

No. 2831

FMS SCN 802.7/902.7 Missed Approach Guidelines on Advisory Approaches

To: Universal FMS Operators using SCN 802.X or 902.X

Subject: FMS SCN 802.7/902.7 Missed Approach Guidelines on Advisory Approaches

In SCN 802.6/902.6 Universal Avionics implemented a product improvement to present a Missed Approach Prompt for Advisory Approaches and enable a TOGA (Take Off, Go Around) input to activate this prompt. This change would allow an operator to have the FMS provide advisory information for the approach segment and the missed approach procedure. For advisory approaches the FMS approach mode cannot be armed and activated and the FMS provides terminal mode guidance for the approach and missed approach legs.

It has been determined that this functionality is not working as intended in SCN 802.7/902.7. In SCN 802.7/902.7 the FMS will not recognize the TOGA discrete input or the Missed Approach Line Select Key (LSK) activation on an advisory approach. The FMS does not remove the *EOA* GAP and will not leg sequence to the missed approach procedure. The Missed Approach prompt is grayed out, which may lead the crew to believe that it has worked as intended.

This only affects an advisory approach which cannot be armed or activated (this can be determined by referring to the AFMS for the aircraft). For other approach types that can be armed and activated the TOGA discrete input or the Missed Approach LSK operates as designed.

A workaround procedure was developed for SCN 802.5/902.5 and previous software versions. As an option for advisory approaches, to allow the FMS to be used to assist in navigating the missed approach the approach *EOA* GAP may be deleted from the flight plan. If a missed approach is required, selecting the FMS as source guidance will provide FMS terminal mode guidance for the missed approach procedure. This same workaround procedure should be used with SCN 802.7/902.7 as detailed in the table below.

NOTE: When removing the *EOA* GAP, the leg following the *EOA* GAP may be altered. It is the pilot's responsibility to insure navigational compliance with the intent of the missed approach procedure.

NOTE: Deleting the *EOA* GAP from the flight plan only applies to advisory approaches. The removal of *EOA* GAP from an enabled approach will not allow the approach to be armed or activated.

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Indications to the pilot and the workaround procedures are in the table below.

802.5/902.5 and before	802.6/902.6 with improvement	802.7/902.7 with defect
Inside the FAF		
<ul style="list-style-type: none"> • Terminal Scaling 1.0 NM • No Approach Arming or Activation • No Missed Approach prompt available • Crew uses traditional SRN guidance for the approach 	<ul style="list-style-type: none"> • Terminal Scaling 1.0 NM • No Approach Arming or Activation • Missed Approach prompt is presented on CDU • Crew uses traditional SRN guidance for the approach 	<ul style="list-style-type: none"> • Terminal Scaling 1.0 NM • No Approach Arming or Activation • Missed Approach prompt is presented on CDU • Crew uses traditional SRN guidance for the approach
Missed Approach procedure		
<ul style="list-style-type: none"> • Crew selects TOGA for missed • Crew selects FMS for lateral guidance • Terminal Scaling 1.0 NM • Without workarounds below the FMS does not sequence past the *EOA* and will not provide missed approach procedure guidance 	<ul style="list-style-type: none"> • Crew selects TOGA or presses the Missed Appr LSK for missed • Crew selects FMS for lateral guidance • Terminal Scaling 1.0 NM • Selecting TOGA or the Missed Approach prompt cause the FMS to delete the *EOA* and to leg sequence to the missed approach procedure legs • Missed Approach prompt is grayed out 	<ul style="list-style-type: none"> • Crew selects TOGA or presses the Missed Appr LSK for missed • Crew selects FMS for lateral guidance • Terminal Scaling 1.0 NM • Selecting TOGA or the Missed Approach prompt has no affect on the leg sequencing. • Missed Approach prompt is grayed out
What the Crew sees without workaround		
<ul style="list-style-type: none"> • Lateral guidance is leg extension from inbound course • TO waypoint remains as last waypoint in the approach before *EOA* label • TO/FROM flag changes to FROM indication • The distance to waypoint will begin to count up 	<ul style="list-style-type: none"> • Lateral guidance is leg to first waypoint in missed procedure • TO waypoint changes to next waypoint in the procedure • TO/FROM flag remains as TO indication • The distance to waypoint will be counting down 	<ul style="list-style-type: none"> • Lateral guidance is leg extension from inbound course • TO waypoint remains as last waypoint in the approach before *EOA* label • TO/FROM flag changes to FROM indication • The distance to waypoint will begin to count up

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Workaround to present Missed Approach Procedure Guidance		
<ul style="list-style-type: none"> • Crew deletes the *EOA* GAP in the flight plan. This allows the FMS to present continued guidance <p>Or</p> <ul style="list-style-type: none"> • After Missed is initiated and LRN selected, a manual leg change is made to the missed approach procedures legs 	<ul style="list-style-type: none"> • None needed 	<ul style="list-style-type: none"> • Crew deletes the *EOA* GAP in the flight plan. This allows the FMS to present continued guidance <p>Or</p> <ul style="list-style-type: none"> • After Missed is initiated and LRN selected, a manual leg change is made to the missed approach procedures legs <p>Or</p> <ul style="list-style-type: none"> • The crew does not select the FMS as the active nav source and flies the missed approach procedure via short range navigation guidance.

Universal Avionics will release an FMS software revision, SCN 802.8/902.8, that allows the product improvement implemented in SCN 802.6/902.6, to function as intended. This release will be announced via a separate Service Bulletin.

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