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**DEPARTMENT OF TRANSPORTATION**

**Federal Aviation Administration**

**14 CFR Part 39**

**[Docket No. FAA-2008-1318; Directorate Identifier 2008-NM-155-AD; Amendment 39-15848; AD 2009-06-12]**

**RIN 2120-AA64**

**Airworthiness Directives; Bombardier Model CL-600-2B19 (Regional Jet Series 100 & 440) Airplanes**

**AGENCY:** Federal Aviation Administration (FAA), Department of Transportation (DOT).

**ACTION:** Final rule.

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**SUMMARY:** We are superseding an existing airworthiness directive (AD) for the products listed above. This AD results from mandatory continuing airworthiness information (MCAI) originated by an aviation authority of another country to identify and correct an unsafe condition on an aviation product. The MCAI describes the unsafe condition as:

\* \* \* \* \*

The Bombardier CL-600-2B19 airplanes have had a history of flap failures at various positions for several years. Flap failure may result in a significant increase in required landing distances and higher fuel consumption than planned during a diversion. \* \* \*

\* \* \* \* \*

We are issuing this AD to require actions to correct the unsafe condition on these products.

**DATES:** This AD becomes effective April 15, 2009.

The Director of the Federal Register approved the incorporation by reference of certain publications listed in this AD as of April 15, 2009.

The Director of the Federal Register approved the incorporation by reference of certain other publications listed in this AD as of September 5, 2007 (72 FR 46555, August 21, 2007).

**ADDRESSES:** You may examine the AD docket on the Internet at <http://www.regulations.gov> or in person at the U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue, SE., Washington, DC.

**FOR FURTHER INFORMATION CONTACT:** Dan Parrillo, Aerospace Engineer, Systems and Flight Test Branch, ANE-171, FAA, New York Aircraft Certification Office, 1600 Stewart Avenue, Suite 410, Westbury, New York 11590; telephone (516) 228-7305; fax (516) 794-5531.

## **SUPPLEMENTARY INFORMATION:**

### **Discussion**

We issued a notice of proposed rulemaking (NPRM) to amend 14 CFR part 39 to include an AD that would apply to the specified products. That NPRM was published in the Federal Register on December 18, 2008 (73 FR 76974) and proposed to supersede AD 2008-01-04, Amendment 39-15329 (73 FR 1964, January 11, 2008). That NPRM proposed to correct an unsafe condition for the specified products.

That NPRM proposed to retain the requirements of AD 2008-01-04, i.e., revising the airplane flight manual (AFM) to incorporate a temporary revision (TR) into the AFM, adding operational procedures into the AFM, training flight crewmembers and operational control/dispatch personnel on the operational procedures, and doing corrective maintenance actions. The corrective maintenance actions include a pressure test of the flexible drive-shaft and corrective actions, and a low temperature torque test of the flap actuators and corrective actions.

That NPRM also proposed to add repetitive low temperature torque tests of the flap actuators and corrective actions. In addition, that NPRM proposed to require revising the AFM to incorporate a new TR (adding maximum flaps operating speed data and clarifying maximum flaps extended speeds), and to modify the Operational Limitations. That NPRM also proposed to require revising the annual simulator training for "Flap Zero Landing" events and revising the previously required training for flight crewmembers and operational control/dispatch personnel on the operational procedures.

Further, the NPRM proposed to require certain maintenance actions following a flap fail event and installation of a cockpit placard that specifies new flap operating limitations. That NPRM also proposed to allow installing modified flap actuators, which would terminate certain sections of the operational procedures.

### **Comments**

We gave the public the opportunity to participate in developing this AD. We considered the comments received.

### **Request To Revise Wording in Paragraph (h)(6) of the NPRM**

Mesa Group requests that we revise the wording in paragraph (h)(6) of the NPRM. The commenter points out that paragraph (h)(6) of the NPRM specifies to do maintenance actions "except if maintenance actions cannot be done and normal flap system operation can be restored after an on-ground circuit breaker reset operation, then continued revenue operation is permitted without further maintenance action for up to 10 flight cycles \* \* \*." The commenter states the descriptions of the actions in paragraphs (h)(6)(i) and (h)(6)(ii) of the NPRM—i.e., to "do the maintenance actions specified in paragraph (h)(6) of the AD"—create a "loop" and jeopardize safety of flight because operators can continue flight indefinitely as long as the airplane lands where maintenance actions cannot be done.

