

**FMS Version 4.2 (FMS v4.2) remains in Independent (INDEP) mode on power-up or crew selection of SYNC mode after the FMS have reverted to INDEP mode**

**OPSB**





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**To:** Operators of Rockwell Collins Flight Management Systems FMS-3000/4200/5000/6000

**Fr:** Commercial Systems Customer Services

**Subject:**

FMS Version 4.2 (FMS v4.2) remains in Independent (INDEP) mode on power-up or crew selection of SYNC mode after the FMS have reverted to INDEP mode.

**Overview:**

This Operators Bulletin only applies to dual/triple FMS v4.2 installations.

Activating a second Flight Plan (SEC FPLN) will often drive the FMS into INDEP mode. Once in INDEP mode, the FMS will not return to SYNC mode on power up or crew selection.

**Details:**

The FMS version can be determined from the NAV Database name on the CDU STATUS page. FMS v4.2 uses Type 8 databases which will contain J8 or L8 (e.g. J8-WORLD) in the database name.

The FMS will revert to INDEP mode when FMS v4.2 cross-talks a SEC FPLN that contains history waypoints. Once in INDEP mode the FMS will not return to SYNC mode until the SEC flight plan history waypoints are removed.

History waypoints are only created in the active flight plan (ACT FPLN) when the FMS sequences waypoints in the ACT FPLN.

A SEC flight plan with history waypoints is created when the pilot activates a SEC FPLN which results in the ACT FPLN and SEC FPLN being swapped. When the original ACT FPLN including history waypoints becomes the new SEC FPLN, it is cross-talked between the FMS and both the FMS revert to INDEP mode. The FMS INDEPENDENT OP message is displayed but no message is provided as to why the FMS reverted to INDEP mode.

Once the SEC FPLN contains history waypoints the FMS will always power up in INDEP mode. Note that the crew cannot determine from the display of the SEC FPLN whether the SEC FPLN does or does not contain history waypoints.

The work around for this issue requires removing the history waypoints from the SEC FPLN on both the FMS being synced. Removing history waypoints from the SEC FPLN can be done by:

1. Deleting the SEC FPLN on both FMS to be synced, or
2. On ground, cycling the NAV Database effective period back and forth on both FMS to be synced.

#### Aircraft with the SYNC/INDEP control on the FMS CONTROL page (CDU)

When the SEC FPLN does not contain history waypoints, aircraft with the SYNC/INDEP control can use the control to re-sync the FMS in the air and on the ground.

With the aircraft on the ground, cycling the power to the FMS will also re-sync the FMS when the SEC FPLN does not contain history waypoints.

#### Aircraft without a SYNC/INDEP control on the FMS CONTROL page (CDU)

FMS cannot be re-synced in the air.

With the aircraft on the ground, a power cycle of the FMS will re-sync the FMS when the SEC FPLN does not contain history waypoints.

#### **Recommendation:**

##### To reduce the instances of INDEP operation on aircraft **with** a SYNC/INDEP control.

1. Do not use Activate SEC FPLN while airborne.
  - a. For those pilots that use the SEC FPLN to accommodate last minute runway changes at busy airports, an alternative is to use the MOD flight plan, but not EXEC the change.
    - i. This will result in a yellow EXEC FPLN MOD message after 15 secs without CDU keystrokes.
  - b. If the SEC FPLN is activated and the FMS revert to INDEP mode:
    - i. Delete the SEC flight plan origin airport on both FMS to be synced, then
    - ii. Use the SYNC/INDEP control to attempt to SYNC the FMS.
2. To prevent INDEP mode on power up follow these steps prior to powering the FMS down:
  - a. If the ACT FPLN and/or SEC FPLN need to be retained for the next leg, store the needed flight plans as Pilot Routes.
    - i. Note that the Pilot Routes get synced between FMS, therefore if in INDEP mode it is only necessary to store the needed route/s on one side.
  - b. Cycle the NAV Database effective period back and forth. This will clear the ACT FPLN and SEC FPLN as well as all the history waypoints.

- i. Note that if in INDEP mode this will have to be done on both sides.
  - c. Power down the FMS
  - d. The FMS will power up in SYNC
  - e. Activate the needed Pilot Route for the current leg.
3. If on power up the FMS are in INDEP mode follow step 2b above then use the SYNC INDEP control to SYNC the FMS.

**To reduce the instances of INDEP operation on aircraft **without** a SYNC/INDEP control.**

4. Do not use Activate SEC FPLN while airborne.
  - a. For those pilots that use the SEC FPLN to accommodate last minute runway changes at busy airports, an alternative is to use the MOD flight plan but not EXEC the change.
    - i. This will result in a yellow EXEC FPLN MOD message after 15 secs without CDU keystrokes.
5. To prevent INDEP mode on power up follow these steps prior to powering the FMS down:
  - a. If the ACT FPLN and/or SEC FPLN need to be retained for the next leg, store the needed flight plans as Pilot Routes.
    - i. Note that the Pilot Routes get synced between FMS, therefore if in INDEP mode it is only necessary to store the needed route/s on one side.
  - b. Cycle the NAV Database effective period back and forth. This will clear the ACT FPLN and SEC FPLN as well as all the history waypoints.
    - i. Note that if in INDEP mode this will have to be done on both sides.
  - c. Power down the FMS
  - d. The FMS will power up in SYNC
  - e. Activate the needed Pilot Route for the current leg.
6. If on power up the FMS are in INDEP mode then go to step 2a above.

**Impact:**

The FMS syncing functionality is not working as expected causing additional workload for the operator. The issue can be prevented by not activating a SEC FPLN. This is not deemed to be a safety concern as the FMS gives indication of FMS INDEPENDENT OP and workarounds have been identified to be able to restore the FMS Sync capability.

If you have questions regarding this operator bulletin, please contact your local Rockwell Collins Customer Service Engineer, call Rockwell Collins FMS Technical Support at 319.295.5000 or email [Customersupport@Rockwellcollins.com](mailto:Customersupport@Rockwellcollins.com).

