Aircraft Engine Operation Test Technic

Lists citations with abstracts for aerospace related reports obtained from world wide sources and announces documents that have recently been entered into the NASA Scientific and Technical Information Database.

Contents: Producing Weather for Turbojet Engine Testing; Some Problems Encountered in Establishing a Small Engine Icing Facility at the AEL, NAMC; The Photoelectric Raindrop-size Spectrometer; Measuring Techniques Under Water and Icing Conditions; A Comparison Between the Rotating Multicylinder Method and the Oil Slide Method; National Severe Storms Project - Objectives and Operations; Severe Weather Flight Testing of Jet Fighter Airplanes and Engines; Foreign Object Ingestion in Turbine Engines; Icing Trials of the T-38 and T-39 Aircraft; Icing Tests Conducted at NATTS, May 1960 Through May 1961; A Resume of Simulation Techniques and Icing Activities at the Engine Laboratory of the National Research Council (Canada); The Effects of Bird Ingestion on Gas Turbine Engines; Effects of Water Ingestion on Turbojet Engine Operation; Salt Water Ingestion by Gas Turbine Engines; The Effect of Temperature Extremes Upon the Operational Characteristics of Turbojet Engines.

A Study Made for the Subcommittee on War Mobilization of the Committee on Military Affairs, United States Senate, Pursuant to S. Res. 107, 78th Congress, and S. Res. 46, 79th Congress, Authorizing a Study of the Possibilities of Better Mobilizing the National Resources of the United States. May 1945...

Wartime Technological Developments

Liberty Engine

Western Electronic Show and Convention : Papers Presented at the Western Electronic Show and Convention in San Francisco, California, August 24-27, 1971

Hearings Before the Select Committee of Inquiry Into Operations of the United States Air Services, House of Representatives, Sixty-eighth Congress, on Matters Relating to the Operations of the United States Air Services

Aircraft Engine Operation and Test[september 16, 1940]War Department Technical ManualAircraft Engine Operation and TestAircraft Engine Operation and Test, Dec. 24, 1941Airframe and Powerplant Mechanics Powerplant HandbookScientific and Technical Aerospace Reports

Deficiencies in established techniques of measuring aircraft thrust in flight led to the application of the gas generator method of calculating engine thrust to the XB-70-1 airplane. A series of tests on a ground static-thrust stand [were]performed on the airplane to establish at ground static conditions the accuracy of this method, to measure the installed thrust of the YJ93-GE-3 engine, and to determine the effect of instrumentation errors and nonuniform flows at the engine compressor face on the thrust calculation. Tests with an aerodynamically choked inlet, an opened inlet-bypass system, and varying combinations of operating engines were also conducted. Results showed that the accuracy of the gas generator method was ±2 percent for the normal operation of the XB-70-1 airplane at ground static conditions and for the upper 70 percent of the engine's throttle range. They also showed that the effect of individual instrument errors on the thrust calculation was reduced because of the large number of measurements and that abnormally high inlet flow distortion affects the thrust calculation. When corrected for inlet losses, the installed thrust of the YJ93-GE-3 engine agreed favorably with the engine manufacturer's uninstalled estimated thrust for all power settings except those at the low end.--P. [i].

Inquiry Into Operations of the United States Air Services

Advanced Data Mining and Applications

Index of NACA Technical Publications

ASME Technical Papers

Aircraft Engine Operation and Test, Dec. 24, 1941

This procedure is designed to provide for the aircraft, engine, turbosupercharger manufacturers, and other interested groups a guide for instrumenting, testing, and presenting the over-all characteristics of any engine-turbosupercharger installation.