We disagree with the commenter's assertion that the actions proposed in paragraphs (h)(6)(i) and (h)(6)(ii) of the NPRM create a loop. Paragraph (h)(6) of this AD provides an exception to doing the maintenance actions before further flight on airplanes on which a flap fail message occurs. The exception allows flight without further maintenance action for up to 10 flight cycles subject to certain operating limitations and after an on-ground circuit breaker reset operation, except as provided by the actions described in paragraphs (h)(6)(i) and (h)(6)(ii) of this AD.

Paragraph (h)(6)(i) of this AD limits the allowable flight cycles by specifying that the maintenance actions specified in paragraph (h)(6) of this AD must be done within 10 flight cycles following the initial on-ground circuit breaker reset operation. Paragraph (h)(6)(ii) of this AD also limits the allowable flight cycles by specifying that if another flap fail event occurs any time after the initial circuit breaker reset operation, then the maintenance actions specified in paragraph (h)(6) of this AD must be done before further flight.

Once operators have done the on-ground circuit breaker reset operation, the maintenance actions must be done within the compliance time specified in paragraph (h)(6)(i) or (h)(6)(ii) of this AD, depending on whether another flap fail event occurs. Paragraphs (h)(6)(i) and (h)(6)(ii) of this AD do not allow any exceptions to the specified compliance times. However, for clarity, we have revised paragraphs (h)(6)(i) and (h)(6)(ii) to refer to the service information instead of paragraph (h)(6) of this AD.

### **Request To Revise or Supersede AD 2006-12-21**

Comair requests that we revise or supersede AD 2006-12-21, amendment 39-14647 (71 FR 34793, June 16, 2006), to add a statement indicating that the installation of the actuators called out in paragraph (h)(5) of the NPRM is acceptable for compliance with paragraph (h) of AD 2006-12-21. The commenter notes that in paragraph (i) of the NPRM we include such a statement, but there will still be no cross reference within AD 2006-12-21 itself.

We do not agree that it is necessary to revise or supersede AD 2006-12-21. The intent of paragraph (i) of this AD is simply to specify that installing certain flap actuators provides a method of compliance with paragraph (h) of AD 2006-12-21. In addition, a global alternative method of compliance (AMOC) to AD 2006-12-21 was granted to Bombardier on November 18, 2008, which allowed installation of actuator part numbers (P/Ns) 601R93103-23/24 (Vendor P/N 853D100-23/24) in lieu of P/Ns 601R93103-19/20 (Vendor P/Ns 853D100-19/20) as a way to comply with paragraph (h) of AD 2006-12-21. The AMOC also allows installation of actuator P/Ns 601R93104-23/24 (Vendor P/N 854D100-23/24) in lieu of P/Ns 601R93104-19/20 (Vendor P/N 854D100-19/20) as a way to comply with paragraph (h) of AD 2006-12-21. We have not changed this AD in this regard.

### **Request To Revise AFM Reference**

Comair and Air Wisconsin request that we revise an AFM reference in the quoted material of paragraph (h)(2) of the NPRM from "AFM TR/165" to "AFM TR RJ/165-1." Both commenters request that we revise the AFM reference in Note 1 following "paragraph 1." of the quoted material. Comair also requests that we revise the AFM reference in the Note following "paragraph 2." of the quoted material.

We agree to revise the AFM reference because AFM TR RJ/165-1 is the latest AFM TR. We have revised the notes within the quoted material in paragraph (h)(2) of this AD accordingly.

### **Request To Remove Training Requirement**

Two commenters, Comair and Air Wisconsin, request that we remove training requirements from the NPRM. Comair states that paragraphs (f)(3), (g)(1), and (h)(3) of the NPRM contain training requirements and that an AD is not the proper mechanism to mandate training. Comair states that 14 CFR 39.3 defines airworthiness directives as " \* \* \* legally enforceable rules that apply to the following products: aircraft, aircraft engines, propellers, and appliances." Comair further states that these paragraphs requiring training are issued against people and not against a product. Air Wisconsin also states that paragraphs (g)(1), (h)(3)(i), and (h)(3)(ii) of the NPRM do not belong in the AD because those paragraphs apply to flight crewmembers and operational control/dispatch personnel.

We disagree with the request to remove training requirements. Section 39.11 of the Federal Aviation Regulations (14 CFR 39.11) describes the types of actions that ADs can require, including

"conditions and limitations you must comply with." While we agree that section 39.3 of the Federal Aviation Regulations (14 CFR 39.3) applies to the products listed in 14 CFR 39.11, we retain broad authority to require any corrective action that is determined to be most effective in addressing an identified unsafe condition on any of the products listed in 14 CFR 39.3.

In this AD, we have found that one of the factors contributing to the identified unsafe condition is lack of flightcrew training in operating an airplane when a flap failure occurs in flight (such as in freezing conditions). Due to the unsafe condition, we determined that these training requirements, in conjunction with the other requirements of this AD, are necessary for safe operation of the airplane. We have not revised this AD in this regard.

