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TEXTRON AVIATION

October 30, 2019

In Reply, Refer to: 19-3121

Coroners Court of Victoria
Marde Bevan, Coroner's Registrar
65 Kavanagh Street
Southbank, VIC 3006

Subject: Textron Aviation (TA) Response to the Coroners Court of Victoria, Coroner's Report, COR 2015 004584, dated October 2, 2019

Dear Marde Bevan:

This letter transmits Textron Aviation's (TA) response to the Coroners Court of Victoria, Coroner's Report, COR 2015 004584, dated October 2, 2019

Coroner's Report COR 2015 004584

Pursuant to section 72(2) of the Act, I make the following recommendations connected with this death:

1. Cessna Aircraft Company (Textron)

> *That Cessna Aircraft Company, in conjunction with Garmin, implement changes to their operations manuals so that all aircraft types fitted with their autopilots have the limitations, cautions and warnings applied consistently.*

TA Response

TA received the ATSB Aviation occurrence Investigation report AO-2015-105 (Final), dated April 17, 2018 that contained ATSB Safety Recommendation (SR) AO-2015-105-SR-004.

> *AO-2015-105-SR-004: The ATSB recommends that Cessna Aircraft Company, in conjunction with Garmin, implement changes to their operations manuals so that all aircraft types fitted with their autopilots have the limitations, cautions and warnings applied consistently.*

TA's response letter, L-175-18-039, dated July 26, 2018 is attached. The TA response is below:

> *In response to the ATSB safety recommendation noted above Textron Aviation is implementing the following action: (NOTE: This revision, dated September 28, 2018, was implemented prior to receiving the Coroner's recommendation)*
>
> *We are issuing a revision to the Pilot Safety and Warning Supplement that is provided with every Cessna Aircraft propeller product Owner's Manual and Pilot's Operating Handbook. The Supplement is also available through our Customer Service website. The revised document will*

contain a section on "Autopilots and Electric Trim Systems." This section will contain a warning that overriding an engaged autopilot system will cause the trim system to oppose the pilot's input and result in an out of trim condition.

Putting the autopilot information in the Pilot Safety and Warning Supplement will reach substantially more individuals then placing it in the 172S POH. We include a copy of the supplement for free with every Cessna propeller product (from the Cessna 120 to the Cessna 441) owner's manual, information manual, and POH that are ordered.

The referenced revision supplement, "Autopilots and Electric Trim System," to the Pilot Safety and Warning Supplement of the Owner's Manual and Pilot's Operating Handbook is also attached.

Thank you for the opportunity to respond to the Coroners Court of Victoria, Coroner's Report, COR 2015 004584, dated October 2, 2019. Should you have any additional questions, please feel free to contact Tom Haynes at (316) 517-6440, or email at thaynes@txtav.com.

Sincerely,

Textron Aviation

Robert Ramey, Manager
Continued Operational Safety

RR/twh

Attachments: TA response letter, L-175-18-039, dated July 26, 2019
21 Pilot Safety and Warning Supplement 19

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TEXTRON AVIATION

July 26, 2018

IN REPLY REFER TO:
L-175-18-039

Eric Blankenstein
Senior Transport Safety Investigator - Aviation
Australian Transport Safety Bureau
Level 6, 179 Turbot St.
Brisbane, QLD 4000
Australia

RE: 2010 Cessna 172S; Serial number: 172S11079; REG: VH-ZEW
Location: Millbrook, VIC, Australia; D/A: September 8, 2015
ATSB report number: AO-2015-105
ATSB safety recommendation number: AO-2015-105-SR-004

Dear Mr. Blankenstein,

In response to the ATSB safety recommendation noted above Textron Aviation is implementing the following action:

We are issuing a revision to the Pilot Safety and Warning Supplement that is provided with every Cessna Aircraft propeller product Owner's Manual and Pilot's Operating Handbook. The Supplement is also available through our Customer Service website. The revised document will contain a section on "Autopilots and Electric Trim Systems." This section will contain a warning that overriding an engaged autopilot system will cause the trim system to oppose the pilot's input and result in an out of trim condition.

If further assistance is required, please contact me or another member of our Air Safety Investigations Department.

