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CSU's New Pressure Chamber to Boost Research in Region

A unique research facility, installed today at Colorado State University, is expected to boost aerospace and biological research in the Rocky Mountain region.

The new facility is called a Hypo-hyperbaric Pressure Chamber—so-named because it can simulate both hypo (above sea level) and hyper (below the sea) pressure conditions. It is the only chamber of this type in the region and one of the few in the entire country.

According to CSU president William E. Morgan, "The chamber will greatly advance the university's growth in the biological sciences—a field in which it plans to become outstanding."

The $200,000 facility was funded by the National Science Foundation (NSF) and the State of Colorado. It has been installed in the Physiology Building which is under construction in the new Biological Sciences complex on the main campus. The Physiology Building also is supported by grants from the NSF, the state and the National Institutes of Health.

In commenting on the physiology department's new research facility, Dr. N. H. Booth, professor and head of the department, said, "Because the chamber is the only one in this area, it will serve an important role in supporting biological science activity in the Rocky Mountain region.

"We are interested in collaborating in the use of the chamber with other scientists both at the inter-departmental and the inter-university level. Our particular research interests are in the influences that altitude might have on various physiological and biological systems."

Dr. Booth visualizes that the chamber, which is capable of hypo and hyperbaric research involving both man and animals, will be use 24 hours a day in order to derive maximum utilization.

The direction and coordination of research with the chamber is under Dr. Leonard J Caranna, MD, associate professor of physiology. He also will be responsible for instruction of graduate students in the principles and applications in the use and safe operation of the complex facility.

The chamber is designed to be the safest of its kind in the world, according to Dr. Caranna. Constructed of low-carbon steel that has a working tensile strength of 17,000 pounds per square inch (psi), it is built to withstand hyperbaric pressures of over 100 psi. Pressure at sea level is 14.7 psi. The facility is capable of simulating a hypobaric condition of 150,000 feet above sea level and hyperbaric pressure of seven to eight atmospheres (approximately 230 feet) under the sea.

The chamber is cylinder, 10 feet in diameter and 30 feet long. Both the facility and the controls for operating it will be on the same room. These will include sensitive instruments to monitor the quantity of carbon dioxide, oxygen, nitrogen and helium released into the chamber.

Divided into two compartments, the facility has a main testing chamber where experiments will be conducted and the ante-chamber or personnel lock through which entrance is gained to the main section without changing its pressure. Both compartments are secured by double sets of doors which are designed to open easily within a few seconds after normal pressure state has been reached in the chamber.

There are emergency procedures for returning both from below sea level and rom high altitude conditions, as well as for maintaining a high-level pressure state should a window blow out. Porthole windows, for outside observation, are made of double sections of Herculite glass for safety purposes.

Many other safety precautions were included in the chamber construction. All welding was x-rayed to check the continuity in the sections and eliminate the possibility of leaks. Fire retardant paint is used throughout. All pumps in the basement below the chamber will be compatible with oxygen and equipped with special oil filters which prevent oil from entering the chamber. In the event of low oxygen supply or sudden high temperatures, an alarm system will sound an alert.

Communication will be maintained by means of a two-way system with spacecraft type of dynamic microphones. The air conditioning system will vent directly to the outdoors any odors, carbon dioxide and particle matter such as dust and dandruff.

The new facility, constructed by the Pittsburg Des Moines Steel Co., was shipped from Pittsburg 10 days ago. Timing of the arrival of the chamber was critical because of the necessity of correlating it with the Physiology Building construction schedule. In February the steel company's crew will return to Ft. Collins to begin the complicated task of putting the chamber in operation. Completion date has been set for May 1, 1966.

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SECTION D

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GROWING — School lunch milk is available to 19 out of 20 children in the nation's public and private schools, the U. S. Department of Agriculture has found. Under the program, milk is sold for about a nickel a pint to students who can pay and goes free to those who can't. Market totaled $312 million during the 1962-63 school year.

City May Expand to 31,000 Acres in '66

If all the annexation requests now before the city become final, the physical size of Colorado Springs should exceed 31,000 acres early in 1966.

By comparison Colorado Springs contained only 7,734 acres Jan. 1, 1955, which means the city has quadrupled in size in the past decade. There were 12,502 acres in Colorado Springs Jan. 1, 1963.

The original townsite back in 1872 contained 3,868 acres, which is just a little larger than some of the land which the Golden Cycle annexations pending before the Planning Commission contain 2,430 acres.

In addition to the tremendous physical growth, the population of Colorado Springs continues to zoom upwards, with the latest estimate by the Planning Commission being 97,500 in the city, 175,000 in the metropolitan area and 194,000 in El Paso County.

The Colorado Springs population in 1960 was 70,194 and 45,472 in 1950, by official census count.

Planning Department officials predict that the growth of the city will be four to five per cent annually for the next 20 years.

On that basis, they said, the Colorado Springs population in 1970 should be about 142,000 and increase to 200,000 by 1975 then approximate 320,000 by 1985, at which time the metropolitan population should be 380,000 with 430,000 in all of the county.

LINKS DATE

NEW YORK (UPI) — The $100,000 Thunderbird golf classic will be held Aug. 11-14, at the Upper Montclair Country Club course at Clifton, N.J., it was announced Thursday.

For Want Ads Dial — 632-4641

Three states, Kansas, South Dakota and Oregon, have restored the death penalty in recent years after having once abandoned it.

Because flags are flown as a means of establishing the identity of the bearer, the practice of flying them originated on ships at sea.