### **Request To Clarify Requirements in Paragraphs (g)(3)(i) and (g)(3)(ii) of the NPRM**

Comair requests that we clarify the requirements specified in paragraphs (g)(3)(i) and (g)(3)(ii) of the NPRM. Comair states that in recent years it seems to have become common practice when an AD is superseded by another AD that the old requirements are restated as they appeared in the superseded AD. Paragraphs (g)(3)(i) and (g)(3)(ii) of AD 2008-01-04 refer to "2,000 flight hours." Paragraphs (g)(3)(i) and (g)(3)(ii) of this NPRM now list "5,000 flight cycles." Comair states that if there is a new requirement, for consistency, it should fall under paragraph (h) of the NPRM.

Comair is correct in observing that we generally restate the requirements of the existing AD in the new AD. We restate the requirements as a necessity when the requirements of the existing AD continue in the new AD or when certain requirements of the new AD are tied to accomplishment of an action or actions in the existing AD, and as a courtesy to operators for their reference. When there are compliance changes to the actions in the existing AD, we may keep the actions in the restatement section; thus, we restated paragraph (g)(3) of this AD with a change to the accumulated time on the actuators.

In this case, we have extended the accumulated time on the actuators that are affected by paragraph (g)(3) of this AD. We explained this in the Discussion section of the NPRM as follows:

This proposed AD also re-identifies the airplanes affected by paragraph (g)(3) of the existing AD. The accumulated time on the actuators specified in paragraphs (g)(3)(i) and (g)(3)(ii) of this AD has been extended from "2,000 flight hours" to "5,000 flight cycles."

The re-identification does not affect airplanes that have already complied with the actions specified in paragraph (g)(3) of this AD and is relieving for airplanes that have not yet complied with the actions specified in paragraph (g)(3) of this AD. No change has been made to paragraph (g)(3) of this AD.

### **Request To Clarify Requirements of Paragraphs (g)(3) and (h)(4) of the NPRM**

Air Wisconsin requests that we clarify the requirements of paragraphs (g)(3) and (h)(4) of the NPRM. Air Wisconsin states that paragraphs (g)(3)(i) and (g)(3)(ii) of the NPRM and paragraphs (h)(4)(i) and (h)(4)(ii) of the NPRM are confusing because they seem to duplicate each other. Air Wisconsin suggests that paragraphs (h)(4)(i) and (h)(4)(ii) be removed and that we refer to paragraphs (g)(3)(i) and (g)(3)(ii) instead in paragraph (h)(4) of the NPRM.

Air Wisconsin further requests that we clarify whether paragraphs (g)(3) and (h)(4) of the NPRM apply to actuators that had the pinion shaft seals replaced since February 15, 2008, and have fewer than 5,000 flight cycles since replacement. In addition, Air Wisconsin also requests that we clarify whether paragraphs (g)(3) and (h)(4) of the NPRM do not apply to actuators that are overhauled or that had the pinion shaft seals replaced.

We agree that the requirements of paragraphs (g)(3) and (h)(4) should be clarified. Paragraph (g)(3) of this AD applies to airplanes that have actuators (identified in paragraph (g)(3) of this AD) that meet the conditions of either paragraph (g)(3)(i) or (g)(3)(ii) of this AD. Once an actuator accumulates more than 5,000 flight cycles since new, or a repaired actuator accumulates more than

5,000 flight cycles on the pinion shaft seals, operators must do the low-temperature torque test specified in paragraph (g)(3) of this AD. If an actuator has 5,000 or fewer flight cycles since new, or if an actuator that has been repaired has 5,000 or fewer flight cycles since pinion shaft seal replacement, then paragraph (g)(3) of this AD does not apply to that actuator. Therefore, paragraph (g)(3) of this AD also does not apply to overhauled actuators with 5,000 or fewer flight cycles since the pinion shaft seals have been replaced.

The intent of paragraph (h)(4) of this AD is to require repetitive low temperature torque tests to be done for actuators having more than 5,000 flight cycles, and on repaired actuators having more than 5,000 flight cycles on the pinion shaft seals.

If the actuators are replaced with new actuators having 5,000 flight cycles or fewer, or with repaired actuators having 5,000 flight cycles or fewer on the pinion shaft seals, then the repetitive torque tests are terminated.

