New Innovation

Flight Trajectory Optimizer

FLT OPTIMIZER SOFTWARE

Easily quantify and optimize the environmental effects of flight operations

Optimization Tool for Military Aviation

One of the most cost-effective ways for military installations to mitigate aircraft noise in the surrounding communities is through modification of operational procedures. The consideration of air emissions and operational factors such as fuel consumption is important, as well.

The **Flight Trajectory Optimization Software (FLT Optimizer)** by Blue Ridge Research and Consulting can assist military installations by providing a state-of-the-art tool to objectively model and assess operational procedures. **FLT Optimizer** can focus on a single factor such as fuel consumption or evaluate a balance across all factors.

With **FLT Optimizer,** installations can easily quantify and reduce the environmental effects of flight operations:

✔ Optimized profile descents, unrestricted climb outs, or NADPs

✔ Flight track concentration/ dispersion

✔ Determine noise reduction vs. air emissions vs. operational costs, including time of flight and fuel consumption.

✔ Identify optimal procedures to minimize overall noise, emissions or fuel consumption or find a balanced solution.

FLT Optimizer ensures that environmental mitigation strategies have limited impact on operating efficiency and training, and it provides commanders with objective analysis for use in the environmental assessment process. **Find out more at 828.252.2209.**

Illustration of the computational analysis behind the optimal flight path determination. Incrementally modified flight paths result in measurable changes to the noise impact. The color-coded blocks show population centers.

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improve your environmental assessment
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29 N MARKET ST, SUITE 700
ASHEVILLE, NC 28801
(P) 828.252.2209
BRRC@BLUERIDGERESEARCH.COM

Community Focus

As communities grow, population distributions change and old mitigation procedures can become less effective. Operational mitigation studies have traditionally relied on manual efforts to modify flight paths and determine solutions that reduce either air emissions or community noise. But these are interrelated problems involving unique population distributions, local topography, and varied aircraft performance along the flight path. **FLT Optimizer** automates this process and uses current population block data as a key component in determining impacts.

A Balanced Approach

Community noise and air quality remain significant issues for military airfields. As the surrounding population changes or as flight operations increase one of the most cost effective solutions to limit noise impact is through modifications to procedures. **FLT Optimizer** identifies which flight procedure works best for each airport community, taking into account aircraft performance constraints, local flight rules and flight safety requirements. Whether used to assist in the design of flight procedures or as an environmental research tool, **FLT Optimizer** can include the effects of fuel burn and air emissions in the optimization

cost function. New procedures can be evaluated using several different measures of noise impact, flight efficiency, and air quality. By balancing all of these, parameters in a computationally efficient software program, BRRC provides the military with a new tool and service to conduct:

- ✓ **Flight procedure evaluation and optimization to reduce noise exposure and air emissions**
- ✓ **Improved evaluation of operational mitigation alternatives for EIS and AICUZ studies**
- ✓ **Fuel cost and flight efficiency studies**

Call us at **828.252.2209** to discuss how **FLT Optimizer** could be used to improve the environmental assessment process for the benefit of your airport community.

Photo provided courtesy of Lockheed Martin/Released
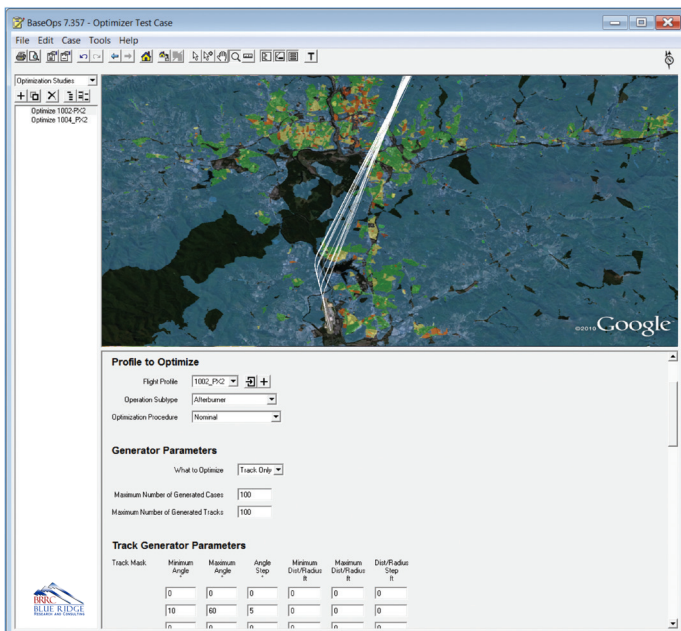
Screen shot of the **FLT Optimizer** software interface.

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Blue Ridge Research and Consulting, LLC is an acoustical engineering consultancy focused on solving our client's most critical noise and vibration challenges. Our staff of exceptional engineers has led the acoustics efforts on over 100 Federal projects.