

the velocity behind the wave front (see Figures 17, 18 and 19). Together, these modifications are considered to be a sharp increase in drag in particular and may be accompanied by significant changes in aircraft trim and stability and control characteristics (see Figures 21 and 22).

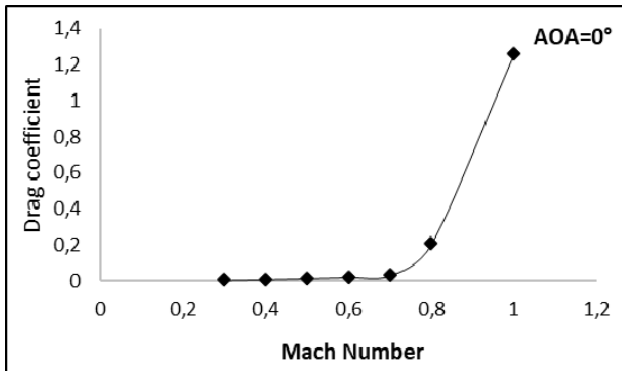


Fig. 21 Drag coefficient for different Mach number; AOA = 0°

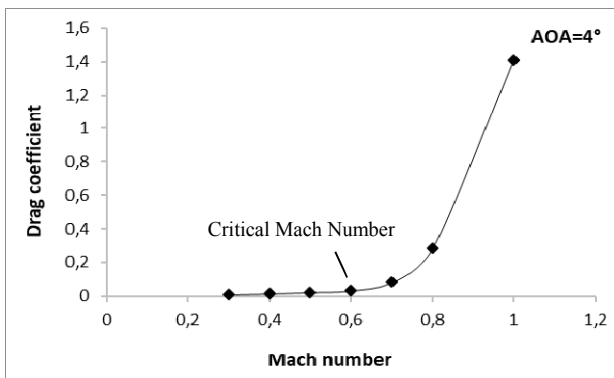


Fig. 22 Drag coefficient for different Mach number; AOA = 4°

IV. CONCLUSION

The drag associated with high subsonic velocities results from shock waves that terminate the supersonic flow zones on the wing. At first there is a slow increase in drag (called drag creep). The local shock wave at the top of the wing creates a very strong negative pressure gradient above the boundary layer. When the shock wave is strong enough, this results in separation of the boundary layer, which creates an exponential increase in drag. The Mach number to which this occurs is called the Mach number of divergence of drag, M_{dd} . (The definition of the Mach number with divergence of drag is arbitrary).

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