

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. 2000-CE-13-AD; Amendment 39-12939; AD 2002-22-13]

RIN 2120-AA64

Airworthiness Directives; Rockwell Collins, Inc. FMC-4200, FMC-5000, and FMC-6000 Flight Management Computers

AGENCY: Federal Aviation Administration, DOT.

ACTION: Final rule.

SUMMARY: This amendment adopts a new airworthiness directive (AD) that applies to certain Rockwell Collins, Inc. (Rockwell Collins) FMC-4200, FMC-5000, and FMC-6000 flight management computers (FMC) that are installed on airplanes. This AD requires you to remove the affected FMC unit and replace it with a new FMC unit or an FMC unit that has been modified to correct a problem with the flight management system (FMS) accepting new information when an existing procedure or flight plan is changed. This AD is the result of a report that an aircraft proceeded beyond the published altitude constraint on an arrival procedure. The actions specified by this AD are intended to prevent the FMC from retaining and displaying original altitude constraints when an edit or a replacement is made to a procedure or flight plan that shares a waypoint with another procedure or an airway, and there is an altitude constraint on the shared waypoint. Such a condition could cause the pilot to fly the airplane out of the range of the correct altitude constraint. This condition could result in air traffic control or the pilot making flight decisions that put the airplane in unsafe flight conditions.

DATES: This AD becomes effective on December 20, 2002.

ADDRESSES: You may get the service information referenced in this AD from Rockwell Collins, Business and Regional Systems, 400 Collins Road Northeast, Cedar Rapids, Iowa 52498; telephone: (319) 295-2512; facsimile: (319) 295-5064. You may view this information at the Federal Aviation Administration (FAA), Central Region, Office of the Regional Counsel, Attention: Rules Docket No. 2000-CE-13-AD, 901 Locust, Room 506, Kansas City, Missouri 64106; or at the Office of the Federal Register, 800 North Capitol Street, NW., Suite 700, Washington, DC.

FOR FURTHER INFORMATION CONTACT: Roger A. Souter, FAA, Wichita Aircraft Certification Office (ACO), 1801 Airport Road, Rm 100, Wichita, Kansas 67209; telephone: (316) 946-4134; facsimile: (316) 946-4407. E-mail address: Roger.Souter@faa.gov.

SUPPLEMENTARY INFORMATION:

Discussion

What events have caused this AD? The FAA received a report of an incident that occurred during a flight arriving in Toronto, Ontario. A change in the flight management computer (FMC) had been made to the original flight plan changing the altitude constraint to 8,000 feet-11,000 feet. However, the flight management system (FMS) retained the altitude constraint of the original flight plan of 10,000 feet-14,000 feet. The pilot was unaware of this situation occurring, which resulted in the descent of the airplane beyond the published altitude constraint on the arrival procedure.

When the FMC is operating correctly and a change is made, the FMS allows the pilot to delete information associated with a procedure or flight plan by deleting the procedure or by replacing the procedure.

Rockwell Collins FMC-4200, FMC-5000, and FMC-6000 flight management computers could be installed on, but not limited to, the following aircraft:

- Raytheon Model Beechjet 400A and Model 400T (T-1A) airplanes;
- Bombardier Model CL-600-2B19 Regional Jet Series 100 airplanes; and
- Bombardier Model CL-600-2B16 (variant CL-604) airplanes.

What is the potential impact if FAA took no action? As described above, such erroneous altitude constraints retained by the FMS could cause the pilot to fly the airplane out of the range of the correct altitude constraint. This condition could result in air traffic control or the pilot making flight decisions that put the airplane in unsafe flight conditions.

Has FAA taken any action to this point? We issued a proposal to amend part 39 of the Federal Aviation Regulations (14 CFR part 39) to include an AD that would apply to Rockwell Collins FMC-4200, FMC-5000, and FMC-6000 flight management computers (FMC) that are installed on airplanes. This proposal was published in the Federal Register as a notice of proposed rulemaking (NPRM) on July 10, 2002 (67 FR 45678). The NPRM proposed to require you to remove the affected FMC unit and replace it with a new FMC unit or an FMC unit that has been modified to correct a problem with the flight management system (FMS) accepting new information when an existing procedure or flight plan is changed.

Was the public invited to comment? The FAA encouraged interested persons to participate in the making of this amendment. The following presents the comments received on the proposal and FAA's response to each comment:

Comment Issue No. 1: List Affected FMC Units by Part Numbers in Addition to Model Number

What is the commenter's concern? Two commenters state that there are numerous part numbers associated with each FMC model number that are not affected by the proposed AD. The commenters state that only seven part numbers are actually affected by the proposed AD as specified in Rockwell Collins Operator Bulletin 99-11, dated September 1999. The way the proposed AD is currently written, an owner/operator of an aircraft with any of the specified model FMCs installed would be subject to the proposed AD. Therefore, adding specific affected part numbers in the AD will significantly reduce the burden on owners/operators of aircraft equipped with the specified FMC model.

