North American Rockwell entered sole bid to develop flight test wing developed here for transonic airliners. **Supercritical foil** will be tested with the new wing (solid line) which replaces original (dotted) F8 structure.

**Firm To Test New Wing**

By BILL DELANY
Times-Herald Staff Writer

North American Rockwell was the sole bidder for construction of an actual flight test version of Langley Research Center's supercritical wing.

National Aeronautics and Space Administration today said the proposal was the only one submitted for the request released during February by the Flight Research Center at Edwards, Calif.

The Edwards center will conduct flight tests of the new wing which promises to see wide application on commercial airliners, in advanced fighters and for helicopters and light plane props.

The supercritical wing was developed here by Dr. Richard T. Whitcomb, who conceived the area rule (or “Coke Bottle”), concept here some 18 years ago.

Both the supercritical wing and area rule fuselage provide special treatment of air flow at the speed of sound.

The supercritical wing transfers the flow of air around an aircraft wing to a supersonic region which minimizes buffeting and promises increased efficiency. This application to commercial airliners is but the first of a series of actual tests.

Airliners are now speed limited, regardless of potential. Their wings are subject to localized zones where the movement of air is supersonic - or “going critical.”

The wing that will be tested is a scaled down version of the one used in the tests.

Dr. Whitcomb said his initial point in the investigation now leading to flight test was development of slotted wings for boundary layer control.

They worked fine in the Langley wind tunnels, he recalls, but application was considered beyond the ability of airline officials since the half-inch slot running the full wingspan had tolerances of 1/32 inch.

A second approach - development of a new foil to do much the same in boundary layer control - was undertaken at this time.

The foil looks something like a normal design mounted upside down.

The bulge in the foil is mounted below the wing, instead of at the top surface which generates a vacuum and the consequent lift at lower speeds.

This foil moves the shock waves of supersonic airflow above the wing. Langley tests show aircraft with this wing can achieve Mach 0.95 (or 95 percent of the speed of sound).

More conventional wings are limited to about Mach 0.7 or something like 530 miles per hour at airliner altitude.

Selection of the LTV fighter to test the wing resulted in the shoulder location of the structure, he said. Nas earlier considered use of a Air Force F-100, but the location wing design would have complicated matters involving landing gear arrangement.

**VOTER BOOK FOOTNOTE HAS IMPACT**

Voter impact was felt this week in Hampton.

Two thick voter registration books fell from a shelf at the foot of Hampton Register Mrs. Inez Ashe.

The books and Mrs. Ashe are both on the shelf now - the books in the vault and Mrs. Ashe in Dixie Hospital. Hopefully, the book will remain longer than Mrs. Ashe, who will return to her desk a few days.