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Subject: NTSB# ERA23FA188

Contact: Alissa Eggenfellner (Viking Aircraft Engines)

Ms. Eggenfellner was contacted by the National Transportation Safety Board Investigator-in-Charge with request for technical assistance. The following are a summary of the details recalled:

Photographs of the engine's spark plugs were provided in addition to the make/ model as labeled on the spark plugs (IZFR6K – 13 – NGK-IR). Ms. Eggenfellner reported that those spark plugs are standard on this type of engine.

Ms. Eggenfellner was asked, what would occur with the engine should it be operated with regular 87 octane auto gas with the Viking 110 and what compression numbers would be expected?

Ms. Eggenfellner reported the below contents:

> On Page 78 of our manual, it has some fuel info:
>
> FUEL: These are high-compression, high-performance engines! Use 89 or higher octane fuel. Up to 10% ethanol is permitted. The approved storage fuel is 100LL aviation fuel. (Page 6). To answer the questions, the engine could detonate on 87 octane.
>
> With the automotive engines we don't perform differential compression checks. It is done with an automotive pressure gauge with a normal reading of a range from 180 to 210. As far as a compression ratio, it is 10.4:1.

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