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(54) **Method of detecting in-range engine sensor faults**

(57) The subject invention is directed to a new and useful method of detecting in-range engine sensor faults for a gas turbine engine associated with a helicopter. The method includes the steps of computing engine shaft horsepower for a plurality of engine sensor, computing a first mean horsepower from the plurality of engine sensors, computing the horsepower deviation from the first mean horsepower for each engine sensor, computing a horsepower deviation ratio for each engine sensor relative to all other engine sensors, disabling the en-

gine sensor with the largest deviation from the first mean horsepower, computing a second mean horsepower, computing the horsepower deviation from the second mean horsepower for each engine sensor, re-computing the horsepower deviation ratio for each engine sensor relative to all other engine sensors, comparing the horsepower deviation ratios to predefined limits, and declaring a sensor fault if the horsepower deviation ratio for an engine sensor exceeds a predefined limit.

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