

SECURITY CLASSIFICATION OF THIS PAGE

AD-A226 893			1b. RESTRICTIVE MARKINGS	
2b. DECLASSIFICATION / DOWNGRADING			3. DISTRIBUTION / AVAILABILITY OF REPORT Approved for public release; distribution is unlimited	
4. PERFORMING ORGANIZATION REPORT NUMBER(S)			5. MONITORING ORGANIZATION REPORT NUMBER(S) AFOSR-TR- 00 0061	
6a. NAME OF PERFORMING ORGANIZATION School of Mechanical Engineering Purdue University		6b. OFFICE SYMBOL (if applicable)	7a. NAME OF MONITORING ORGANIZATION AFOSR/NA	
6c. ADDRESS (City, State, and ZIP Code) Thermal Sciences and Propulsion Center Purdue University West Lafayette, Indiana 47907			7b. ADDRESS (City, State, and ZIP Code) Building 410, Bolling AFB DC 20332-6448	
8a. NAME OF FUNDING / SPONSORING ORGANIZATION AFOSR/NA		8b. OFFICE SYMBOL (if applicable) NA	9. PROCUREMENT INSTRUMENT IDENTIFICATION NUMBER AFOSR 86-0305 88-0061	
8c. ADDRESS (City, State, and ZIP Code) Building 410, Bolling AFB DC 20332-6448			10. SOURCE OF FUNDING NUMBERS	
			PROGRAM ELEMENT NO. 61102F	PROJECT NO. 2308
			TASK NO. A2	WORK UNIT ACCESSION NO.
11. TITLE (include Security Classification) Research as part of the Air Force Research in Aero-Propulsion Technology (AFRAPT) Program (u)				
12. PERSONAL AUTHOR(S) Sanford Fleeter				
13a. TYPE OF REPORT Final Technical		13b. TIME COVERED FROM 5 Aug 89 TO 1 Oct 90	14. DATE OF REPORT (Year, Month, Day) 90, 8, 1	15. PAGE COUNT
16. SUPPLEMENTARY NOTATION				
17. COSATI CODES			18. SUBJECT TERMS (Continue on reverse if necessary and identify by block number)	
FIELD	GROUP	SUB-GROUP	Gas Turbines, Propulsion, Combustion	
			this	
19. ABSTRACT (Continue on reverse if necessary and identify by block number) Nine graduate students participated in the Air Force Research in Aero Propulsion Technology (AFRAPT) Program during the time period from August 1989 through August 1990. Two students have completed their M.S.M.E. programs and are currently employed at one of the AFRAPT participating companies. Four students have nearly completed their thesis research, with one student having withdrawn. The other two continuing and new students have initiated their thesis research and are making good progress.				
20. DISTRIBUTION / AVAILABILITY OF ABSTRACT <input checked="" type="checkbox"/> UNCLASSIFIED / UNLIMITED <input checked="" type="checkbox"/> SAME AS RPT. <input checked="" type="checkbox"/> DTIC USERS			21. ABSTRACT SECURITY CLASSIFICATION Unclassified	
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DTIC ELECTE SEP 27 1990

* 90 00 25 086 (u)

ANNUAL SUMMARY REPORT

August 1989 - August 1990

RESEARCH AS PART OF THE AIR FORCE RESEARCH IN AERO PROPULSION TECHNOLOGY (AFRAPT) PROGRAM



88-0261
GRANT AFOSR ~~86-0305~~

Sanford Fleeter

August 1990

Thermal Sciences and Propulsion Center
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West Lafayette, Indiana 47907

Prepared for

Directorate of Aerospace Sciences
Air Force Office of Scientific Research

Available For	
Public	<input checked="" type="checkbox"/>
DRD For	<input checked="" type="checkbox"/>
Unannounced	<input type="checkbox"/>
Justification	
By _____	
Distribution/	
Availability Codes	
Dist	Avail and/or Special
<i>A-1</i>	

The status of the nine graduate students who participated in the Air Force Research in Aero Propulsion Technology (AFRAPT) Program at Purdue during the time period from August 1989 through August 1990 is summarized in the following.

Michael Andruszkiewicz

Thesis Advisor: Professor Sanford Fleeter
Research Topic: Aero-Mechanics of Advanced Turbomachine Blade Rows, including Separated Flow Effects
Company Affiliation: General Electric - Cincinnati
Current Status: Mr. Andruszkiewicz has completed his research and is currently writing his thesis.

Scott Brooks

Thesis Advisor: Professor Sanford Fleeter
Research Topic:
Company Affiliation: General Electric - Cincinnati
Current Status: Mr. Brooks decided not to pursue an M.S. M.E. degree and has dropped out of Purdue and the AFRAPT Program.

Greg Henderson

Thesis Advisor: Professor Sanford Fleeter
Research Topic: Forced Response Unsteady Aerodynamics of Three Dimensional Blade Rows
Company Affiliation: General Electric - Cincinnati
Current Status: Mr. Henderson is in the process of completing the experimental part of his Ph.D. Thesis research. Based on his continued excellent performance, he is considered to be one of our most outstanding graduate students.

Kuk Kim

Thesis Advisor: Professor Sanford Fleeter

Research Topic: Flow Induced Structural Dynamics of Multistage Compressor Blade Rows

Company Affiliation: General Electric - Cincinnati

Current Status: Ms. Kim has completed the series of experiments for her M.S.M.E. Thesis research and is currently completing the data analysis and writing of her thesis. Ms. Kim will be continuing both her affiliation with the AFRAPT Program and her graduate studies at Purdue University, pursuing a Ph.D. under the direction of Professor Sanford Fleeter

Patrick Lawless

Thesis Advisor: Professor Sanford Fleeter

Research Topic: Active Suppression of Aerodynamic Instabilities

Company Affiliation: Pratt & Whitney - Florida

Current Status: Mr. Lawless has very successfully completed his coursework and Ph.D. qualifying exams. An incompressible flow model for active control of rotating stall has been developed. Also, the planning of the experimental portion of his research is nearly complete, with the needed experimental hardware fabrication in process.

Vernon McFarland

Thesis Advisor: Professor W. G. Tiederman

Research Topic: Periodic Unsteady Flow in Turbine Blade Rows

Company Affiliation: Allison Gas Turbines

Current Status: Mr. McFarland has successfully completed his M.S.M.E. program and is currently employed at Allison Gas Turbines.

Mathew D. Montgomery

Thesis Advisor: Professor Sanford Fleeter
Research Topic: Unsteady Flow in Turbomachine Blade Rows
Company Affiliation: United Technologies Research Center
Current Status: Mr. Andruszkiewicz has completed his research and is currently writing his thesis.

Jack White

Thesis Advisor: Professor W.G. Tiederman
Research Topic: The Effect of Adverse Pressure Gradient on the Turbulent Burst Structure in Low Reynolds Number Equilibrium Boundary Layer Flows
Company Affiliation: Allison Gas Turbines
Current Status: Mr. White has successfully completed his M.S.M.E. program and is currently employed at Allison Gas Turbines.

James Wolff

Thesis Advisor: Professor Sanford Fleeter
Research Topic: Unsteady Viscous Flows in Airfoil Cascades
Company Affiliation: Garrett Engine Division
Current Status: Mr. Wolff has completed his M.S.M.E. program. Also, he has very successfully completed the majority of his Ph.D. coursework and has initiated his CFD thesis research.