

THE
MORGANTOWN



MOUNTAINEER MISSILE

VOL 1 NO 2

SUMMER

1960-1961

A newsletter for graduates of the West Virginia University Aero-Space Engineering Department prepared by the members of Sigma Gamma Tau, Aeronautical Engineering Honorary. The purpose of this letter is to keep Alumni of the Department informed of the Department's development and of the news of their classmates.

To Our Alumni:

The response to the first Mountaineer Missile was quite gratifying. We received a good many encouraging letters which left no doubt in our minds as to whether or not we should continue with it. In some cases, the new departmental organ evoked letters containing suggestions and criticisms. Let me assure all of you that both of these are most welcome.

We expect to make some extensive changes in the curriculum during the next year. Your suggestions here will also be welcomed. I am also happy to report that William Squire will join our staff on September 1 as Professor of Aero-Space Engineering. Professor Squire comes to us from Southwest Research Institute at San Antonio, Texas. His major interests are gas dynamics, viscous flow aerodynamics and combustion. We feel that he will be a great asset to the department, particularly in our graduate program.

Remember that the Department of Aero-Space Engineering is composed of students, faculty and alumni. We still need you. Keep in touch.

L. Z. Seltzer

WE'VE MOVED

The new facilities housing the College of Engineering will be occupied for classes in September of this year. The dedication

ceremonies for the new buildings will be held Thursday and Friday, October 5-6. A main feature of the dedication will be a conference presented by the College of Engineering and the West Virginia Society of Professional Engineers under the auspices of the Executive Office of the President of the United States and the Office of Civil and Defense Mobilization. The topic of the conference will be "Industrial Future Through Engineering Manpower in the 1960's".

The first paper will be presented on Thursday afternoon, and the subject will be manpower trend of the 1960's, based on the 1960 census and the projections of the federal government, with special emphasis on specialized personnel. A panel will follow discussing the new federal manpower programs and programs of American technical assistance abroad. Thursday afternoon's activities will be followed by a cocktail party and a buffet dinner in the evening. A panel will kick off Friday morning's activities, the topic being the effect of the new federal manpower and technical assistance programs on the users and producers of specialized personnel in West Virginia. The second paper will be given on "The Emerging Role of a Computer". A luncheon will follow the morning's activities, and the conference will be highlighted by a cocktail party and banquet Friday evening.

Following the dedication activities, there will be a football game on Saturday at Mountaineer Field. Virginia Tech will provide the opposition. Ladies are cordially

invited to attend the ceremonies, and there will be a special program for them during the conference.

DEPARTMENT NEWS

With the acceptance of the new engineering buildings, February 15, 1961, the installation of equipment was initiated. The department's shop was moved from the Morgantown Airport to the Aerodynamics Laboratory building. There are now separate rooms for the wood shop, metal shop, and storage.

The low speed wind tunnel was also moved into the new laboratory. During the reconstruction of this tunnel, two four-foot long sections were added. This modification was made to improve the flow pattern in the test section. The tunnel will be ready for classes starting in the fall of 1961.

Under construction at the present time is the new continuous flow supersonic wind tunnel. The tunnel, capable of Mach numbers to 1.5, is powered by three 150 hp vacuum pumps. There are four pumps installed, however, leaving one on stand-by at all times. A by-pass system will be installed to facilitate the change of test models without shutting down the power supply.

A wing and the tail assembly from a surplus Republic F-84F will be mounted in the Structures Laboratory. Static deflection tests will be made on them by the use of hydraulic jacks.

The department has purchased a new Cessna 150 to be used for flight instruction. The airplane is equipped with a full instrument panel, including a VHF transmitter-receiver for radio navigation-communications.

ACCREDITATION

Dr. Harold M. DeGroff, Head of the School of Aeronautical and Engineering Sciences at Purdue University, was on campus to inspect the department's facilities and curriculum. Dr. DeGroff's recommendations and report have been forwarded to the Engineers' Council for Professional Development (ECPD)

for evaluation. The department is one of about forty in the United States with an accredited curricula. This means much to a graduate of West Virginia who desires to pursue advanced study at another institution.

