

Summer, 1987

**MECHANICAL AND  
AEROSPACE  
ENGINEERING**

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*An occasional newsletter for the alumni and friends of the Department of Mechanical and Aerospace Engineering (MAE) at West Virginia University.*

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Dear Alumni:

As Chairman of the MAE Department, I am pleased to send you current information about activities in the College of Engineering. We are attempting to establish a continuous means of contact with you. This newsletter will be one way we can keep in touch, and I am certain that benefits will be gained for current students, alumni, and the department.

With a great deal of "catching up" to accomplish, the enclosed information will be but a sample of our activities. We will supplement it as often as possible and will reestablish our mailing lists with current addresses. If you can provide information on any of your friends it would be a great help to us. A reply form (data page) is attached, with a list of graduates from your class. Of course, we always hope to hear about your activities and will provide news of graduates in future issues.

Please stop by and see us when you can. We will be pleased to show you around and demonstrate the progress we have made.



Donald W. Lyons  
Chairman

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**RESUMES**

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From time to time the Department and College have the need to identify graduates who have occupations in various career sectors. Often, awards or honorary designations are being considered. It would be helpful to us if those of you who have prepared recent resumes could send copies in addition to the "data page" attached to this newsletter. Thanks!

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## COLLEGE CELEBRATES CENTENNIAL, 1887-1987

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The College of Engineering at West Virginia University began 100 years ago, and 1987 will be a year of recognizing the rich heritage that developed during the College's first century. After six years of research and development by Professor Emeritus Edwin C. Jones, Sr. (Class of 1925) and history graduate student Nancy Moore, the College history will be published this year. Entitled **The First Hundred Years: A Century of Commitment**, the book will include many photographs and interesting facts.

On May 15, the annual emeritus luncheon of the College of Engineering honored alumni who graduated in 1937 and earlier years. On October 16, the annual College of Engineering homecoming dinner and dance will be a special time for all alumni of College.

Groundbreaking ceremonies for the Engineering Research Building occurred June 26. Construction is expected to start this summer, with completion in 1989.

The Centennial Capital Campaign of the College of Engineering will be launched later this year to raise funds for endowed professorships and equipment for the renovated Engineering Sciences Building and the new Engineering Research Building.

The College will also have a tent adjacent to the Mountaineer football stadium prior to each home game in 1987. Lunch may be purchased there, and it should be a good place to meet and greet fellow alumni and other friends of the College.

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## ADMINISTRATIVE CHANGES

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Dr. John T. Jurewicz, a faculty member since 1978, was named Associate Dean for Academic Affairs and Research, effective September 1, 1986. In making the appointment, Dean Curtis J. Tompkins stated that "Professor Jurewicz is a leader in research and graduate studies. He has substantial understanding of the essential ingredients of engineering and is currently major advisor of five doctoral students. As WVU continues to increase its emphasis on research and graduate studies, Dr. Jurewicz, with his proven skills of working well with students and faculty, is a natural choice for this leadership position."

Dr. Jurewicz, a professor of mechanical and aerospace engineering, was chosen Researcher of the Year in the College in 1985. He received his Ph.D. degree in engineering science from Washington State University in 1976. He also earned degrees in mathematics from King's College, aerospace engineering from the Pennsylvania State University, and mechanical engineering from Washington State University. Prior to joining WVU, Dr. Jurewicz served as a faculty member at Olympic College and the Institute of Paper Chemistry and as a research scientist with the Kimberly-Clark Corporation.



Dr. Thomas R. Long was promoted to Associate Dean for Academic Affairs. In this capacity, he will be responsible for financial and personnel management as well as undergraduate programs. He has been a member of the faculty since 1958, serving as coordinator of the freshman engineering program and assistant dean for the past five years. He received his BS and MS degrees from WVU as well as his EdD in Engineering Education. Dr. Long has been both an outstanding teacher and outstanding advisor for the University.



Professor Robert D. Slonneger was promoted to Assistant Dean for Undergraduate Programs and Student Affairs. He has been a faculty member since 1954 and has served the College as Associate Chairman of Mechanical & Aerospace Engineering and as Coordinator of the Freshman Program. He will continue with freshman program responsibilities.