However, the replaced actuators will be affected by the requirements of paragraph (g)(3) of this AD once the new actuator accumulates more than 5,000 flight cycles since new, or the repaired actuator accumulates more than 5,000 flight cycles on the pinion shaft seals; once these actuators are required to have the low temperature torque test specified in paragraph (g)(3) of this AD, these actuators will be affected by the requirements of paragraph (h)(4) of this AD if they pass the torque test (i.e., the actuators that do not need to be replaced). We have revised paragraph (h)(4) of this AD to clarify these requirements and removed paragraphs (h)(4)(i) and (h)(4)(ii) of this AD.

### **Request To Revise Language in the Quoted Material in Paragraph (h)(2) of the NPRM**

Several commenters request that we revise specific language in the section titled "4. Dispatch Following a Flap Failed Event" of the quoted material in paragraph (h)(2) of the NPRM:

- Comair requests that we clarify the listing for conditions a., b., c., and d. specified in paragraph 4. of the quoted material.

We agree to clarify the listing for conditions a., b., c., and d. specified in paragraph 4. of the quoted material. We have determined that the current wording is not clear in specifying that conditions "a. and b., and either c. or d.," must be met. Therefore, we have revised the wording in the section titled "4. Dispatch Following a Flap Failed Event" of the quoted material in paragraph (h)(2) of this AD as follows:

"If normal flap system operation can be restored after an on-ground system reset, continued revenue operation of that airplane is permitted, provided conditions a. and b., and either c. or d., below are satisfied: \* \* \*."

- Air Wisconsin and Pinnacle Airlines request that we clarify that the maintenance technician/personnel or flight crewmember can accomplish the operational check specified in paragraph 4.b. of the quoted material.

We agree with the request to clarify paragraph 4.b. of the quoted material. The flightcrew has the responsibility for verifying the operability of the systems called out in paragraph 4.b. of the quoted material. We have revised paragraph 4.b. of the quoted material in paragraph (h)(2) of this AD to read:

"Prior to each flight following an on-ground circuit breaker reset, the thrust reversers, ground spoilers, and brake system are verified operational by the flightcrew."

- Comair requests that we clarify that there is no requirement to document the results of the flightcrew system tests, and suggests adding the following statement to paragraph 4. of the quoted material: "Note: No maintenance log entry is required for the following action."

We disagree with the commenter's request. There must be operator-controlled documentation that accounts for the 10-flight-cycle limitation following the initial reset of a circuit breaker. The

method of documentation is up to the discretion of the operator and the principal operations inspector (POI). We have not revised this AD in this regard.

- Comair also requests that we add the following statement to paragraph 4. of the quoted material: "Until a maintenance action can be performed as specified by (h)(3)(6), for each flight following an on-ground circuit breaker reset, either condition a. or b. [landing distance available], below, must be satisfied: \* \* \*."

We disagree with the request to add the statement. We find that the language suggested by the commenter provides no substantive change from the meaning of the paragraph as it is written in the NPRM, and that no clarity would be added with such a change. We have not revised this AD in this regard.

- Air Wisconsin and PSA Airlines request that the action specified in paragraph 4.b. of the quoted material in paragraph (h)(2) of the NPRM be revised to clarify what needs to be accomplished and what is expected. Air Wisconsin states that the type of check should be specified. PSA Airlines suggests that the word "verify" be removed. Comair also requests that we clarify paragraph 4.b. by specifying "For each flight following an on-ground circuit breaker reset, prior to take-off, the following checks [thrust reversers, ground spoilers, and brake system] must be performed: \* \* \*." In addition, Comair requests that additional information on the operational checks be provided.

We clarify that paragraph 4.b. of the quoted material in paragraph (h)(2) of this AD is intended to apply to all operators. Individual operators have the option of using more restrictive language. We find no need to revise this AD in this regard.

- Pinnacle Airlines requests that we clarify who must perform the on-ground circuit breaker reset. Pinnacle Airlines infers that the flightcrew does the reset.

We clarify that the following wording in paragraph (h)(6) of this AD makes it apparent the flightcrew performs the reset: "\* \* \* the circuit breaker reset operation can be performed by the flightcrew when authorized by the operator's maintenance control organization." We have not revised this AD in this regard.

- Pinnacle Airlines states that we should clarify that the flightcrew or maintenance personnel can perform the operation of the flaps for 5 cycles specified in paragraph 4.a. of the quoted material in paragraph (h)(2) of this AD. Pinnacle states that allowing only flightcrews to perform this function, under certain circumstances (such as crew duty time issues), could have substantial negative logistic impacts, which could have a negative impact on passenger service.

We disagree with the commenter. The operation of the flaps for 5 cycles, as specified in paragraph 4.a. of the quoted material in paragraph (h)(2) of this AD, is intended to be a flightcrew function. Doing this operation is predicated on the condition specified in (h)(6) of this AD when maintenance resources are not available. If maintenance personnel are available, operators should be performing the maintenance procedures in accordance with the fault isolation manual, as specified in paragraph (h)(6) of this AD. We have not revised this AD in this regard.

