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**Date:** September 10, 2024

**Subject:** ERA24LA124, MFD Warnings and Cautions

**Contact:** Mark Haroldson, Cirrus Aircraft

Mr. Haroldson sent an email on January 2, 2025, to further clarify the fuel warning indications that would have been displayed in the airplane. He commented:

“In SR20 series aircraft with the Avidyne Entegra, there is no warning displayed on the MFD for fuel quantity. Fuel quantity is indicated only by a gauge forward of the fuel selector. There is an Amber FUEL caution light on the annunciator panel that will illuminate to indicate a low fuel condition. The FUEL caution light will illuminate when approximately 14 gallons of total fuel remain between BOTH fuel tanks. This light will not illuminate if one tank is run dry while the other has more than 14 gallons remaining. If the aircraft has an EMAX system installed, fuel flow, used, remaining, and economy information can be displayed on the engine page. Please note, the remaining fuel is dependent on the pilot setting initial fuel quantity and is based on the fuel flow transducer, not the wing fuel quantity transducers for it’s readings. Initial Garmin equipped SR series aircraft utilized the same fuel quantity indication system.

In later Generations, the fuel quantity gauge was integrated into the avionics systems. These systems give the pilot warnings for each fuel tank that are independent of the other fuel tank. For fuel quantities, if one tank was below 10 gallons, a yellow warning was displayed on the PFD, and below 5 gallons a red caution was displayed. This was combined with balance indications giving a yellow warning on the PFD when fuel was more than 5 gallons off from the other and a red caution when it was more than 10 gallons off the other.”

“On SR series aircraft with Avidyne Entegra displays and the EMAX system installed, there would be no warning or caution during an event in which fuel flow decreases from normal to 0 during any phase of flight or ground operations. On those Avidyne

Entegra equipped aircraft without the EMAX system, no fuel flow information would be displayed. The analog gauges would also display the loss of fuel flow, but with no other warnings or cautions associated with it."

The IIC responded to Mr. Haroldson on February 19, 2025, to ask if the accident airplane had the Avidyne Entegra system with or without the EMAX system. Mr. Haroldson was also asked to confirm that with the Avidyne system, this airplane would get a FUEL amber caution on the panel if there was 14 gallons or less total fuel onboard the airplane? Also, if a fuel tank was run to empty, and there was no "FUEL" light, would that indicate the left wing had a minimum of 14 gallons of fuel?

Mr. Haroldson replied the same day stating:

"Per our build data for this aircraft, it did come with the EMAX system."

The amber light would only illuminate if there was less than 14 gallons of total fuel on board. (Usable)". Mr. Haroldson stated that this would indicate that if the right wing was depleted of useable fuel, that would indicate that the left wing would have 14 or more gallons of useable fuel.

Mr. Haroldson also commented "For clarification. This aircraft could hold a maximum of 56 gallons of usable fuel. Filling to the tabs equals 20 gallons per tank or 40 gallons of useable.

Also note that per the POH, there is a limit of 7.5 gallons of fuel imbalance. So, you are supposed to be switching often enough to keep tanks within 7.5 gallons of one another. On this generation of SR20, there is a timer set in the Garmin 430 to remind the pilot to switch tanks every 30 minutes.

-End of Conversation