FIRST MSAE DEGREE

The first graduate student to complete the requirements for the Master of Science degree in Aero-Space Engineering, Lu-Chung Chang, prepared his research paper on "Heat Transfer of a Rotating Sphere in an Axial Airstream". As the heat transfer rates for a rotating body of revolution are of considerable importance for the flight of bodies with spin, Lu-Chung Chang made a study of the forced convection of a rotating sphere in an axial airflow in order to facilitate an understanding of a general case of the problem. The boundary layer thickness and Nusselt number were investigated at moderate velocities. In recent years, many investigators, with a view to more general cases of bodies of revolution, have made remarkable progress in this field. But most of their effort was devoted to the high speed range. The problem of a heated rotating body of revolution in an axial airstream at low Mach numbers seems to have been neglected. This was one of the reasons for Lu-Chung Chang's research.

The I. A. S. is continuing to present very fine and interesting programs. One of them the past year was a talk on "Space and Re-entry Vehicle Structural Design Criteria", by Robert E. Wagner of McDonnell Aircraft. His presentation summarized the primary considerations in providing adequate light-weight structures for space and re-entry vehicles and indicated the relative importance of structurally significant parameters. Structural loads and temperatures resulting from atmospheric flight and terrestrial landing are of primary importance during the launch, re-entry, recovery, and/or landing phases of the craft. While out of the earth's atmosphere, such effects as radiation, space debris, and extra-terrestrial landings

result in effects which the structure must either sustain or be protected against. Mr. Wagner's talk was very interesting and gave us an insight into some of these structural problems.

We have lost contact with a few of our graduates. If anyone knows the address of any of the following graduates, please send it to the department as we would like to keep them informed of events at the University. Their graduation year and last known addresses are also included.

Carl Richard Huss '49
95 - 19th St.
Wheeling, W. Va. Langley Field, NASA

David F. Tomas, Jr. '50
74 - 13th St.
Wheeling, W. Va. Langley Field, NASA

Fred Robert Morrison '49
5145 Rawlins St.
Dallas 19, Texas

AERO GRADUATES AT BOEING

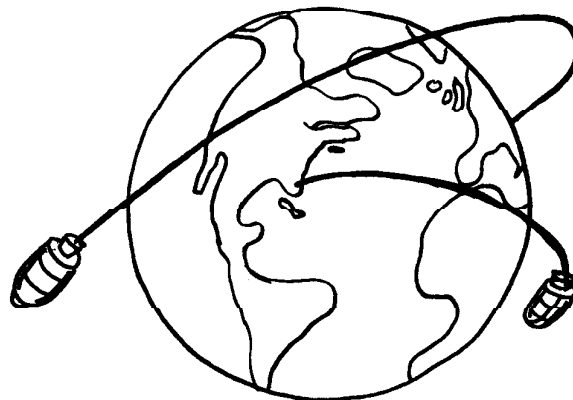
The contingent of Aero graduates at Boeing in the Seattle area was augmented by four from the June '61 class. These new additions to the fishing grounds of the Northwest are Tom Lane, Richard Dotson, Istvan (Steve) Feher, and J. Carl Simmon. Others at Boeing include

Ralph C. Cokeley '48, Test Pilot
Don Brown '56, Wind Tunnel
Oscar Desper '59, Dyna-Soar
Carrol Gambill '59, 707
Robert Hammond '57, Wind Tunnel
Ted Porada '60, Minuteman
John Watkins '59, Roving assignment
Michael Wickline '60, 727

Michael Fourney '58, and William Fourney '62, are also working at Boeing this summer. Mike is working on a Ph. D. at Cal Tech and brother Bill is earning the grocery money for his last undergraduate year at W. V. U.

o o o

We're indebted to John Watkins for many of the Seattle addresses. Our first Mountaineer Missile was well received and allowed us to get many addresses up to date. If you have any news you'd like to pass on through this media to your classmates, let us know.



THE NEW FRONTIER

BHUJ