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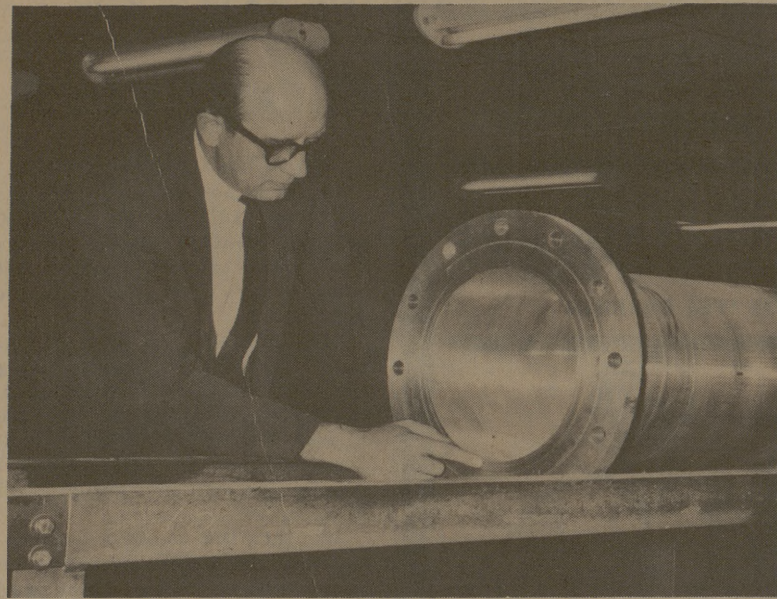
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**AEROSPACE RESEARCH FACILITY**

Dr. Richard Thomas examines a 10-foot section of shock tube under construction in the Gas Dynamics Lab. Effects of shock waves will be studied in the 12-inch, 20,000 volt facility when it is finished this spring. Thomas, an associate professor of aerospace engineering, designed the tube.

**Technologists Building Tube To Gauge Speed Spectrum**

Texas A&M soon will offer velocity research labs from "cloud hopper" to spacecraft speeds.

The Space Technology Division is constructing a 12-inch shock tube, in which aerodynamic processes of entry into a planetary atmosphere will be simulated. The atmosphere of earth, Mars or Venus can be reproduced in it.

When tube operations begin this spring, A&M will have test facilities for the extremes of man's speed spectrum. The Gas Dynamics Lab shock tube duplicates 5,000 to 35,000 miles per hour conditions.

The seven-by-ten foot wind tunnel at Easterwood Airport has a speed range to 200 miles per hour.

"I know of no university which has the facilities we will have at A&M," declared Dr. Richard E. Thomas, architect of the \$100,000 facility and associate professor of aerospace engineering.

A&M's shock tube is one of only two in the state or Southwest that is electrically driven.

To "shoot" the tube, 200,000 joules of electrical energy are discharged at 20,000 volts into a "driver." The current, stored in 70 shielded capacitors, arcs between electrodes across a helium-filled space.

Pressures up to 15,000 pounds per square inch generated by rapid heating of gas in the 2.5 inch diameter by 10 inch "driver" chamber ruptures an "x" scored diaphragm and releases into the 40-foot long tube.

Shock waves are formed like those caused by X-15 rocket planes and Gemini space capsules re-entering the earth's atmosphere.

Passage of the wave superheats an "atmosphere" placed in the tube from bottles of nitro-

gen, carbon dioxide and argon. Superheated "air" immediately behind the wave will move at almost the speed of the wave, ionize and undergo chemical change.

Among items studied, Thomas said, are magnetohydrodynamics, and plasma, heat transfer and radiation, wakes, interaction of shock waves and chemical effects on gases.

Models can be inserted into the 12-inch tube for study.

After each "shot", which will sound like a shotgun being fired, the chamber and tube must be cleaned, a new diaphragm installed and the apparatus evacuated by two pumps.

Pumps remove air from the tube to conditions equivalent to

150,000 to 250,000 feet of altitude.

"Reloading" requires about 10 minutes, Thomas calculated. Charging capacitors takes five minutes.

Highly sensitive instruments are inserted into the half-inch thick aluminum tube in pairs spaced at three-foot intervals along its length. One instrument spectroscopically analyzes the 10,000-degree heated gas.

"We hope to attract research support," Thomas commented, "and continue to expand our facilities. But the lab will be primarily to support our own mission, giving the youth of Texas as the finest aerospace engineering training in the country."

**16 Education Majors Finish Student Teacher Training**

Every semester a new group of students enroll in the student teaching program offered by the Department of Education and psychology.

Such a group is now completing its 18-week period of on-the-job teacher training. With the cooperation of local school systems 16 students were able to encounter the actual experiences of teaching prior to the time when they will be in complete charge of a class themselves.

The students teach classes in their specific fields under the guidance of a fully qualified and experienced full-time teacher. They are assigned to classes after their own capabilities and specialties are carefully reviewed.

Dr. William Stokes, director of student teachers, is responsible for matching the student, class and teacher who will supervise the student teacher. He is

also responsible for the grade but he consults the teacher to whom the students work to receive their impression of the student's performance.

A&M students taught courses in seven local schools this semester involving 12 different teaching fields.

Students assigned to Stephen F. Austin Senior High School were Leopold B. Babin, Stephen E. Chupik, Mrs. Myre Rose and Ronald D. Winn. Assigned to Anson Jones Junior High were Jimmy Nedbalek and Robert I. Scott. Philip J. Lanasa was assigned to Crockett Elementary School. Mike Laughlin taught at Lamar Junior High School.

Those assigned to A&M Consolidated Senior High School were Freddy Carlton, James L. McCollum, Mrs. Frances O'Brien and Jose Valadez. Kenneth Newman and Buddy Williams were assigned to A&M Consolidated Junior High School. Mina Simon taught at College Hills Elementary School and Joan Bar taught at A&M Consolidated Elementary School.

**Area Ag Teachers To Meet Friday**

About 120 Area 3 high school vocational agriculture teachers will gather here Friday and Saturday for their annual Mid-Winter Conference.

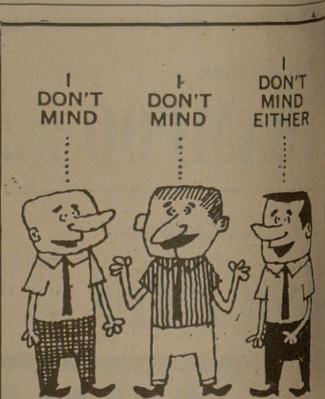
Dr. Earl Knebel, head of the Texas A&M Agricultural Education Department, said the session starts at 3:30 p.m. Friday in the Architecture Building Auditorium.

He said the meeting is held to keep teachers abreast of new programs and the latest teaching methods. Special sessions will be conducted on farm marketing and horticulture.

In addition to Knebel, Agricultural Education Department personnel participating are Dr. Earl Webb, John Holcomb and Bill Irick.

Area 3 covers counties immediately east, west and north of Houston. Billy G. Lyons of Houston is area supervisor.

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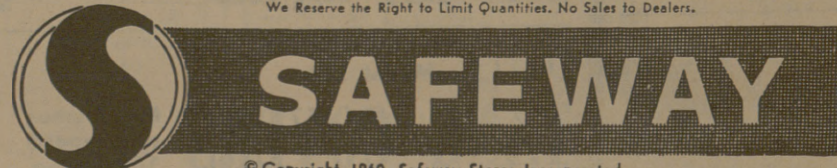
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