the 1950s. These engines have a displacement of 985 cu in (16.14 L); initial versions produced 300 hp (224 kW), while the most widely used versions produce 450 hp (336 kW). Wasp Juniors have powered numerous smaller civil and military aircraft, including small transports, utility aircraft, trainers, agricultural aircraft, and helicopters. Over 39,000 of these engines were built, and many are still in service today. Pratt & Whitney developed the R-985 Wasp Junior as a smaller version of the R-1340 Wasp to compete in the market for medium-sized aircraft engines. Like its larger brother, the Wasp Junior was an air-cooled nine-cylinder radial, with its power boosted by a gear-driven single-speed centrifugal supercharger. Its cylinders were smaller, however, with a bore and stroke of in (132 mm), giving a...

Power Boating Independently Published
Some years ago, Aidan Williams published two articles for Cross and Cockade, the Journal of the First World War Aviation Historical Society. The subject of both articles was the relatively little-known Engine Repair Shops of the Royal Flying Corps (later the Royal Air Force) in France during the Great War. Aidan has updated the information, added background stories, and included more photographs and extra details to introduce the history of the Engine Repair Shops to a whole new readership. In 1915, Scarborough-born Second Lieutenant Louis Frederick Rudston Fell joined the Engine Repair Shops as Assistant Equipment Officer; by 1919, he was Lieutenant Colonel L. F. R. Fell DSO OBE, and he continued to play an important role in British aero engine development up to the Second World War. In addition, Air Mechanic Thomas Boland's working day in the rotary engine section is described.

Monthly Catalog of United States Government Publications Routledge
A method is presented to design a supersonic inlet that will match turbojet-engine air mass-flow requirements over a wide Mach number range. Two types of bypasses were investigated; one had a 360 degree annular cowling and the other had twin slotted ducts. Three models were flight tested. Two of the models, which had bypass ducts, were also ground tested. The bypass models had higher external drags. Both bypass models approximated a typical turbojet-engine air mass-flow requirement between Mach numbers 1.0 and 2.0. The flight tests covered a Reynolds number range from 200,000 to 800,000 and a Mach number range from 0.8 to 1.95.

The Automobile Bloomsbury Publishing USA
The High Flow Jet Exit Rig (HFJER) was designed to provide simulated mixed flow turbojet engine exhaust for one- seventh scale models of advanced High Speed Research test nozzles. The new rig was designed to be used at NASA Lewis Research Center in the Nozzle Acoustic Test Rig and the 8x6 Supersonic Wind Tunnel. Capabilities were also designed to collect nozzle thrust measurement, aerodynamic measurements, and acoustic measurements when installed at the Nozzle Acoustic Test Rig. Simulated engine exhaust can be supplied from a high pressure air source at 33 pounds of air per second at 530 degrees Rankine and nozzle pressure ratios of 4.0. In addition, a combustion unit was designed from a J-58 aircraft engine burner to provide 20 pounds of air per second at 2000 degrees Rankine, also at nozzle pressure ratios of 4.0. These airflow capacities were designed to test High Speed Research nozzles with exhaust areas from eighteen square inches to twenty-two square inches. Nozzle inlet flow measurement is available through pressure and temperature sensors installed in the rig. Research instrumentation on High Speed Research nozzles is available with a maximum of 200 individual pressure and 100 individual temperature measurements. Checkout testing was performed in May 1997 with a 22 square inch ASME long radius flow nozzle. Checkout test results will be summarized and compared to the stated design goals. Castner, Raymond S. and Wolter, John D. Glenn Research Center NASA-TM-113179, NAS 1.15:113179, AIAA Paper 98-0711, E-10943 RTOP 537-05-21-00...

Aeronautics and Space Report of the President ... Activities
The powerplant characteristics previously described in PWAC-275 were based on the use of low compressor pressure ratio nuclear turbojet engines equipped with interburners but without afterburners. The performance of an afterburning version of the same engine is presented in Section B of this supplement. The engine selection for the previous report and for Section B of this supplement was based on best engine performance at Mach No. 3 on nuclear heat alone. For this reason a low compression turbojet engine was selected. However, it is desirable that the nuclear data in report PWAC-275 be useful for both subsonic and supersonic missions. Therefore, the engine performance has been computed for a nuclear conversion of the Pratt & Whitney Aircraft J-58 turbojet engine which has a higher compressor pressure ratio. The performance of this engine is outlined in Section C of this supplement.

Hearings
New edition of the successful textbook updated to include new material on UAVs, design guidelines in aircraft engine component systems and additional end of chapter problems Aircraft Propulsion, Second Edition follows the successful first edition textbook with comprehensive treatment of the subjects in airbreathing propulsion, from the basic principles to more advanced treatments in engine components and system integration. This new edition has been extensively updated to include a number of new and important topics. A chapter is now included on General Aviation and Uninhabited Aerial Vehicle (UAV) Propulsion Systems that includes a discussion on electric and hybrid propulsion. Propeller theory is added to the presentation of turboprop engines. A new section in cycle analysis treats Ultra-High Bypass (UHB) and Geared Turbofan engines. New material on drop-in biofuels and design for sustainability is added to refl ect the FAA ' s 2025 Vision. In addition, the design guidelines in aircraft engine components are expanded to make the book user friendly for engine designers. Extensive review material and derivations are included to help the reader navigate through the subject with ease. Key features: General Aviation and UAV Propulsion Systems are presented in a new chapter Discusses Ultra-High Bypass and Geared Turbofan engines Presents alternative drop-in jet fuels Expands on engine components' design guidelines The end-of-chapter problem sets have been increased by nearly 50% and solutions are available on a companion website Presents a new section on engine performance testing and instrumentation Includes a new 10-Minute Quiz appendix (with 45 quizzes) that can be used as a continuous assessment and improvement tool in teaching/learning propulsion principles and concepts Includes a new appendix on Rules of Thumb and Trends in aircraft propulsion Aircraft Propulsion, Second Edition is a must-have textbook for graduate and undergraduate students, and is also an excellent source of information for researchers and practitioners in the aerospace and power industry.

