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KOPPEN  
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MENT

Otto Carl Koppen, one airplane designer who gained fame by going more slowly while others were going faster, retires this month after 37 years of teaching aeronautics at the Massachusetts Institute of Technology.

At M.I.T., Professor Koppen has taught design, stability and control to two generations of aeronautics students and some of America's top airplane designers have come from his flight vehicle engineering and aircraft design classes. In the 1930s, he anticipated the present trend toward systems engineering by assigning his students missions to be accomplished and telling them to design aircraft and support systems to do the jobs.

Outside M.I.T., as a designer in his own right, Professor Koppen has won recognition for light, safe and easy-to-fly airplanes, culminating 15 years ago in his "heliplane," which takes off in a 100 yards or so, climbs at 20 degrees and lands at 28 to 35 miles an hour.

Heliplanes are the only aircraft certified by the Federal Aviation Administration for short take off and landing (STOL) operations and when the first version was tested at Norwood, Mass., airport in 1949, a mechanic who watched was reported to have said: "There just ain't no such airplane."

But there was and is. The first heliplane now hangs in Smithsonian Institution, Washington, D.C. Some 300 successors, made by Helio Aircraft Corp., Bedford, Mass., are in military and civilian service world-wide, particularly in bush country with primitive airports.

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Koppen Retirement / M.I.T. - 2.

STOL aircraft, defined by FAA as those that clear a 50-foot obstacle in a 500-foot take-off, are popular as design efforts now because of military needs in underdeveloped areas. But Professor Koppen has been working on them for three decades.

Born in Brooklyn in 1900, he graduated from M.I.T. in 1924. He had completed requirements for the S.B. degree in 1923 and was an instructor in graduate aeronautics that year. Among his students that year were four future admirals and two future generals, including Gen. James Doolittle, then working on a graduate degree at M.I.T.

After graduation, Professor Koppen worked for the National Advisory Committee on Aeronautics at Langley Field, Va., for six months and another six months for the Aviation Branch, Army Signal Corps, McCook Field, O., riding as observer on test flights of new airplanes and noting performance.

From 1925 to 1928, he designed airplanes for Henry Ford. The Ford prototypes were experiments in light, easy-to-fly airplanes that could be mass produced and Professor Koppen was to elaborate the idea in the mid-1930s with what he called the "family flivver."

After working for Ford, he spent a year at Fairchild Aviation Corp., then returned to M.I.T. as associate professor in 1929. He was made professor in 1939.

Several family flivvers were produced and sold in the mid 1930s and Professor Koppen followed this with the easy-to-fly fixed-rudder "Skyfarer." With the rudder stationary, the pilot needed to coordinate only two sets of control surfaces--ailerons and elevators--to fly. Several Skyfarers were produced at South Lowell, Mass., but World War II interrupted operations.

During the war, Professor Koppen worked on bombers and cargo planes and spent 1942-43 away from the Institute in war industry.

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Koppen Retirement / M.I.T. - 3.

The helioplane came from post-war collaboration between Professor Koppen and Professor Lynn Bollinger of the Harvard Business School, a pilot, executive and expert on aviation and airport management.

Helioplanes gain STOL performance from large wings, flaps, elevators and tail sections and from leading edge wing slats that move in and out automatically. Interceptors rise out of the wings just behind the slats to spoil airflow through the resulting slots and add maneuverability and control to the craft.

Professors Koppen and Bollinger started Helio Aircraft Corp., now at Bedford, Mass., in a hanger at Norwood. Professor Koppen who learned to fly from test pilots at McCook Field in the 1920s and held a pilot's license for 25 years, gave the helioplane prototype its first flight test. He taxied the prototype only about 100 feet before the craft gently lifted into the air and Professor Koppen learned his design worked.

Professor Koppen and his wife, the former Eva de Wilde, were married in 1929 and have lived almost continuously at 29 Woodcliff Road, Wellesley Hills, Mass. They have two children, Marjorie and Dick.

In retirement, Professor Koppen will take part in limited teaching at M.I.T. and continue as a consultant to Helio. He also will spend some time with his avocation--automobiles. His present fancy is a Japanese sports-type station wagon.

- 30 -

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