- Pinnacle Airlines requests that we clearly specify when the operational checks in paragraph 4.b. of the quoted material terminate.

We disagree with the request to add a statement for terminating action for paragraph 4.b. of the quoted material. We have determined that to mitigate the risk of multiple flap fail events, and until further rulemaking is considered, the requirements of paragraph 4.b. must be followed as stipulated in paragraph (h)(6) of this AD. We have not revised this AD in this regard.

- Air Wisconsin requests that we add language stating that "an aircraft can be returned to revenue service after a flap system reset is accomplished after a Flap Fail event provided that (then list the conditions)."

We disagree with the request to add language to paragraph 4. of the quoted material in paragraph (h)(2) of this AD to specify when an aircraft can be returned to service. The requirements of paragraph (h)(2) of this AD are limitations. However, in paragraph (h)(6) of this AD, we do specify the criteria for returning the airplane to service following a flap fail event. We have not revised this AD in this regard.

- Regarding paragraph 4.a. of the quoted material in paragraph (h)(2) of the NPRM, Comair requests that, for the flightcrew system tests, we clarify that the cycling of the flaps through 5 cycles applies only to the first flight following the flap reset by specifying, "For the first flight following an on-ground circuit breaker reset, prior to dispatch, the flaps must be operated for five full extension/retraction cycles with no subsequent failures."

We clarify that the intent is to perform the action of paragraph 4.a. once prior to dispatch following a flap fail event. We have revised that paragraph to read: "Prior to the initial dispatch following an on-ground circuit breaker reset, the flaps must be operated for five full extension/retractions cycles by the flightcrew with no subsequent failures."

- Comair requests that, for flightcrew system tests, we clarify that the term "take-off," instead of "dispatch," should be used for the following tests to allow the crew to perform them during taxi-out: thrust reverse, ground spoiler, and brake system. Air Wisconsin requests that we replace the word "dispatch" with the word "flight" in paragraphs 4.a. and 4.b. of the quoted material in paragraph (h)(2) of the NPRM.

We disagree with revising the word "dispatch" in paragraph 4.a. of the quoted material in paragraph (h)(2) of the NPRM. We intend that these operations are to be performed as part of a pre-taxi checklist. We do not want these operations to be performed during taxi where, if discrepancies are noted, corrective actions would impact airport congestion and ground control services if the airplane has to return to the gate. However, as stated previously, we have revised paragraph 4.b. of the quoted material in paragraph (h)(2) of this AD to specify "each flight" instead of "dispatch."

#### **Request To Clarify Paragraph (h)(4) of the NPRM**

Comair requests that we clarify the intent of paragraph (h)(4) of the NPRM. Comair states that many of its actuators are in the category covered by paragraphs (g)(3)(i) and (g)(3)(ii) of the NPRM, for which no additional action for paragraph (g)(3) of the NPRM is required. Comair questions whether the intent of the new maintenance action in paragraph (h)(4) of the NPRM is to require a low-temperature torque test even for those actuators for which no action was required under paragraph (g)(3) of the NPRM.

We provide the following clarification. Paragraph (h)(4) of this AD does not apply to actuators on which no action was required by paragraph (g)(3) of this AD. The wording in paragraph (h)(4) of this AD, "New Maintenance Action," is explicit in that it applies to "\* \* \* airplanes for which the low temperature torque test of flap actuators is required by paragraph (g)(3) of this AD \* \* \*" Paragraph (g)(3) of this AD applies only to actuators identified in paragraph (g)(3) and that meet the specifications in paragraph (g)(3)(i) or (g)(3)(ii) of this AD. Therefore, there is no requirement to perform a repetitive low-temperature torque test for actuators for which no action was required under paragraph (g)(3) of this AD. We have not revised this AD in this regard.

#### **Request To Add Phase-in Period to Paragraph (h)(4) of the NPRM**

Comair and Air Wisconsin request that we add a phase-in period to paragraph (h)(4) of the NPRM. Comair notes that a number of actuators are compliant with Bombardier Service Bulletin 601R-27-150, dated July 12, 2007, from as early as February 15, 2008. Comair states that it is unlikely this NPRM will supersede AD 2008-01-04 before February 15, 2009, and therefore some actuators will already have exceeded 12 months since last compliance. Comair concludes that since under AD 2008-01-04, paragraph (g)(3) was only a one-time compliance, and paragraph (h)(4) of the NPRM will now make that repetitive, a phase-in is necessary for actuators having early compliance.