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## DEPARTMENT OF DEFENSE CONTRACT

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The College of Engineering has been awarded a contract for \$1.2 million by the Department of Defense to formulate feasibility and design studies promoting the characteristics of the Stiller-Smith engine, which was invented by two faculty members--Alfred F. Stiller and James E. Smith. The contract is to be initiated and coordinated through the Tank Automotive Command (TACOM), Warren, Michigan, and the work will be performed by Mechanical & Aerospace Engineering faculty members Drs. Nigel Clark, Kwi Lee, Victor Mucino, Jacky Prucz, and Nithi Sivaneri. The principal investigator for the project is Dr. Smith, co-inventor of the device.

The research will be done in two phases: phase one involves concept development and analysis and phase two will be the production of engine designs for applications specified by TACOM. Various sizes of engines will be studied for several military applications such as light and heavy transport and tanks.

The research is divided into three main technical areas--thermal and combustion sciences, dynamics, and materials. A separate system analysis group will be the liaison between the College and TACOM. The engine offers several exciting possibilities and advantages over conventional engines and the research will attempt to define these advantages.

**More Engine News:** Perhaps (if you are a cable subscriber) you saw a segment on the CNN News recently about the Stiller-Smith engine. Charles Crawford, science and technology reporter for the cable news show, visited Morgantown recently to film a model of the engine in action. The resulting segment was informative and well done.



Left to right: Dr. Alfred F. Stiller and James E. Smith, Charles Crawford of CNN News, and photographer discuss the revolutionary engine during taping.

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## ENERGY CONSERVATION RESEARCH IN PROGRESS

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What do the West Virginia Fuel and Energy Office, Monongahela Power Company, Hope Gas Company, WVU Extension Service, and a group of Mechanical Engineering seniors have in common? A project to study efficiency of the latest in residential heating systems and to help the public understand energy efficiency.

Three students under the direction of Professor Emil Steinhardt and Associate Professor Russell Dean will spend next year working on a multi-phase project. On the technical end, they will develop data on the performance of several electric heat pumps which Mon Power has installed in one building and a high-efficiency gas heating unit which Hope Gas has installed in another at the State 4-H Camp at Jackson's Mill.

In addition to collecting research data, the project involves developing a real-time data display which will show visitors how outside conditions and internal load affect the performance of the systems.

Future plans for the Jackson's Mill project include the development of an on-line computer data base on energy conservation, as well as public access building analysis programs to assist West Virginia consumers and builders in assessing potential building improvements.

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## TANG RECEIVES WEAVER AWARD

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Alan Tang, a Graduate Teaching Assistant in the Department of Mechanical and Aerospace Engineering, has received the George W. Weaver Award for the 1985-86 academic year. This award was established to honor the most outstanding instructor of the year in engineering mechanics courses.

The recipient of this award was selected by an independent faculty committee based upon a review of the performance of the students Mr. Tang taught and the ratings that students complete in a confidential review of faculty at WVU.

The award was begun by the Weaver family as a memorial to the former professor, Assistant Dean of the college, and a faculty member well remembered for his personal contributions to achieve excellence in the teaching of undergraduate engineering mechanics courses. The recipients of the award receive \$150 and have their names engraved on a permanent plaque which is displayed in the halls of the Engineering Sciences Building.

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## CESSNA 206 UPDATED

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Since 1967, WVU's Aerospace Engineering students have had an opportunity to gain first-hand experience in flight testing in N3435L, the College's Cessna 206-U single engine airplane. During the summer of 1986, the airplane was fitted with a new multichannel FM telemetry data acquisition system.

The original instrumentation, installed by the U.S. Navy's Patuxent River Air Test Center, was "state of the art" in the 1960's. It was still capable of giving students practice in working with current industrial practice, but Dr. Jerome B. Fanucci, the principal instructor for the course, is pleased with the more advanced system.

The performance record of our graduates who have worked at the Naval Air Test Center has been excellent, so the Center agreed to invest in future graduates by updating our equipment. Our airplane now has a system capable of sensing information and relaying it directly to computers on the ground. The sensors measure 27 different variables. Measurements are combined through a "multiplex" unit and transmitted through VHF-FM radio to a ground station in the WVU hanger.

The data available at any time include aerodynamic variables such as airspeed and altitude, engine information such as rpm and manifold pressure, the position of flight controls, and dynamic information on roll rates, accelerations, and so on.

The old system limited the number of students involved in any given test to the four or five students who can be carried in the aircraft. The new system will allow an additional group of students to observe the progress of the tests from the ground as they take place. In addition, with data recorded on computer disks, students will be able to perform more detailed data reduction analyses and to plot transient performance curves.

Dr. Fanucci has been working with Drs. G. Michael Palmer and John Loth and Pilot Bill Zeigler, Engineering Technician Lee Metheney, and several students on the complex tasks of setting up the ground station and calibrating the many subsystems.