Sincerely,

Henry J. Soderlund
Senior Air Safety Investigator

Textron Aviation – Dept. 175
Office: 316.517.3122 -- Mobile: 316.617.9203 -- Fax: 316.206.4745
Email: hsoderlund@txtav.com

AUTOPILOTS AND ELECTRIC TRIM SYSTEMS

Because there are several different models of autopilots and electric trim systems installed in airplanes and different installations and switch positions are possible from airplane to airplane, it is essential that every pilot review the airplane operating handbook and/or the Garmin Integrated Flight Deck Cockpit Reference Guide (CRG) and Pilot's Guide (PG) if equipped with a Garmin Automatic Flight Control System (AFCS) for the specific autopilot and trim systems installed in their airplane. Each pilot prior to flight, must be fully aware of the proper procedures for operation, and particularly disengagement, for the system as installed.

In addition to ensuring compliance with the autopilot manufacturer's maintenance requirements, all pilots should thoroughly familiarize themselves with the operation, function and procedures described in the airplane operating handbook and/or the Garmin Integrated Flight Deck Cockpit Reference Guide (CRG) and Pilot's Guide. Ensure a full understanding of the methods of engagement and disengagement of the autopilot and trim systems. Compare the descriptions and procedures to the actual installation in the airplane to ensure it accurately describes the system installed. Test that all buttons, switches and circuit breakers function properly as described. If they do not function as described, have them repaired by a qualified service facility prior to using them in flight.

A preflight check as stated in all airplane operating handbooks for the autopilot and trim systems must be conducted before every flight. The preflight check assures not only that the systems and all the features are operating properly, but also that the pilot, before flight, is familiar with the proper means of engagement and disengagement of the autopilot and trim system.

Autopilot airplane operating handbooks caution against trying to override the autopilot system during flight without disengaging the autopilot because the autopilot will continue to trim the airplane and oppose the pilot's actions. This could result in a severely out of trim condition. This is a basic feature of all autopilots with electric trim follow-up.

Do not try to manually override the autopilot during flight.

WARNING

OVERRIDING AN ENGAGED AUTOPILOT SYSTEM DURING FLIGHT CAUSES THE TRIM SYSTEM TO TRIM THE AIRPLANE AND OPPOSE THE PILOT'S INPUT, RESULTING IN A SEVERELY OUT OF TRIM CONDITION.

CAUTION

IN CASE OF EMERGENCY, YOU CAN OVERPOWER THE AUTOPILOT TO CORRECT THE ATTITUDE, BUT THE AUTOPILOT AND ELECTRIC TRIM MUST THEN IMMEDIATELY BE DISENGAGED. DO NOT RE-ENGAGE THE AUTOPILOT OR USE THE ELECTRIC TRIM SYSTEM FOR THE REMAINDER OF THE FLIGHT OR ANY FUTURE FLIGHTS UNTIL THE SYSTEMS HAVE BEEN REPAIRED.

It is often difficult to distinguish an autopilot malfunction from an electric trim system malfunction. The safest course is to deactivate both. Do not re-engage either system until after you have safely landed. Then have the systems checked by a qualified service facility prior to further flight.

Depending upon the installation on your airplane, the following additional methods may be available to disengage the autopilot or electric trim in the event the autopilot or electric trim does not disengage utilizing the disengage methods specified in the Supplements and/or the Garmin CRG and PG.

CAUTION

TRANSIENT CONTROL FORCES MAY OCCUR WHEN THE AUTOPILOT IS DISENGAGED.

1. Push the autopilot or autopilot trim disconnect switch on the yoke, if installed.
2. Operate the electric trim switch on the yoke, if installed.
3. Push the autopilot (AP) switch or button on the autopilot controller (this switch or button when pushed alternately engages and disengages the autopilot), if installed.
4. Turn off the autopilot master switch, if installed.
5. Pull the autopilot and trim circuit breaker(s) or turn off the autopilot switch breaker, if installed.
6. Push the go around (GA) switch or button on throttle grip or located on the instrument panel by the throttle control.

The above ways may or may not be available on your autopilot. It is essential that you the pilot, read your airplane's AFM supplement and/

or the Garmin CRG and PG, for your autopilot system and check each function and operation on your system.

The engagement of the autopilot must be done in accordance with the instructions and procedures contained in the airplane operating handbook and/or the Garmin CRG and PG.

Particular attention must be paid to the autopilot settings prior to engagement. If the autopilot is engaged when the airplane is out of trim, a large attitude change may occur.

CAUTION

IT IS ESSENTIAL THAT THE PROCEDURES SET FORTH IN THE APPROVED AFM SUPPLEMENTS AND/OR THE GARMIN CRG AND PG, FOR YOUR SPECIFIC INSTALLATION BE FOLLOWED BEFORE ENGAGING THE AUTOPILOT.