

Sky is not limit in ARF research

Further insight into the mysteries of the upper atmosphere will soon be available through the use of a radiation recording instrument now in the development stage at the Armour Research Foundation. The new development is a metal sphere, nicknamed the cannonball, which will be ejected from a rocket at a height of 70 miles. The sphere contains three stabilizing gyroscopes, 14 temperature sensors, and a camera unit.

The United States Air Forces, sponsors of the project, approved news releases by Dr. Severin Raynor of ARF in July, 1949. Results of the use of the instrument may not be immediately available because of the military significance of the data.

Stabilization and suitable instrumentation are the principal problems now being solved by Dr. Raynor and his staff of mechanical and electrical engineers, physicists and laboratory technicians. Gyroscopes provide the answer to the question of how to maintain a steady, controlled fall.

Radiation measurements will be made by button-shaped temperature sensors on the surface of the sphere and the data will be recorded by a specially designed camera. After the film is used up the camera unit is in turn ejected from the cannon ball and parachutes slowly to the ground. Its location is determined by tracking a small, attached, high frequency radio transmitter.

Prior to the advent of rockets

the only methods of obtaining descriptive data of the little-known upper atmosphere were spectroscopy and radiowave reflection from the ionosphere. Unmanned balloons cannot rise very high without bursting and manned balloons still less. In 1935 man rose to the height of 13.7 miles carrying spectrum analysis equipment where quantitative and qualitative measurements of the gases present were made. Layers of ozone, water vapor, and what is supposedly cosmic dust have been identified. It is these layers, which, with the help of lower atmosphere dust, disperse and absorb the sun's most powerful rays, thus protecting the earth from destruction.

At the height at which the cannonball will start its descent the temperature will be about 180 degrees Fahrenheit, according to ARF sources. Another source of information in agreement with this hypothesis is a captured German document prepared by eminent meteorologists in Europe during the

war. The translated papers also maintain that the aurora borealis and its southern counterpart, the aurora australis, are caused by the intense radiation of rarefied gases. Spectroscopy has shown these gases consist chiefly of oxygen and nitrogen. Helium and hydrogen, formerly believed to inhabit the stratosphere because of their lightness, are not present at increased temperatures, they attain a sufficient velocity to escape the earth's gravitational pull.

Thunder's booming voice is intensified by reflection from ionized layers at rocket altitudes.

Density and height of layers of the ionosphere have been obtained from American Army check stations all over the world which propagate short-wave radio frequencies into the upper atmosphere and monitor reflections. The higher the frequency the further the waves travel before reflection occurs.

It is hoped the cannonball will corroborate these evidences.

Human relations debate to rage

Sociologist Albert Biderman and BE Instructor James W. Fairchild, of the industrial personnel counseling firm of Fairchild and Harrison, will tangle in the latest Business and Economics club debate Monday at 4 p.m. in 305M. The debate, according to the

sponsors, will "cover the field of personnel management embracing such vague terms as anatomy of organization, personnel work, social controls and labor organization, efficiency, scientific management, and even unionization of engineers."

William Harrison, also of the BE department, grudgingly promises only moral support from the sidelines while his colleague meets Biderman's challenge to their "human-relations" theories. BE club spokesmen are predicting a slugfest on the basis of past performances by the Messrs. Fairchild and Harrison. The verbal encounter is the first of a series the club will sponsor this semester.

Students in the human relations course, BE 462, are looking forward with special interest to the debate which directly involves their field of study.

Placement holds meeting to plan future program

Broadening of student cooperation with IIT's placement program will be discussed at a meeting of the Interprofessional council next week, Johnnie Best, acting chairman, has indicated. The council is composed of chief executive officers of the professional societies, who will be individually notified of the time and place of the meeting.

Also on the agenda of this IPC meeting will be election of permanent officers for the semester, furtherance of its publicity-coordination scheme, and programming of other activities. A pertinent message will be given by placement director Harold L. Minkler, Best said.

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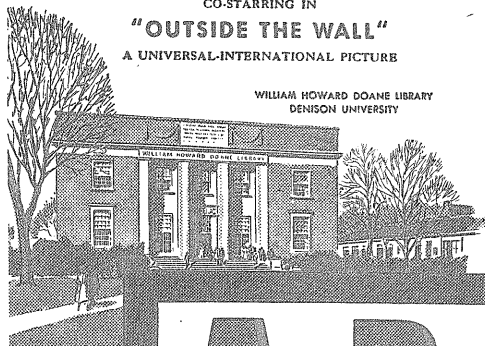
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