THE SEED THAT BECAME A TREE

Continued from page 11

element of drag, the "wave drag,"* came into consideration, and from all the early measurements it could be seen that this severe difficulty in performance could be met only by a shape which would be the combination of a slender body and a highly sweptback wing.

The main question, then, was the problem, which of the possible planforms of such wings would be sufficiently stable in the range of low speed flight? Such aircraft would not only fly in the supersonic range, but should also be able to take off and come down within a reasonably low speed range and, since such aircraft would be built mainly for military use, the take-off and landing of the aircraft should not require a high degree of training. The test flights of several higher sweptback wings showed a very severe tendency towards wingtip stalling at low speeds. It was obvious that only very experienced pilots would be able to fly such aircraft and we found that the only type which would provide us with better low speed flight characteristics was a highly sweptback Delta wing which could be flown without such trouble, even beyond its stalling point. It was, therefore, not difficult to derive the solution of the configuration of a supersonic aircraft — the long slender bod ywith a Delta wing, of which the chord length at the center was about the same as the span of the ship. Such chord lengths provided enough thickness for the structural members, even if the thickness ratio of the section was ex-

*Wave Drag – drag due to sound waves.

Turn to page 14

Latest Delta Development is this XF-92-A. Note the alligatored surface of the dry lake.

Dr. Joachim Kuettner Receives the Paul Tuntland Memorial Award

E. Lehecka

by Dr. August Raspet

The Tuntland Award is a memorial to the person who by recorded facts makes the greatest contribution to motorless flight.

Paul Tuntland's analytical approach and his many contributions: first in the Thunderstorm Project, flying sailplanes into these powerful airmasses, then his highly efficient flying in the Ridge Flow Project which yielded a mass of data which was published, set the example.

With such an example in mind the SSA Scientific Committee sought a recipient for this year's, the second, Tuntland Award, and found that Dr. Joachim Kuettner's long record of accomplishments and contributions made him the most logical recipient of a number suggested.

In 1938, Dr. Kuettner by tediously analyzing a large number of barograms of a gliding contest in Grunau showed that atmospheric waves existed during that contest. His paper on this subject appeared in a scientific publication.

Dr. Kuettner's next works in this were on thunderstorm electricity, but because he had no airplane or sailplane he had to go up onto a high mountain observing the thunderstorm as it came by him. He published the paper on this work following his arrival in this country.

While on the mountain he also observed the nature of the flight of certain birds soaring on the mountain currents. This work he offered in 1949 to the American Ornithological Union in an address before that group.

Through his influence in meteorological circles, he was able to convince the various cognizant groups that a Sierra Wave Project should be initiated in order to get a better understanding of high altitude meteorological flows. He and Dr. W. B. Klemperer were instrumental in promoting such a project for the University of California at Los Angeles. Dr. Kuettner spent quite a lot of his valuable time assisting the Southern California Soaring Association with the field work on this project.

As a side study on this project Dr. Kuettner developed the concept of long cross-country flying on mountain waves, the equations for which had been laid down by Bill Ivans. Dr. Kuettner proved the potential of this in a flight of some 375 miles, which should open a new field for record distance flights.

With these many contributions, Dr. Joachim Kuettner was voted the 1952 recipient of the Paul Tuntland Memorial Award.