COURSE OVERVIEW: Fulfilling the Army's need for engines of simple design that are easy to operate and maintain, the gas turbine engine is used in all helicopters of Active Army and Reserve Components, and most of the fixed-wing aircraft to include the Light Air Cushioned Vehicle (LACV). We designed this subcourse to teach you theory and principles of the gas turbine engine and some of the basic army aircraft gas turbine engines used in our aircraft today. CHAPTERS OVERVIEW Gas turbine engines can be classified according to the type of compressor used, the path the air takes through the engine, and how the power produced is extracted or used. The chapter is limited to the fundamental concepts of the three major classes of turbine engines, each having the same principles of operation. Chapter 1 is divided into three sections; the first discusses the theory of turbine engines. The second section deals with principles of operation, and section III covers the major engine sections and their description. CHAPTER 2 introduces the fundamental systems and accessories of the gas turbine engine. Each one of these systems must be present to have an operating turbine engine. Section I describes the fuel system and related components that are necessary for proper fuel metering to the engine. The information in CHAPTER 3 is important to you because of its general applicability to gas turbine engines. The information covers the procedures used in testing, inspecting, maintaining, and storing gas turbine engines. Specific procedures used for a particular engine must be those given in the technical manual (TM) covering that engine The two sections of CHAPTER 4 discuss, in detail, the Lycoming T53 series gas turbine engine used in Army aircraft. Section I gives a general description of the T53, describes the engine's five sections, explains engine operation, compares models and specifications, and describes the engine's airflow path. The second section covers major engine assemblies and systems. CHAPTER 5 covers the Lycoming T55 gas turbine engine. Section I gives an operational description of the T55, covering the engine's five sections. Section II covers in detail each of the engine's sections and major systems. The SOLAR T62 auxiliary power unit (APU) is used in place of ground support equipment to start some helicopter engines. It is also used to operate the helicopter hydraulic and electrical systems when this aircraft is on the ground, to check their performance. The T62 is a component of both the CH- 47 and CH-54 helicopters -- part of them, not separate like the ground-support-equipment APU's. On the CH-54, the component is called the auxiliary powerplant rather than the auxiliary power unit, as it is on the CH-47. The two T62's differ slightly. CHAPTER 6 describes the T62 APU; explains its operation; discusses the reduction drive, accessory drive, combustion, and turbine assemblies; and describes the fuel, lubrication, and electrical systems. CHAPTER 7 describes the T63 series turboshaft engine, which is manufactured by the Allison Division of General Motors Corporation. The T63-A-5A is used to power the OH-6A, and the T63-A-700 is in the OH-58A light observation helicopter. Although the engine dash numbers are not the same for each of these, the engines are basically the same. As shown in figure 7.1, the engine consists of four major components: the compressor, accessory gearbox, combustor, and turbine sections. This chapter explains the major sections and related systems. The Pratt and Whitney T73-P-1 and T73-P-700 are the most powerful engines used in Army aircraft. Two of these engines are used to power the CH-54 flying crane helicopter. The T73 design differs in two ways from any of the engines covered previously. The airflow is axial through the engine; it does not make any reversing turns as the airflow of the previous engines did, and the power output shaft extends from the exhaust end. CHAPTER 8 describes and discusses the engine sections and systems. Constant reference to the illustrations in this chapter will help you understand the discussion. TABLE OF CONTENTS: 1 Theory and Principles of Gas Turbine Engines - 2 Major Engine Sections - 3 Systems and Accessories - 4 Testing, Inspection, Maintenance, and Storage Procedures - 5 Lycoming T53 - 6 Lycoming T55 - 7 Solar T62 Auxiliary Power Unit - 8 Allison T62, Pratt & Whitney T73 and T74, and the General Electric T700 - Examination. I Manuals Combined" ARMY AIRCRAFT GAS TURBINE ENGINES

Scientific and Technical Aerospace Reports

1971 WESCON Technical Papers

Validation of the Gas Generator Method of Calculating Jet-engine Thrust and Evaluation of XB-70-1 Airplane Engine Performance at Ground Static Conditons

Online version: Technical papers portion of the SAE Digital Library references thousands of SAE Technical Papers covering the latest advances and research in all areas of mobility engineering including ground vehicle, aerospace, off-highway, and manufacturing technology. Sample coverage includes fuels and lubricants, emissions, electronics, brakes, restraint systems, noise, engines, materials, lighting, and more. Your SAE service includes detailed summaries, complete documents in PDF, plus document storage and maintenance

This book constitutes the refereed proceedings of the 14th International Conference on Advanced Data Mining and Applications, ADMA 2018, held in Nanjing, China in November 2018. The 23 full and 22 short papers presented in this volume were carefully reviewed and selected from 104 submissions. The papers were organized in topical sections named: Data Mining Foundations; Big Data; Text and Multimedia Mining; Miscellaneous Topics.

