



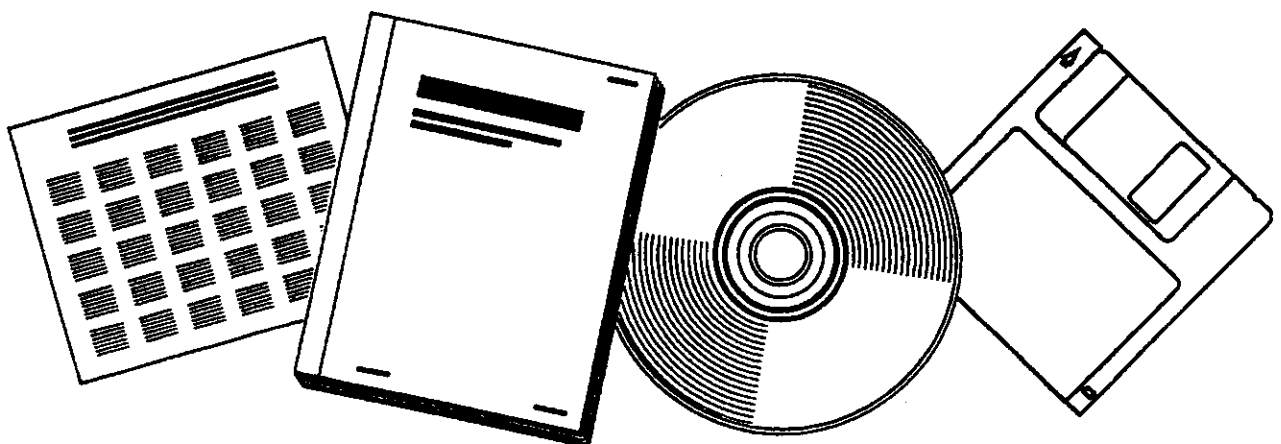
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IMPACT STUDY OF SYNTHETIC AND ALTERNATIVE FUEL USAGE IN ARMY AIRCRAFT PROPULSION SYSTEMS

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IMPACT STUDY OF SYNTHETIC AND ALTERNATIVE FUEL USAGE IN ARMY AIRCRAFT PROPULSION SYSTEMS

**FINAL REPORT
No. MED134**

By

**C.A. Moses
M.L. Valtierra**

**Southwest Research Institute
Energy Systems Research Division
San Antonio, Texas**

Under Contract to

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1440 Parkway Ave
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Aircraft fuels	Engine fuel system performance	Fuel hydrogen content
Alternate fuels	Aircraft fuel system durability	Fuel aromatic content
Gas turbine engines	Hot-section durability	Fuel thermal stability
Engine performance	Elastomer Compatibility	Fuel viscosity
Engine durability	Cold-day ignition	Fuel lubricity
		Fuel composition
20. ABSTRACT (Continue on reverse side if necessary and identify by block number)		
<p>→ The U.S. Army is concerned about the quality of future aircraft fuels and their compatibility with current engines and aircraft fuel systems. This impact study of synthetic and alternate fuel usage on Army aircraft propulsion and fuel systems addresses four technical areas:</p> <p>(1) the fuel scenario for Army aviation gas turbine fuels; → (over)</p>		

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20. Abstract (Cont'd)

- (2) the effects of initial properties on the performance and durability of engine and fuel system components;
- (3) the identification of engines and fuel system components used in Army aircraft and their interface with the fuel; and
- (4) a review of qualification and certification procedures.

FOREWORD

This work was conducted during the period October 1980 through June 1981 under Contract No. N00140-80-C-2269 to the U.S. Naval Air Propulsion Center, Trenton, N.J., with monies MIPR'd from the U.S. Army Mobility Equipment Research and Development Command, Energy and Water Resources Laboratory, Fort Belvoir, Va. The USAMERADCOM technical monitor was Mr. J. V. Mengenhauser and the NAPC technical monitor was Mr. P. A. Karpovich.



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