

GE Aircraft Engines

“Optimising the core size of the oil heat exchanger to meet a specific oil temperature range is required to meet the reliability goals for the generator. There are multiple parameters that affect the operating temperature range of the oil. Aerospace companies want to optimise components for function, size, reliability and weight. Using worst case or corner point operating assumptions can lead to components that are not fully optimised.”

*Jeff Glover, Engine/
Aircraft Integration
Engineer*

GE Aircraft Engines successfully use Flowmaster to help their customer optimise heat exchanger design.

Determining the oil temperature operating range of an oil cooled electrical power generator can be a difficult task due to the many parameters that can influence it – such as the variation in power demands and the effectiveness of the oil heat exchanger over its lifetime. However, determining the maximum and minimum oil temperature operating range over a 10 year life cycle is exactly what the engineers at GE Aircraft Engines were asked to do by their airframe customer.

Why is the oil temperature operating range important?

Traditionally many companies use the worst case approach due to the amount of time taken to either physically test or simulate a component in the virtual environment.

Today's goal is to reduce physical testing due to cost and time issues and where possible use faster and less expensive simulation technology. Computing power & technology has advanced significantly to enable companies to explore more operating conditions and the effect of different parameters on the component or system performance in a shorter space of time.



