ALPINE AIR EXPRESS

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EMISSIONS AVOIDED AND SAFETY IMPROVEMENT WITH VIRTUAL PILOT TRAINING

Founded in 1979, Alpine Air Express (Alpine) is an air-freight business and on-demand air-cargo operator serving routes throughout the Western United States. Using a fleet of Beechcraft 99 (BE-99) aircraft that have been retrofitted to operate as cargo carriers, Alpine's roster of top-tier clients includes the United States Postal Service and United Parcel Service.

The company has maintained a strong focus on maximizing efficiency, while simultaneously improving the safety of its training programs, which are conducted in a virtual environment. Alpine is also investing in hybrid propulsion technology and other innovations that are playing a role in reducing the carbon impact of shorter regional flights.

Recently, Alpine engaged with Air Training Support (ATS) to develop a ground-based training system for the BE-99. ATS provided Alpine with a King Air 200 Flight Training Deck (FTD) that required conversion to operate effectively.

Alpine worked with ATS to convert the King Air 200 FTD into the first-of-its-kind BE-99 FTD. After several months of testing and configuration changes, the King Air 200 FTD was certified as Level VII – the highest level achievable – by the Federal Aviation Administration (FAA). This state-of-the-art system features a 180° wrap around screen with projector visuals of both engines, the terminal environment and terrain configured to mirror the BE-99. Alpine pilots can use the system to train through system checks, run-ups, departures, arrivals, required maneuvers, emergency situations and approaches. The BE-99 FTD has reduced the number of flight training hours required of pilots and allowed Alpine and its skilled trainers to simulate emergencies that would be too dangerous or impossible to conduct in an actual aircraft, including hot starts, hung starts, V1 cuts, engine fires, gear extension/retraction failures and flap asymmetry.

ENVIRONMENTAL OUTCOMES AND ENHANCED EFFICIENCY

Alpine has reduced certain GHG emissions and fuel consumption through innovative training solutions developed in collaboration with ATS.

KEY ACHIEVEMENTS

>50%

Over 50% Avoided GHG Emissions and Fuel Consumption Per Pilot:

From 2021 to 2023, Alpine's energy efficiency measures, use of ground-based training for the BE-99 and decreased fuel consumption per pilot contributed to reduce Alpine's Scope 1 emissions by **51.01%**. This notable reduction highlights Alpine's work to promote sustainability and efficient operations in the aviation industry.

-33%

33% Decrease in GHG Emissions and Fuel Consumption While Expanding Training Capacity:

While the number of pilots trained increased from **22 in 2021 to 30 in 2023**, Alpine successfully lowered the scope 1 GHG emissions and fuel consumption for training by **33%**. This achievement demonstrates the scalability and efficiency of Alpine's training program, aiming to set an example for more sustainable growth in aviation.

-1/2

Halving the Environmental Impact of Training:

The portion of fuel consumption and emissions attributed to training activities was reduced from **3.38%** in 2021 to just **1.79%** in 2023. This reduction underscores the effectiveness of Alpine's strategy to conduct training in a virtual environment, therefore, minimizing the environmental impact of its training operations.

In addition to improved pilot training and assessment and lower pilot training costs, the initiative has delivered certain sustainability outcomes, including:

- ✓ **Lower Fuel Consumption:** The use of the new FTD has contributed to the cut down on the need for actual flight hours, resulting in less fuel consumption.
- ✓ **Decreased Aircraft Emissions:** A reduction in training flight hours has reduced Alpine's GHG emissions profile and contributed to progress towards the company's goal of reducing its environmental impact and GHG emissions.