Jet engine technician (AFSC 42672).

Technical Note - National Advisory Committee for Aeronautics

14th International Conference, ADMA 2018, Nanjing, China, November 16–18, 2018, Proceedings

Course Manual for Machinist's Mates' (A) (advanced) Course

Joint US/Russia TU-144 Engine Ground Tests

Two engine research experiments were recently completed in Moscow, Russia using an engine from the Tu-144 supersonic transport airplane. This was a joint project between the United States and Russia. Personnel from the NASA Lewis Research Center, General Electric Aircraft Engines, Pratt & Whitney, the Tupolev Design Bureau, and IBP Aircraft LTD worked together as a team to overcome the many technical and cultural challenges. The objective was to obtain large scale inlet data that could b used in the development of a supersonic inlet system for a future High Speed Civil Transport (HSCT). The first experiment studied the impact of typical inlet structures that have trailing edges in close proximity to the inlet/engine interface plane on the flow characteristics at that plane. The inlet structure simulated the subsonic diffuser of a supersonic inlet using a bifurcated splitter design. The centerbody maximum diameter was designed to permit choking and slightly supercritical operation. The second experiment measured the reflective characteristics of the engine face to incoming perturbations of pressure amplitude. Th basic test rig from the first experiment was used with a longer spacer equipped with fast actuated doors. All the objectives set fort at the beginning of the project were met.

The primary purpose of this extensive test effort was to observe real-time operational performance characteristics associated wit automotive grade fuel utilized by piston engine powered light general aviation aircraft. In fulfillment of this effort, baseline engine operations were established with 100LL aviation grade fuel followed by four blends of automotive grade fuel. A comprehensive - sea - level - static test cell/flight test data collection and evaluation effort was conducted to review operational characteristics of a carburated light aircraft piston engine as related to fuel volatility, fuel temperature, and fuel system pressure. Sea - level - static test cell engines operations were conducted utilizing an AVCO Lycoming 0-320 engine connected to an eddy current dynamometer which facilitated data collection under various engine load conditions. In addition, real-time inflight performance data was obtained utilizing a Cessna 150/Continental 0-200A engine, while operating on test fuels No. 1 and No. 2 which had Reid vapor pressures of 14.4 psi and 8.0 psi, respectively. Originator furnished key words include: General Aviation, Automotive Fuel, Aviation Fuel, Vapor lock, Vapor-Liquid Ratio, Fuel Additives, Light Aircraft, Piston Engines, and Fuel Volatility.

Including Also the Procedures Employed in the Evaluation of Oil-shale and the Laboratory Methods in Use in the Control of the Operation of Benzol-recovery Plants
Recommended Test Procedure for Aircraft Engine Turbosupercharger Power Plants
United States Navy Aviation Mechanics' Training System for Engine Maintenance Force
Aircraft Inspection for the General Aviation Aircraft Owner
[september 16, 1940]

The aim of the Liberty was to standardize aircraft engine design. The theory was to have an engine design that could be built in several sizes and thus power airplanes for any purpose, from training to bombing. The differences in sizes would be obtained by using different numbers of cylinders in the same design. A large number of other parts would also be used in common by all resulting sizes of the engine series. The initial concept called for four-, six-, eight- and 12-cylinder models. An X-24 version was built experimentally, and one- and two-cylinder models were built for testing purposes. The engine design eventually saw use on land, sea, and in the air, and its active military career spanned the years 1917 to 1960. In addition, it provided noble service in a multitude of civilian uses, and still does even today, some 90 years after the first engine ran. This book covers the complete history of the Liberty's design, production, and use in amazing detail and includes appendices covering contracts, testing, specifications, and much more.

The Technical Examination of Crude Petroleum, Petroleum Products and Natural Gas
Aircraft Engines
The Aerothermodynamics of Aircraft Gas Turbine Engines
Dictionary of Occupational Titles
SAE Technical Paper Series