

## AERONAUTICS

**Engineers to Learn Soviet Air Strength**

► RUSSIA'S MILITARY aircraft and airborne armament will be studied carefully by engineers attending a "confidential" session of the Society of Automotive Engineers in Los Angeles Oct. 2.

The meeting has been classed confidential to keep the Communists from learning details of the latest United States aeronautical experiments as well as to keep them from finding out how much the United States knows of Russian airpower.

Each person attending must show a clearance certificate obtained through military security officers, SAE advises.

"Soviet Air Weapons" will be discussed by Fred Kobernuss of the Air Technical Intelligence Center, Wright-Patterson Air Force Base, Dayton, Ohio. Some American experiments will be covered by Ralph Bayless of the Consolidated Vultee Aircraft Corp., who will discuss Convair's experience with its delta-winged planes. J. A. O'Malley, Jr., and R. J. Woods, both of Bell Aircraft Corp., will outline design features of the Bell X5's adjustable wings.

During the discussion of Russian aircraft, a new "inter-continental" bomber probably will get a thorough going over. The bomber has been described by the Boeing Airplane Co., as being "remarkably similar" to airplanes still on American drawing boards.

As drawn by a British artist from data smuggled from the Soviet Union, the superbomber has six turbine-propeller engines and swept-back wings. The planes have been produced in small numbers behind the Iron Curtain and reportedly have been seen flying over Moscow.

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## ZOOLOGY

**Bats Shiver for Warmth; Wing Blood Cools Them**

► CERTAIN BATS "warm up their motors" when they are cold and employ a cooling mechanism like a car radiator to keep from getting overheated.

Dr. Raymond B. Cowles, professor of zoology at the University of California at Los Angeles, finds that bats are sensitive to cold and become lethargic at temperatures well above freezing. By shivering, idling their motors so to speak, they are able to raise body temperature to a level sufficient for locomotion.

In hot weather bats produce a great excess of heat while flying. Death would result if it were not for a cooling device, a radiator-like mechanism in the wings. Blood from other parts of the body is shunted into the vast network of small blood vessels in the wings. This allows a great amount of heat to be conducted from wing membrane to the surrounding air in a short time. Thus the blood is effectively cooled.

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**TESTING SPRAY CHEMICALS**—Because chemicals used for killing weeds, protecting crops against plant diseases and controlling insects do not always perform the same in all sections of the country, Nick Lazaneo, foreman, is testing a new insecticide on prune trees at the Du Pont Company's research farm near Cupertino, Calif.

## AGRICULTURE

**Alfalfa Grows on Sand**

► SEA SAND can be used to grow alfalfa and possibly other crops, experiments by a Peruvian scientist show.

Dr. Pedro Venturo, delegate of the National Committee for the Protection of Nature, Lima, Peru, said that his studies with crop-growing sands have brought "promising results and economic success." Value of the adjacent land has already increased from three to seven times during the six-year period of his studies, he pointed out.

One-fourth of the earth's crust is made up of sand. These areas have been considered as deserts and unsuitable for cultivation of any kind, but world population compels us, he said, to consider ways and means of using this soil.

The 200-acre section of sand he cultivated is located on the Peruvian seashore. It consists of pure sand with traces of salt, Dr. Venturo told scientists from 50 nations attending the Sixth International Grassland Congress held in State College, Pa. Being whipped by ocean breezes, salt particles are continually being added to the sand.

To grow his crops, Dr. Venturo first planted trees in contour rows on the sand dunes surrounding his land. This was to prevent sand from the dunes from invading his fields. Then he pumped irrigation water to the trees until he had woods on

the slope of the dunes for a distance of 100 feet in some areas, much more in others. Since Dr. Venturo began his experiments with the reforestation, the trees have grown to 30-foot heights.

He brought irrigation water to the coastline by canal, then extended this canal for a mile in a direction parallel to the sea. From this canal, he made secondary channels for irrigating the sand.

He grew the alfalfa and other plants not only in sand, but in first-class humus soil, in order to be able to compare their development and the money earned from the plots.

To cut off the strong ocean winds, he tested plants suitable for windbreak hedges, finally choosing a variety of cane, called "carrizo." Owing to the density of its growth, Dr. Venturo said, this cane forms a wall.

Spray irrigation, he found, is essential during the first month of the plants' development. After this, irrigation by immersion or by maintaining a cover of flowing water in the alfalfa fields may be used.

His experiments have banished the popular idea that deserts are wholly unproductive and incapable of becoming fertile lands in time, Dr. Venturo states.

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