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SEATTLE, _____ -An answer to demands of the aviation industry for a lighter weight and more efficient propeller may be found in a propeller blade of symmetrical cross-section (approaching the tear-drop contour) such as is being developed in the University of Washington aeronautical laboratories by Frederick K. Kirsten, professor of aeronautical engineering.

Propellers now in use, Professor Kirsten explained, have one flat side, the camber or curve being all on one surface. The new blade, which will be given its first practical usage in the wind tunnel laboratory now being completed, is a double-camber, symmetrical blade.

The development of the huge land transports and the great clipper ships has increased the demand for a propeller of light weight but greater strength and efficiency, he said. On blades now in use, the mechanical stiffness suffers by the lack of symmetry with which the blade material is grouped about the bending axes of the blades. Furthermore, the load on the blades shifts location between the leading and trailing edges when the propeller speed changes, and even for normal operation the forces on the blade tend to twist and deform it. Another virtue of the symmetrical blade is its operation with less drag in the air stream than any other section. This makes for higher efficiency. By using a symmetrical or tear-drop shaped blade, the symmetrical section can be made thinner than in an unsymmetrical blade, thus obtaining the same or greater strength with less material and therefore less weight and the twisting stresses are eliminated, Kirsten said.

Kirsten said airplane manufacturers, especially those engaged in building the large transports and the clipper ships have been faced with the task of obtaining greater strength in the propellers with no increase in weight. Propellers being placed on some of the clipper ships now under construction weigh as much as 450 pounds, he said.

Professor Kirsten said no immediate effort would be made to apply

the new design to airplane propellers at the University laboratories, but explained they would be used to generate the air stream in the wind tunnel, which will be the largest and most completely equipped on the coast. The blades will be mounted seven to each of two propellers and will be able to develop a maximum air speed in the test chamber of about 250 miles an hour. Each propeller will be 15 feet in diameter.

The tunnel will be ready for operation within about two weeks, Kirsten said, but adjustments and tests will require many additional weeks. He predicted it would be fall before every detail has been adjusted and corrected for accurate testing of model planes, propellers and other aviation equipment.