

Analysis:

The Supermarine Spitfire has a unique wing configuration of having the root and tip of the wings be different airfoils. At the time of its design this was a new approach, and this was done to reduce the induced drag and improve performance. This is because the airfoil at the tip managed to make the lift coefficient smaller. Spitfire's main requirements were to gain victory in dogfights, and therefore, higher maneuverability was expected. In contrast, the Air Tractor is active in high production agriculture required to maintain a stable flight in low altitudes with slow speed. Due to its main usage of disseminating chemicals to grow vast fields of crops, it is rather ideal to maintain the same airfoil from root to tip to have a constant lift and drag.

REFERENCES

Ziemkiewicz, David. "*Simple Analytic Equation for Airfoil Shape Description*." December 2016, https://www.researchgate.net/publication/312222678_Simple_analytic_equation_for_airfoil_shape_description. Accessed on 1 March 2019.