ABSTRACTION

During the time a lot of research of stream viscous 2D getting through geometry of solid body with the fox form its geometry and or with the method of boundary layer control, like: stream get through the symmetrical airfoil with the back part of behind dismembered in phases, process blowing in upperside model the test to enhance the stream momentum, gift partition off in upperside airfoil by $\alpha > 0$, and a lot of again. But not many research of concerning internal stream influence in the case of change of contour body of area alley go downstream to geometry airfoil.

Gift of deceleration Influence and also acceleration of at stream field go downstream to stream characteristic of about symmetrical airfoil with the angle of attack big progressively at a speed of stream (Reynolds Number) remain to, will have an in with the change of the happening of: separation point, friction of stagnation point and static pressure distribution is contour from airfoil. Where separation dot of at upperside airfoil will shift to retreat rear effect of of contraction of alley of area downstream and is the same as at expanstion of alley of area downstream of either in upperside and also lowerside, compared to unchanged of previous penampang alley shift to go forward in upperside and retreat in lowerside with $\alpha > 0$. So that minimize the area wake, and will degrade the drag force.

Study Eksperimental done/conducted in wind tunnel by NACA 0015 as test model, proven by the existence of influence of trouble of contraction and expansion of stream field go downstream for the speed of stream 15 (m/s) with giving angle of attack more and more big, stream after maximum thickness airfoil change the signifikan. But contraction alley of at area go downstream the effect of deflection flow alley more signifikan of than influence of is existence of interaction of corner separation of at expansion alley to wake area from airfoil. This matter is caused by a big enough different alley change ratio. For the alley of by contraction is ratio of alley change is 1,83 while alley by expansion is 1,03.

Keyword: symmetrical airfoil, boundary layer, angle of attack, $C_p$ (coefficient of pressure), separation point, stagnation point, contraction and expansion of alley of area downstream, separation corner, deflection flow.