

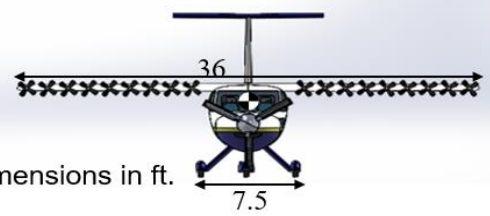
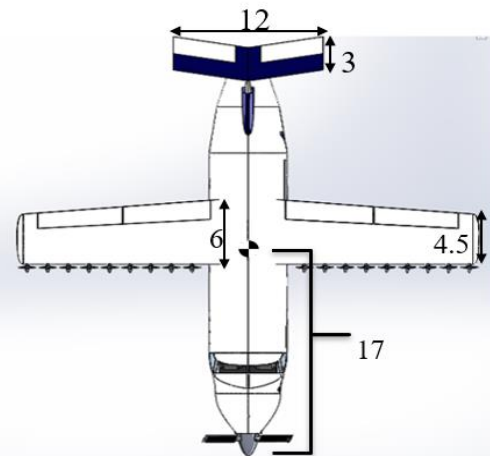
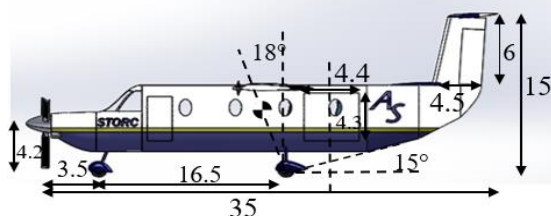
II. Executive Summary

In response to NASA’s 2018-2019 Request for Proposal (RFP), Aerospace STOLutions is proud to present the STORC (Short Takeoff Rural Commuter), a multi-modal aircraft capable of carrying 9 passengers or 2000 pounds of cargo which will enter into service in 2025. The STORC is capable of servicing future airparks in rural and suburban areas located a maximum of 99 minutes away from a “home base” airport, and will be able to complete these “hub and spoke” operations to increase access to small rural and suburban airports. The minimization of life-cycle costs and potential for future autonomous operation has also been investigated in accordance with the RFP.

The STORC achieves takeoff and landing distances over a 35 ft obstacle of 460 ft and 540 ft, respectively. This impressive performance is made possible through the use of distributed electric propulsion, which increases the lift generated by the wing. Furthermore, the STORC cruises at 215 knots and is, therefore, capable of completing 33% more passenger missions per day than current comparators.

The STORC’s low operating cost of \$0.30/seat-mile is primarily a function of its fuel consumption of 4.0 nautical miles per gallon, which is at least 10% better than comparator aircraft. This operating cost can be further reduced by an estimated 20% through the implementation of autonomy for both cargo and passenger operations, a process that is set to continue development and undergo verification during cargo flights until it is offered as mid-life upgrade for passenger missions. With a unit cost of \$2.9 million, the aircraft’s 25-year life-cycle cost of \$0.33/seat-mile is less than the next cheapest comparator by 4% over 5 years and 12% over 25 years. The STORC also completes the 120 nmi mission faster than its comparators providing at least 20% more missions per day, which further increases operating revenue. The table shown below details the STORC’s compliance with all RFP requirements. Ultimately, STORC provides impressive mission performance at the lowest available life-cycle cost, making it the best option for the customer.

REQUIREMENT	THRESHOLD	GOAL	STORC COMPLIANCE
Commuter Payload / Cargo Payload	9 PAX + 1 Pilot 2000 lbs	-	✓
Passenger/Cargo Conversion Time	60 minutes	-	✓
Maximum Range	200 nmi	500 nmi	350 nmi
Diversion Airport Distance	50 nmi	100 nmi	100 nmi
Takeoff/Landing Field Length (35 ft clearance)	1000 ft	250 ft	460/540 ft
Operational Noise	80 dB(A)	65 dB(A)	75 dB(A)
Life Cycle Cost/Seat Mile	-	0	\$0.33
Flight Duration	99 min	-	✓
Reserve Powered Flight	45 min	-	✓
Cabin Pressure Altitude	8,000 ft.	-	✓
FAR Part 135 Aircraft	Compliant	-	✓



Note: Dimensions in ft.