

# **FLIGHT PERFORMANCE ANALYSIS OF A RADIO CONTROLLED AIRPLANE**


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## ABSTRACT

Radio Controlled Airplane which is also known as RC Airplane has become very common and familiar to the community and public. Basically, a Radio Controlled Airplane is a model airplane that is controlled remotely by using a hand-held transmitter and a receiver in the airplane. The receiver controls the corresponding servos that move the control surfaces based on the position and configuration of the joysticks on the transmitter which would result the airplane to move and fly.

The aim of this research is to obtain the performance characteristics of the RC Airplane model Trainer 40 with the 3047 MVVS glow engines. The analysis will be done theoretically as well as experimentally by flying the airplane. Computational Fluid Dynamics simulation is performed to obtain the important parameters such as lift coefficient, drag coefficient and moment coefficient for the airfoil as well as for the whole wing itself. This research focus on the analysis of the range performance, endurance performance, as well as the maximum velocity performance.

The theoretical result for the flight maximum velocity is 21.2m/s while the flight range and endurance is 36429.45m and 2040.82s respectively. The actual flight performance obtained from the flight test is slightly lower compared to the theoretical result. The percentage difference of the result for the flight maximum velocity, range and endurance is 12.26%, 8.86% and 12.54% respectively.

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