What is FAA's response to the concern? We concur with the commenters and will clearly identify the seven affected FMC part numbers in the AD.

Comment Issue No. 2: Remove the Manufacturer's Service Bulletins From the Procedures Requirements of the Proposed AD and List Acceptable Replacement FMC Part Numbers

What is the commenter's concern? The corrective action required is to modify the affected FMC unit. Only a Rockwell Collins Service Center is authorized to modify (rework) the affected FMC units. The modification includes changing the FMC part number when the unit is reworked. Therefore, it is irrelevant whether an owner/operator has a reworked unit or a newly manufactured unit installed provided the part number is correct.

What is FAA's response to the concern? We concur with the commenters and will include a list of acceptable replacement part numbers in the proposed AD. We will not reference the individual service bulletins in the AD.

Comment Issue No. 3: Add a Note in the AD Alerting Owners/Operators That Certain FMC Part Numbers Affect Other Installed Avionics Units

What is the commenter's concern? The commenter states that all of the FMC corrective actions involve a change in the FMC part number. Before a part number has been certified for installation on the particular aircraft, through either the Type Certification or Supplemental Type Certification process, you should also determine whether additional avionics units need to be upgraded at the same time to be compatible with the selected FMC part number. The commenter suggests that a note to this effect be included in the AD.

What is FAA's response to the concern? We concur with the commenter and will include a note in the AD to address this concern.

FAA's Determination

What is FAA's final determination on this issue? After careful review of all available information related to the subject presented above, we have determined that air safety and the public interest require the adoption of the rule as proposed except for the additions discussed previously and minor editorial corrections. We have determined that these additions and minor corrections:

- Provide the intent that was proposed in the NPRM for correcting the unsafe condition; and
- Do not add any additional burden upon the public than was already proposed in the NPRM.

Cost Impact

How many airplanes does this AD impact? We estimate that 700 affected Rockwell Collins FMC-4200, FMC-5000, and FMC-6000 flight management computers could be installed on airplanes in the U.S. registry. Some airplanes have more than one unit installed.

What is the cost impact of this AD on owners/operators of the affected airplanes? We estimate the following costs to accomplish the modification:

Labor cost	Parts cost	Total cost per FMC unit
4 workhours per FMC unit X \$60 per hour = \$240	\$500 per FMC unit	\$740

Compliance Time of This AD

What would be the compliance time of this AD? The compliance time of this AD is "within the next 24 calendar months after the effective date of this AD, unless already accomplished."

Why is the compliance time presented in calendar time instead of hours time-in-service (TIS)? The compliance of this AD is presented in calendar time instead of hours TIS because the condition exists regardless of airplane operation. The FMS retention of invalid altitude constraint information could occur regardless of the number of times and hours the airplane was operated. For these reasons, FAA has determined that a compliance based on calendar time should be utilized in this AD in order to ensure that the unsafe condition is addressed in a reasonable time period on all airplanes that have an affected Rockwell FMC-4200, FMC-5000, or FMC-6000 flight management computer installed.

Regulatory Impact

Does this AD impact various entities? The regulations adopted herein will not have a substantial direct effect on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government. Therefore, it is determined that this final rule does not have federalism implications under Executive Order 13132.

Does this AD involve a significant rule or regulatory action? For the reasons discussed above, I certify that this action (1) is not a "significant regulatory action" under Executive Order 12866; (2) is not a "significant rule" under DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979); and (3) will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act. A copy of the final evaluation prepared for this action is contained in the Rules Docket. A copy of it may be obtained by contacting the Rules Docket at the location provided under the caption ADDRESSES.

List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Safety.

Adoption of the Amendment

Accordingly, under the authority delegated to me by the Administrator, the Federal Aviation Administration amends part 39 of the Federal Aviation Regulations (14 CFR part 39) as follows:

PART 39—AIRWORTHINESS DIRECTIVES

1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

§ 39.13 [Amended]

2. FAA amends § 39.13 by adding a new AD to read as follows:

AIRWORTHINESS DIRECTIVE



Aircraft Certification Service
Washington, DC

U.S. Department
of Transportation
**Federal Aviation
Administration**

We post ADs on the internet at "www.airweb.faa.gov/rgl"

The following Airworthiness Directive issued by the Federal Aviation Administration in accordance with the provisions of Title 14 of the Code of Federal Regulations (14 CFR) part 39, applies to an aircraft model of which our records indicate you may be the registered owner. Airworthiness Directives affect aviation safety and are regulations which require immediate attention. You are cautioned that no person may operate an aircraft to which an Airworthiness Directive applies, except in accordance with the requirements of the Airworthiness Directive (reference 14 CFR part 39, subpart 39.3).

2002-22-13 Rockwell Collins, Inc.: Amendment 39-12939; Docket No. 2000-CE-13-AD.

