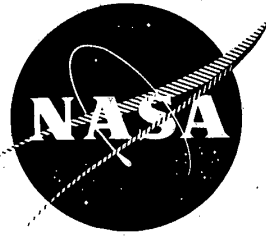


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NTIS HC 10.75

NASA CR-120,992  
LYCOMING 105.22.21



# DESIGN STUDY OF AN AIR PUMP AND INTEGRAL LIFT ENGINE ALF-504 USING THE LYCOMING 502 CORE

by

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prepared for

**NATIONAL AERONAUTICS AND SPACE ADMINISTRATION**

July 1972

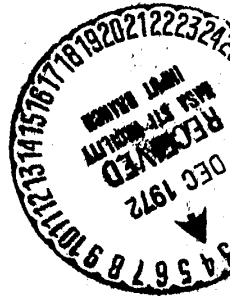
CONTRACT NAS 3-15696

NASA Lewis Research Center  
Cleveland, Ohio

Laurence W. Gertsma, Project Manager

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(NASA-CR-120992) DESIGN STUDY OF AN AIR  
PUMP AND INTEGRAL LIFT ENGINE ALF-504  
USING THE LYCOMING 502 CORE D. Rauch  
(Avco Lycoming Div.) Jul. 1972 172 p  
CSCL 131 G3/15  
Unclas  
47926  
N73-13471



169

1. Report No. NASA CR-120, 992	2. Government Accession No.	3. Recipient's Catalog No.	
4. Title and Subtitle DESIGN STUDY OF AN AIR PUMP AND INTEGRAL LIFT ENGINE ALF-504 USING THE LYCOMING 502 CORE		5. Report Date July 1972	6. Performing Organization Code
		8. Performing Organization Report No. Lycoming Report No. 105.22.21	
7. Author(s) Dale Rauch		10. Work Unit No.	
9. Performing Organization Name and Address  Avco Lycoming Division Stratford, Connecticut 06497		11. Contract or Grant No. NAS 3-15696	
		13. Type of Report and Period Covered Contractor Report	
12. Sponsoring Agency Name and Address National Aeronautics and Space Administration Washington, D. C. 20546		14. Sponsoring Agency Code	
		15. Supplementary Notes  Prepared in cooperation with Project Manager, Laurence W. Gertsma, NASA Lewis Research Center, Cleveland, Ohio	
16. Abstract  Design studies were conducted for an integral lift fan engine (ALF-504) utilizing the Lycoming 502 fan core with the final MQT power turbine. The fan is designed for a 12.5 bypass ratio and 1.25:1 pressure ratio, and provides supercharging for the core. Maximum sea level static thrust is 8370 pounds with a specific fuel consumption of 0.302 lb/hr-lb. The dry engine weight without starter is 1419 pounds including full-length duct and sound-attenuating rings. The engine envelope including duct treatment but not localized accessory protrusion is 53.25 inches in diameter and 59.2 inches long from exhaust nozzle exit to fan inlet flange.  Detailed analysis includes fan aerodynamics, fan and reduction gear mechanical design, fan dynamic analysis, engine noise analysis, engine performance, and weight analysis.			
17. Key Words (Suggested by Author(s))  High bypass ratio fan engine		18. Distribution Statement  Unclassified-unlimited	
19. Security Classif. (of this report) Unclassified	20. Security Classif. (of this page) Unclassified	21. No. of Pages 171	22. Price* \$3.00

\* For sale by the National Technical Information Service, Springfield, Virginia 22151

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FOREWORD

The work reported herein was conducted at Avco Lycoming Division, Stratford, Connecticut under NASA Contract No. NAS3-15696. The study was conducted under the management of the NASA Lewis Research Center with Mr. Laurence Gertsma as project manager.

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ABSTRACT

Design studies were conducted for an integral lift fan engine (ALF-504) utilizing the Lycoming 502 fan core with the final MQT power turbine. The fan is designed for a 12.5 bypass ratio and 1.25:1 pressure ratio, and provides supercharging for the core. Maximum sea level static thrust is 8370 pounds with a specific fuel consumption of 0.302 lb/hr-lb. The dry engine weight without starter is 1419 pounds including full-length duct and sound-attenuating rings. The engine envelope including duct treatment but not localized accessory protrusion is 53.25 inches in diameter and 59.2 inches long from exhaust nozzle exit to fan inlet flange.

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