We agree with the commenter's request to add a grace period to the compliance time of "within 12 months after doing the low temperature torque test" specified in paragraph (h)(4) of this AD. To avoid undue burden on the operators, adding a grace period is both desirable and prudent. We have determined that adding a 60-day grace period will not adversely affect safety. We have revised paragraph (h)(4) of this AD accordingly.

## **Request To Revise Reference**

Comair, PSA Airlines, and Pinnacle Airlines request that we revise the reference to the fault isolation manual specified in paragraph (h)(6) of the NPRM. The commenters state that because the NPRM specifies Revision 38, dated January 10, 2008, of Section 27-50-00 of Chapter 27 of the Bombardier Canadair Regional Jet CRJ 100/200/440 Fault Isolation Manual CSP A-009, Volume 1 (the "FIM"), operators will not be in compliance when using later revisions of the FIM. Comair states that operators have no control over Bombardier revisions. PSA and Pinnacle state that an alternative method of compliance would be needed to use later Bombardier revisions. PSA recommends we remove the reference to Revision 38 of the FIM. Pinnacle recommends that we add "or later revisions" to the FIM reference.

We cannot agree to revise the reference to the FIM specified in paragraph (h)(6) of this AD. We must specify a revision and a date to meet Office of Federal Register (OFR) regulations for publications incorporated by reference. We also cannot refer to "later revisions" of applicable service information according to OFR regulations. We have not revised this AD in this regard.

## **Request To Revise Certain "Part" References**

Comair, Pinnacle Airlines, and Mesa Airlines request that we revise certain "Part" references in the NPRM. (The "Part" references correspond to language in the mandatory continuing airworthiness information.) Comair states that both paragraphs (h)(6) and (h)(7) of the NPRM are listed as "Part V." Mesa states that paragraphs (h)(4) and (h)(5) are labeled as "Part IV." Pinnacle notes that paragraphs (h)(5), (h)(6), and (h)(7) of the NPRM should refer to Parts V, VI, and VII, respectively.

Based on the commenters' remarks, we have reconsidered including "Part" references in this AD. In the NPRM, we intentionally included these references to correspond to the Canadian airworthiness directive. However, we find that referring to a "Part" of a Canadian airworthiness directive in the U.S. AD does not add clarity, is unnecessary, and may result in confusion for the reader. Therefore, we have removed these references from this AD.

## **Request To Limit Reporting Requirement**

Comair and Air Wisconsin request that we limit the reporting requirement specified in paragraph (h)(7) of the NPRM. Comair states that a 2-year limit should provide enough data. Air Wisconsin also states that reporting should be limited to 2 years or dropped from the requirements. Pinnacle also notes that the reporting requirement is onerous and will require substantial logistics on the operator's part.

We agree to revise the reporting requirement in paragraph (h)(7) of this AD. The reporting requirement is necessary and must be mandated to monitor the effectiveness of the AD actions and to assist the manufacturer and the regulatory authorities in determining if additional rulemaking action is necessary. However, we agree the reporting can be limited. We have revised paragraph (h)(7) of this AD to specify that reporting is required for only 24 months.

## **Request for Clarification on Inoperable Items**

PSA Airlines requests that we clarify whether it is OK to operate with items that are inoperable per the minimum equipment list (MEL).

The AD takes precedence over other service information. Operating an airplane that does not comply with the AD violates part 39 of the Federal Aviation Regulations (14 CFR 39). According to sections 121.628(b)(2) and 91.213(b)(2) of the Federal Aviation Regulations (14 CFR 121.628(b)(2) and 91.213(b)(2)), instruments and equipment required by an AD to be in operable condition may not be included in the MEL unless the AD provides otherwise.

## **Request To Clarify Compliance With the FIM**

PSA Airlines requests that we clarify how to comply with the FIM requirements in paragraph (h)(6) of the NPRM. The commenter states that since the FIM is a multiple-part document covering flight operations, dispatch, and maintenance, it is difficult to provide documentation for compliance with each part. The commenter also states that if part of this AD will require sign-offs for each event, compliance documentation could be very confusing after a number of sign-offs. The commenter recommends inserting language that would eliminate the need for repetitive sign-offs, such as stating that the FIM maintenance requirements of paragraph (h)(6) must be tracked and completed in a manner acceptable to the principal maintenance inspector (PMI).

We agree that adding the statement PSA Airlines requests would be effective. Therefore, we have revised paragraph (h)(6) of this AD to add the following statement: "These maintenance requirements must be tracked in a manner acceptable to the principal maintenance inspector (PMI)."

## **Request To Clarify Paragraph (h)(6)(ii) of the NPRM**

Several commenters request that we clarify paragraph (h)(6)(ii) of the NPRM.