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## MAE FACULTY

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### Professors

Richard Bajura, P.E., Ph.D. (U.N. Dame). Fluids engineering.  
Jerome B. Fanucci, Ph.D. (Penn St. U.). Fluid dynamics, Aerodynamics, Flight testing, Magnetohydrodynamics, Multiphase flow.  
Eric K. Johnson, P.E., Ph.D. (U. Wisc.). Heat transfer, Combustion, Thermodynamics.  
John T. Jurewicz, Ph.D. (Wash. St. U.). Experimental fluid mechanics, Gas-solid flows.  
John Kuhlman, Ph.D. (Case West. Res. U.). Fluid mechanics.  
Thomas R. Long, Ed.D. (WVU). Engineering design.  
John L., Loth, P.E., Ph.D. (U. Toronto). Aerospace systems, Combustion.  
Donald W. Lyons, Ph.D. (Ga. Tech) - *Chair*. Manufacturing systems engineering, Engineering instrumentation.  
Nathan Ness, Ph.D. (Poly. Inst. NY)-*Emeritus and Visiting*. Aerodynamics, Thermodynamics.  
Robert D. Slonneger, P.E., M.S.M.E. (U. Tex.). Thermodynamics, Computer applications.  
John E. Sneckenberger, P.E., Ph.D. (WVU). Mechanical design and automation.  
Emil J. Steinhardt, P.E., Ph.D. (U. Pitt). Engineering systems design, Energy management.  
Richard E. Walters, Ph.D. (WVU). *Associate Chair*. Aerospace engineering.

### Associate Professors

Ismail Celik, Ph.D. (U. Iowa). Fluids engineering.  
Nigel Clark, Ph.D. (U. Natal, So. Africa). Fluidized bed combustion, Particle dynamics.  
Russel K. Dean, Ph.D. (WVU). Engineering mechanics.  
Kenneth H. Means, P.E., Ph.D. (WVU). Kinematics, Dynamics and stability, Friction and wear.  
G. Michael Palmer, Ph.D. (WVU). Instrumentation, Microprocessor applications.  
Nithiam T. Sivaneri, Ph.D. (Stanford U.). Aerospace engineering.  
Charles Stanley, P.E., Ph.D. (WVU). Bioengineering, Microprocessor applications.  
Wallace Venable, P.E., Ed.D. (WVU). Engineering mechanics.

### Assistant Professors

Larry Banta, Ph.D. (Ga. Tech.). Robotics, Automation.  
Sunil Kale, Ph.D. (Stanford U.)-*Research*. Fluid mechanics, Energy conversion, Thermal sciences.  
Margaret Lyell, Ph.D. (U. So. Calif.). Fluid mechanics.  
Gary Morris, Ph.D. (WVU). Multiphase fluid mechanics, Aerodynamics.  
Victor Mucino, D.E. (U. Wisc.-Mil.). Engineering design.  
Jacky Prucz, Ph.D. (Ga. Tech.). Structural dynamics, Composite materials, Experimental mechanics.  
James E. Smith, Ph.D. (WVU). Mechanical design.

**DATA PAGE**

Today's Date: \_\_\_\_\_

Please take a minute to fill out some of the data we need to bring our records up to date;  
detach, fold, tape, and mail.

W.V.U. Degree(s) \_\_\_\_\_

Name: \_\_\_\_\_ W. V. U. Graduation (Mo., Yr.) \_\_\_\_\_

Present Home Address: \_\_\_\_\_  
\_\_\_\_\_

Work Address: \_\_\_\_\_ (Firm Name)

\_\_\_\_\_ As of:

\_\_\_\_\_ (Date Started)

Phone(s): Home \_\_\_\_\_ Work \_\_\_\_\_

Position Title : \_\_\_\_\_

Advanced Schooling: School Dept. Dates Degree?

News of Family, Hobbies, Work, Etc.:

Other W.V.U. A.E. and M.E. Graduates that you know whereabouts:

Name \_\_\_\_\_ Company \_\_\_\_\_ Company or Home Address

Dept. of Mechanical and Aerospace Engineering  
West Virginia University  
P.O. Box 6101  
Morgantown, WV 26506-6101

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FIRST  
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MAIL

PLEASE FORWARD

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FROM: \_\_\_\_\_

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TO: Dr. Richard E. Walters  
Dept. of Mechanical and Aerospace Engineering  
West Virginia University  
P. O. Box 6101  
Morgantown, WV 26506-6101