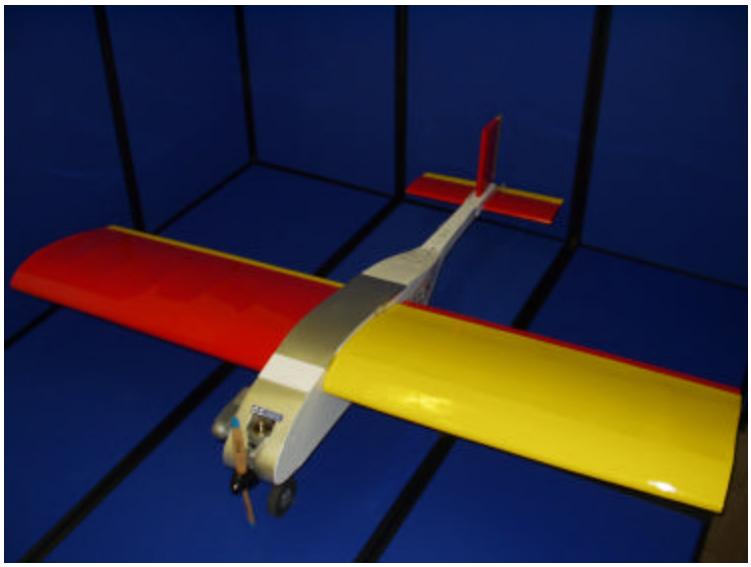
SAE AERODESIGN EAST 2003 COMPETITION
TEAM "AIR TANK"

FACULTY ADVISOR: COL Richard Trandel
Nicholas Shallcross
Jason Boatright
Charles Wagner



The Virginia Military Institute's Mechanical Engineering Department funds design projects for their seniors to work on during their last semester at school. The senior cadets use these projects as a chance to apply scholastic applications to real life problems. This academic year, 2002-2003, the department thought about entering the SAE® (Society of Automotive Engineers) Aero-design East competition. This competition gives students at schools across the nation a chance to design and fabricate a remote controlled, "R/C", aircraft. The individual teams that enter this competition must design and produce a plane that follows the competitions rules and must be able to show the engineering aspects of their design through a professional report that is also part of the competition. The competition rules require the following: 1) that the wingspan of the plane not exceeds six feet. 2) Have a 300 cubic inch continuous cargo bay. 3) The team must use a specified engine type; an O.S. 0.61 FX with E-4010 muffler. 4) The plane must be designed so that all inner components for the plane are accessible for inspection by the competition judges. The teams in the

competition will be judged on how accurately they predicted the performance of their aircraft, and the aircraft's ability to takeoff from a 200-ft runway, and land within 400-ft.

Team Air-Tank is one of two cadet teams, building an R/C aircraft in accordance with SAE® design regulations. The team captain is Cadet Nicholas Shallcross, and the two-team engineers are Cadets Jason Boatright and Charles Wagner. The aircraft that was designed is predicted to have a total take off weight of twenty-five pounds. A majority of that weight is in the form of steel plates that will be carried in a cargo bay situated under the main wing supports of the aircraft.