



# Federal Aviation Administration

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## Memorandum

Date: October 23, 2012

From: Manager, Small Airplane Directorate, ACE-100

To: Manager, Wichita Aircraft Certification Office, ACE-115W

Prepared by: Tom Teplik, Aerospace Engineer, Wichita Aircraft Certification, ACE-116W

Subject: Extension for Equivalent Level of Safety (ELOS), Electronic Engine Instrument Display, Cessna 208B

ELOS Memo#: ACE-08-06A

Regulatory Ref: 14 CFR, part 23, §§ 23.1305(c)(2), (c)(5), 23.1549(a)(b)(c)

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Cessna has requested an extension of ELOS ACE-08-06 “Electronic Engine Instrument Display”, granted April 10, 2008, for the Cessna 208B, per Cessna letter L390-12-1835. ACE-08-06 was granted for the 208/208B with the Garmin G1000 Integrated Cockpit System (ICS) equipped with the Pratt & Whitney Canada (P&WC) PT6A-114A engine. The PT6A-114A engine is a 675 shaft hp engine and the maximum propeller speed is 1900 RPM. The torque is 1865 foot-pounds at 1900 RPM propeller speed varying to 1970 foot-pounds at 1800 RPM.

Cessna is now amending the 208/208B type certificate (TC) for the installation of the P&WC PT6A-140 engine on the 208B aircraft with the Garmin G1000 Integrated Cockpit System (ICS). The PT6A-140 engine is an 867 shaft hp engine and the maximum continuous torque is 2,397 foot-pounds.

The original ELOS, ACE-08-06, was granted for 14 CFR, part 23, § 23.1305(c)(2), Amendment 23-52 for the use of a digital fuel flow. The digital fuel flow digital indication for the G1000 is the same for the PT6A-140 engine installation except the fuel flow range increased to account for the higher fuel flows for the PT6A-140 engine. There are no cautionary or fuel flow limits, which is the same as for the PT6A-114A engine.

ELOS ACE-08-06 was granted for 14 CFR, part 23, § 23.1549(a)(b)(c), Amendment 23-45 for the use of a digital fuel flow. The PT6A-140 fuel flow does not have any limits, which would require operating range markings. This is the same as for the G1000 for the PT6A-114A engine installation for which the ACE-08-06 ELOS was granted.

ELOS ACE-08-06 was granted for 14 CFR, part 23, § 23.1305(c)(5), Amendment 23-52 for the use of a digital propeller RPM indication for the G1000 for the PT6A-114A engine installation. The “PROP RPM” digital indication for the PT6A-140 engine installation has the same values and same ranges for the green, white, and red digital values as the PT6A-114A engine. The propeller speed digital values change in the same manner as the G1000 for the PT6A-114A engine installation. The G1000 for the PT6A-140 engine has a torque indication and the PT6A-140 engine has governing and overspeed protection, which were compensating features used in the issuance of the original ELOS ACE-08-06.

ELOS ACE-08-06 was granted for 14 CFR, part 23, § 23.1549(a)(b)(c), Amendment 23-45 for use of the digital only propeller RPM indication. There are no takeoff or precautionary ranges for propeller RPM defined by the propeller manufacturer. The colors for the propeller RPM digital values are the same for the G1000 for the PT6A-140 and PT6A-114A engine installations.

The Wichita ACO has reviewed Cessna’s information regarding the G1000 for the PT6A-140 engine installation and requests an extension of ELOS ACE-08-06. The Wichita ACO concurs and believes ACE-08-06 should be extended for the Cessna 208B with the G1000 and the PT6A-140 engine installation.

*James E. Jackson*

Manager, Small Airplane Directorate,  
Aircraft Certification Service

*10-23-12*

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ELOS Originated by Wichita ACO: ACE- 116W	Acting Manager, Aircraft Certification Office, Charles Riddle	Routing Symbol: ACE-115W
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