Air Wisconsin requests that we clarify whether paragraph (h)(6)(ii) of the NPRM, which states "If another flap fail event occurs any time after the initial circuit breaker reset operation \* \* \*" is meant to be within the process of exercising the components/systems specified in paragraph 4. "Dispatch Following a Flap Failed Event" of the quoted material in paragraph (h)(2) of this AD.

PSA Airlines requests that we clarify paragraph (h)(6)(ii) of the NPRM by adding, "another event within the 10 cycle limit" or "another event prior to completion of the FIM procedure from the previous event." PSA states that the current wording could be interpreted to mean either another event within the 10-cycle limit, or anytime after an initial flap rest, regardless of whether the FIM procedure has been complied with.

Pinnacle Airlines requests that we add language to paragraph (h)(6)(ii) of the NPRM that specifies when the requirement to perform the maintenance actions of paragraph (h)(6) of the NPRM is no longer relevant. The commenter indicates that the statement requires that the action be continued in perpetuity.

We agree to clarify paragraph (h)(6)(ii) of this AD. Paragraph (h)(6)(ii) of this AD is intended to apply to any flap fail event, whether in flight or during any of the checks required in paragraph 4.a. of the quoted material in paragraph (h)(2) of this AD. However, we do not intend that paragraph (h)(6)(ii) of this AD apply to any event regardless of whether the FIM procedure has been complied with. The paragraph (h)(6)(ii) requirement to perform the maintenance actions is required only if another flap fail event occurs during the 10-flight-cycle period following the initial circuit breaker rest authorized in paragraph (h)(6) of this AD. We have revised paragraph (h)(6)(ii) of this AD to clarify that if another flap fail event occurs anytime "within the 10-flight-cycle limit" after the initial circuit breaker reset operation, the maintenance actions are required to be done before further flight.

## **Request To Clarify Special Flight Permits**

PSA Airlines requests that a statement be added to indicate that aircraft having a second flap event or an aircraft on which the flaps cannot be reset may be ferried to a location where the FIM procedure specified in paragraph (h)(6) of this AD can be accomplished.

We do not agree that it is necessary to add a statement to this AD. This AD does not prohibit ferry flights. Special flight permits, as described in Section 21.197 and Section 21.199 of the Federal Aviation Regulations (14 CFR 21.197 and 21.199), may be requested to operate the airplane to a location where the requirements of this AD can be accomplished. We have not revised this AD in this regard.

## **Request To Substantiate Repetitive Low Temperature Torque Test**

Mesa Airlines requests data for substantiating the repeat of the low temperature torque test every 12 months following the initial test.

The necessity for repeat tests and the compliance time interval were determined by the State of Design authority (Transport Canada Civil Aviation (TCCA)) based on risk analysis and consultation with the airplane manufacturer. We have considered TCCA's determination, as well as the safety implications and the time necessary to do the inspections, and have determined that requiring the repetitive low temperature torque tests at 12-month intervals is appropriate. However, under the provisions of paragraph (j) of the AD, we will consider requests for adjustments to the compliance time if data are submitted to substantiate that such an adjustment would provide an acceptable level of safety. We have not revised this AD in this regard.

## **Request To Consider an Option to the Existing Actuator System**

Cox and Company requests that its "Flap Actuator Heating System" be considered as an "add on" option to the existing actuator system. The commenter states that its test data indicate that its "Flap Actuator Heating System" will eliminate nearly all soft jams that occur on Bombardier Model CL-600-2B19 airplanes during cold weather.

We do not concur. We cannot include such an option in an AD when that option is not yet certificated. When the design has received an FAA Supplemental Type Certificate (STC), it is the operator's discretion to consider installation. However, under the provisions of paragraph (j) of this AD, we will consider requests from operators for approval of an AMOC if sufficient data are submitted to substantiate that the installation would provide an acceptable level of safety. We have not revised this AD in this regard.

## **Request To Add Calendar Limitation**

Pinnacle Airlines requests that we add a calendar limitation to paragraph 4. of the quoted material in paragraph (h)(2) of the NPRM that is similar to the limitation specified in paragraph 3. of the same quote. Pinnacle is concerned that not having a calendar limitation would result in significant operational impacts throughout the calendar year.

We disagree with the request to add a calendar limitation to paragraph 4. of the quoted material in paragraph (h)(2) of this AD. Paragraph 3. of the quoted material in paragraph (h)(2) of this AD is specifically focused on mitigating a cold weather flap fail event. However, while paragraph 4. applies to cold weather events, it is not limited to that scenario. Therefore, regardless of weather conditions, paragraph 4. of the quoted material in paragraph (h)(2) of this AD is necessary to address the identified unsafe condition. We have not revised this AD in this regard.

