

TRINE UNIVERSITY  
ANGOLA, INDIANA

## Abstract

This project meets the specifications for the annual NASA collegiate design competition. The competition requires the design of a tiltrotor vehicle for use by the military in rescue missions, with the added specification that it can land on and take off from water. The vehicle must also be able to travel a distance of 800 nautical miles, cruise at a speed of 300 knots, carry fifty passengers, and siphon and expel water. This project appeals to the members of Team Aero due to the aerodynamic analysis required. The report details an introduction to the design process, the customer needs and wants, concept generation and selection, and detail designs with accompanying calculations, drawings, and data as appropriate. The last section is comprised of conclusions and recommendations the team has for continuing the design process if manufacturing the vehicle is the final goal.