

ISU and NCA&T Capstone Project

BMA / Advanced Vertical Lift

“Urban High Rise Rescue 2040” 2013-2014 Design Competition

Boeing Military Aircraft sponsor

Roger Lacy

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**First Interstate Tower
Los Angeles, 1988**

Draft “Urban High Rise Rescue” Project

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- **Premise:**
 - With increased global urbanization, and denser/higher occupied units, effective ‘high-rise’ building rescues can be very difficult for local first responders
- **Sample Situation:**
 - Numerous people trapped above 10th floor of high rise, with no safe roof access
 - Internal building fire and/or internal building collapse, due to natural or man-made causes
- **Draft System Requirements –**
 - Rescue up to 6 people per trip from the side of a high rise building, urban setting
 - Deliver rescued people to disaster relief coordination site up to 2 miles away
 - Conduct at least 10 trips before ‘refueling’ required
 - Limited/no pilot skills, one onboard rescue crew member
 - Quick deployment up to 20 miles, from storage at a central first responder facility
 - No carbon emissions from system
 - Production target date is year 2040
- ***Design an Urban Rescue Vehicle, and Demonstrate 2 Key systems***
 - *Personnel compartment and building access, lift/propulsion system, structure/LG, flight and guidance controls, Communications and Navigation*

Scheduling (Tentative)

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- **Kickoff –**
 - *Term starts Aug 26 ISU, Aug 21 NCA&T*
 - Boeing, Philadelphia – 5 September
- **Design Requirements and Options Review –**
 - *Finals Dec 16-20 ISU, Dec 9-13 NCA&T*
 - At NCA&T, Nov 21 – week before Thanksgiving (Nov 28)
- **(Demonstration Plans)**
 - *Term starts Jan 13 (both)*
 - Virtual, 2nd week of February
- **Final Review and Demo –**
 - *Finals May 5-9 (both)*
 - At ISU – 25 April