(a) *What airplanes are affected by this AD?* This AD affects Rockwell Collins flight management computers (FMC) specified in paragraph (a)(1) that are installed on, but not limited to, the aircraft specified in paragraph (a)(2).

(1) Rockwell Collins flight management computers: The following presents the affected FMC models and part numbers:

Affected FMC model No.	Affected FMC Collins part No.
FMC-4200	822-0783-002
FMC-4200	822-0783-006
FMC-4200	822-0783-010
FMC-5000	822-0891-001
FMC-6000	822-0868-004
FMC-6000	822-0868-010
FMC-6000	822-0868-021

(2) Affected airplanes: The following presents a list of aircraft (certificated in any category) that the affected Rockwell Collins FMC units are installed on (other airplanes could have the installation):

Type certificate holder	Affected airplanes
Raytheon	Model Beechjet 400A and Model 400T (T-1A).
Bombardier	Model CL-600-2B19 Regional Jet Series 100 and Model CL-600-2B16 (variant CL-604).

(b) *Who must comply with this AD?* Anyone who wishes to operate an aircraft equipped with one of the affected FMCs must comply with this AD.

(c) *What problem does this AD address?* The actions specified by this AD are intended to prevent the FMC from retaining original information when an edit is made to a procedure or flight plan. Such a condition could cause the pilot to fly the airplane out of the range of the correct altitude constraint. This condition could result in air traffic control or the pilot making flight decisions that put the airplane in unsafe flight conditions.

(d) *What actions must I accomplish to address this problem?* To address this problem, you must accomplish the following:

Actions	Compliance
(1) Remove the affected FMC unit specified in paragraph (a)(1) of this AD and install a modified or new FMC unit (as specified in paragraph (e) of this AD) in accordance with the applicable maintenance manual.	Within the next 24 calendar months after December 20, 2002 (the effective date of this AD), unless already accomplished.
(2) Do not install, on any aircraft, an affected FMC unit specified in paragraph (a)(1) of this AD that has not been modified to the replacement part number specified in paragraph (e) of this AD.	As of December 20, 2002 (the effective date of this AD).

Note 1: When selecting a replacement FMC part number, determine if the part number has been certified for installation on the particular aircraft through either the Type Certification or Supplemental Type Certification process. Also, determine whether additional avionics units must be upgraded at the same time to be compatible with the selected replacement FMC part number.

(e) *What are the acceptable replacement FMC part numbers?*

FMC affected part No.	Acceptable replacement FMC part No.
822-0783-002	822-0783-011 or 822-0783-013
822-0783-006	822-0783-011 or 822-0783-013
822-0783-010	822-0783-011 or 822-0783-013
822-0891-001	822-0891-005 or 822-0891-008
822-0868-004	822-0868-029, 822-0868-030, 822-0868-031, or 822-0868-032
822-0868-010	822-0868-029, 822-0868-030, 822-0868-031, or 822-0868-032
822-0868-021	822-0868-029, 822-0868-030, 822-0868-031, or 822-0868-032

(f) *Can I comply with this AD in any other way?* You may use an alternative method of compliance or adjust the compliance time if:

- (1) Your alternative method of compliance provides an equivalent level of safety; and
- (2) The Manager, Wichita Aircraft Certification Office (ACO), approves your alternative.

Submit your request through an FAA Principal Maintenance Inspector, who may add comments and then send it to the Manager, Wichita ACO.

Note 2: This AD applies to each airplane identified in paragraph (a) of this AD, regardless of whether it has been modified, altered, or repaired in the area subject to the requirements of this AD. For airplanes that have been modified, altered, or repaired so that the performance of the requirements of this AD is affected, the owner/operator must request approval for an alternative method of compliance in accordance with paragraph (f) of this AD. The request should include an assessment of the effect of the modification, alteration, or repair on the unsafe condition addressed by this AD; and, if you have not eliminated the unsafe condition, specific actions you propose to address it.

(g) *Where can I get information about any already-approved alternative methods of compliance?*

Contact Roger A. Souter, FAA, Wichita Aircraft Certification Office (ACO), 1801 Airport Road, Rm 100, Wichita, Kansas 67209; telephone: (316) 946-4134; facsimile: (316) 946-4407. E-mail address: Roger.Souter@faa.gov.

(h) *What if I need to fly the airplane to another location to comply with this AD?* The FAA can issue a special flight permit under sections 21.197 and 21.199 of the Federal Aviation Regulations (14 CFR 21.197 and 21.199) to operate your airplane to a location where you can accomplish the requirements of this AD.

(i) *When does this amendment become effective?* This amendment becomes effective on December 20, 2002.

Issued in Kansas City, Missouri, on October 28, 2002.
Michael Gallagher,
Manager, Small Airplane Directorate, Aircraft Certification Service.
[FR Doc. 02-28052 Filed 11-4-02; 8:45 am]
BILLING CODE 4910-13-U