SR-71
At the height of the Cold War in 1964, President Johnson announced a new aircraft dedicated to strategic reconnaissance. The Lockheed SR-71 Blackbird spy plane flew more than three-and-a-half times the speed of sound, so fast that no other aircraft could catch it. Above 80,000 feet, its pilots had to wear full-pressure flight suits similar to what was used aboard the space shuttle. Developed by the renowned Lockheed Skunk Works, the SR-71 was an awesome aircraft in every respect, and it took the world by storm. The SR-71 was in service with the U.S. Air Force from 1964 to 1998, when it was withdrawn from use, superseded by satellite technology. Twelve of the thirty-two aircraft were destroyed in accidents, but none were ever lost to enemy action. Throughout its thirty-four-year career, the SR-71 was the world ' s fastest and highest-flying

operational manned aircraft. It set world records for altitude and speed: an absolute altitude record of 85,069 feet on July 28, 1974, and an absolute speed record of 2,193.2 miles per hour on the same day. On September 1, 1974, it set a speed and time record over a recognized course between New York and London (3,508 miles) of 1,435.587 miles per hour and an elapsed time of 1 hour, 54 minutes, 56.4 seconds. SR-71 covers every aspect of the SR-71 ' s development, manufacture, modification, and active service from the insider ' s perspective of one its pilots and is lavishly illustrated with more than 200 photos.

Westinghouse J46 Axial Turbojet Family

The Lockheed Blackbirds hold a unique place in the development of aeronautics. In their day, the A-12, YF-12, M-21, D-21, and SR-71 variants outperformed all other jet airplanes in terms of altitude and speed. Now retired, they remain the only production aircraft capable of sustained Mach 3 cruise and operational altitudes above 80,000 feet.This is the first book to address the technical aspects of these incredible aircraft. The author describes the design evolution of the Blackbird, from the Archangel to the Senior Crown (the Air Force's SR-71.) He describes in detail the construction and materials challenges faced by Lockheed, as well as the Blackbird's performance characteristics and capabilities.A NASA historian, the author describes NASA's role in using the aircraft as a flying laboratory to collect data on materials, structures, loads, heating, aerodynamics, and performance for high-speed aircraft. The reader will benefit from the technical and programmatic lessons learned.This volume was produced in cooperation with the National Aeronautics and Space Administration.

RFC/RAF Engine Repair Shops- France 1914 to 1918

The Central Intelligence Agency is essential in the fight to keep America safe from foreign attacks. This two-volume work traces through facts and documents the history of the CIA, from the people involved to the operations conducted for national security. This two-volume reference work offers both students and general-interest readers a definitive resource that examines the impact the CIA has had on world events throughout the Cold War and beyond. From its intervention in Guatemala in 1954, through the Bay of Pigs, the Vietnam War, the Iran-Contra Affair, and its key role in Afghanistan following the terrorist attacks of September 11th, 2001, this objective, apolitical work covers all of this controversial intelligence agency's most notable successes and failures. The content focuses on describing how a U.S. government organization that is unlike any other conducts covert warfare, surreptitiously collects information, and conducts espionage. The work allows for easy reference of former CIA operations and spies, looking at the positive and negative aspects of each operation and the "why" and "how" of its execution. The second volume provides documentation that supports and amplifies more than 200 cross-referenced entries. Readers will be able to understand the reasons behind the CIA's various actions, perceive how the agency's role has evolved across its 75-year history, and intelligently consider the viability and future of the CIA.

Inventory of Current Energy Research and Development

Liquid hydrogen is shown to be the ideal fuel for civil transport aircraft, as well as for many types of military aircraft. Hydrogen Aircraft Technology discusses the potential of hydrogen for subsonic, supersonic, and hypersonic applications. Designs with sample configurations of aircraft for all three speed categories are presented, in addition to performance comparisons to equivalent designs for aircraft using conventional kerosine-type fuel and configurations for aircraft using liquid methane fuel. Other topics discussed include conceptual designs of the principal elements of fuel containment systems required for cryogenic fuels, operational elements (e.g., pumps, valves, pressure regulators, heat exchangers, lines and fittings), modifications for turbine engines to maximize the benefit of hydrogen, safety aspects compared to kerosine and methane fueled designs, equipment and facility designs for servicing hydrogen-fueled aircraft, production methods for liquid hydrogen, and the environmental advantages for using liquid hydrogen. The book also presents a plan for conducting the necessary development of technology and introducing hydrogen fuel into the worldwide civil air transport industry. Hydrogen Aircraft Technology will provide fascinating reading for anyone interested in aircraft and hydrogen fuel designs.

From Archangel to Senior Crown

The Commercial & Financial Chronicle

Endurance Tests of a 22-inch-diameter Pulse-jet Engine with a Neoprene-coated Valve Grid

The Atmospheric Effects of Stratospheric Aircraft: A First Program Report

Design and Checkout of a High Speed Research Nozzle Evaluation Rig

Combat Crew

NASA Thesaurus: Access vocabulary