STUDY RAISES HARD QUESTIONS ABOUT EVTOL AIR TAXI MARKETS

CHARLES ALCOCK / OCTOBER 13, 2020

An economic analysis of the anticipated advanced air mobility (AAM) market in the affluent New York-Boston corridor suggests that predictions about the future proliferation of eVTOL air taxis may be overly optimistic. And the study, which was released during last week's Vertical Flight Society Forum, was conducted before a big drop in ground and air traffic in the wake of the Covid-19 pandemic.

"The AAM community lacks analytical rigor and an economic analysis framework," argued Nate Sirirojvisuth, a senior cost research analyst at Price Systems. He presented his findings, developed by Price in cooperation with Jaunt Air Mobility and Georgia Tech, in a paper entitled, "A Lifecycle Economic Study of eVTOL Air Taxi service in the U.S. Northeast Region."

Sirirojvisuth said an urban area appropriate for the sort of air taxi services envisaged by new AAM commercial models would need to have significant and persistent ground congestion and a high amount of business travel and be able to support average individual seat ticket prices in the $219 to $264 range with the majority of forecast demand coming in the existing high-wealth New York City—Connecticut corridor. Forecasted demand is 500 to 1,200 passengers per day. While the convergence of enabling technologies drives the opportunity for AAM to serve underserved markets, past pricing assumptions do not realistically calculate costs and traffic volume, he claimed.

"We have this great technology, but how do we optimize it for the market, not just performance?" Sirirojvisuth asked rhetorically. In his view, the new technology must deliver clear added value, and this will require a thorough analysis of cost drivers and the "real" ridership demand. He boiled the issue down to the following three

questions: What is the price elasticity and demand in any given market? What are the cost inputs into ticket prices? And what market conditions and technology together maximize profit?

Sirorojvisuth and his fellow researchers analyzed current traffic patterns, likely AAM route assignments, eVTOL aircraft performance, infrastructure needs, trip time, and anticipated seat mile ticket prices to determine the likely income threshold of passengers, the population income distribution, and service demand and profitability. They then applied these variables to short, medium, and long-term operational assumptions with regard to infrastructure availability and cost.

Initially, when ridership volumes are low, they concluded, AAM could use existing heliports and airspace rules with a minimum of investment, but that would change as ridership increases and both vehicle and vertiport throughputs are maximized. However, as system service expands, new vertiports also would need to be located along the routes in these high-wealth areas. The analysis does not take into account the price of land for vertiport construction in these areas, Sirorojvisuth said.

Sirorojvisuth noted that researchers determined that the optimum vehicle to service the corridor would have an unrefueled range of at least 100 miles, be able to cruise at altitudes up to 5,500 feet, and have a cruise speed of 160 mph.