## **Request To Clarify Compliance**

Pinnacle Airlines asks whether non-compliance with the AD would happen if the flightcrew does the operational check specified in paragraph 4.a. of the quoted material in paragraph (h)(2) of the NPRM and neglects to record compliance with the check. Pinnacle Airlines also asks whether for paragraph 4.b. in the quoted material in the same paragraph non-compliance with the AD would happen if the flightcrew neglects to record compliance with the requirement for the operational check of the thrust reversers, ground spoilers, and brake system.

Compliance with paragraphs 4.a. and 4.b. of the quoted material in paragraph (h)(2) of this AD is predicated on paragraph (h)(6) of this AD, which invokes the limitation specified in paragraph (h)(2) of this AD if the maintenance actions cannot be performed. The exception to doing the maintenance actions was intended for relief only when an airplane was at a location where maintenance personnel and/or equipment were not available. Maintenance control authorization is required for the flightcrew

to perform this operation. The method of documentation is at the discretion of the operator and the principal operations inspector (POI). We have not revised this AD in this regard.

### **Request To Clarify the Phrase "Maintenance Actions Cannot Be Done"**

Pinnacle Airlines and Air Wisconsin request that we clarify the phrase "maintenance actions cannot be done" in paragraph (h)(6) of the NPRM. Pinnacle Airlines requests that we provide specific language and conditions concerning this statement and questions if maintaining flight schedule integrity is an adequate reason to establish that "maintenance actions cannot be done."

We agree that the statement can be clarified. The intent of this AD is to prevent an unsafe condition. The only reason for deferring maintenance is a lack of available maintenance resources. We have revised paragraph (h)(6) of this AD by replacing "if maintenance actions cannot be done" with "if maintenance resources are not available."

### **Request To Add Requirement to Paragraph (h)(2) of the NPRM**

Pinnacle Airlines requests that we include in paragraph 4. of the quoted material in paragraph (h)(2) of the NPRM the following statement: "Circuit breaker reset operation can be performed by the flight crew when authorized by the operator's maintenance control organization." Pinnacle Airlines notes that this statement is also in paragraph (h)(6) of the NPRM.

We disagree with the request to add the statement suggested by the commenter. The reset function stipulated in paragraph 4. of the quoted material in paragraph (h)(2) of this AD is intended to be done by the flightcrew. Compliance with this paragraph is predicated on paragraph (h)(6) of this AD, which invokes the limitation specified in paragraph (h)(2) of this AD only if maintenance actions in accordance with the FIM cannot be performed. We have not revised this AD in this regard.

### **Request To Clarify Compliance With Paragraph (h)(7) of the NPRM**

Pinnacle Airlines requests that we clarify compliance with paragraph (h)(7) of the NPRM. Pinnacle questions whether it would constitute non-compliance with the AD if the operator does not obtain all of the flaps electronic control unit (FECU) codes and report them to Bombardier within 30 days. Pinnacle also would like to know how the operator brings an airplane back into regulatory compliance if the FAA considers the aforementioned scenario to be non-compliance with the AD.

Non-compliance with the reporting requirement in paragraph (h)(7) of this AD is non-compliance with the AD. The operator brings the aircraft back into compliance by meeting the reporting requirements. Under the provisions of paragraph (j) of this AD, we will consider requests from affected persons for approval of an AMOC. We have not revised this AD in this regard.

### **Request To Clarify the Phrase "or 30 Days After the Effective Date of This AD"**

Air Wisconsin requests that we clarify what is meant in paragraph (h)(7) of the NPRM by the phrase, "or 30 days after the effective date \* \* \*."

The intent of the phrase "30 days after the effective date" in paragraph (h)(7) of the NPRM is to allow additional time for operators to report if fault data were found before the effective date of this AD. However, we have revised paragraph (h)(7) of this AD to limit the need to report to "as of the effective date of this AD" and, therefore, we have removed the phrase "30 days after the effective date" from paragraph (h)(7) of this AD.

### **Request To Revise Reference**

Pinnacle Airlines requests that paragraph (h)(7) of the NPRM be amended to indicate "Task 05-50-980-801 as introduced in the Canadair Regional Jet TR 05-035, dated July 13, 2007, to the

Canadair Regional Jet Aircraft Maintenance Manual (AMM), or latest revision." Pinnacle Airlines states that when Bombardier incorporates TR 05-035 into the AMM, operators will have to obtain an AMOC to comply with the AD.

We cannot agree with the commenter's request to add a reference to the latest revision of the service bulletin. We cannot refer to later revisions of applicable service information according to OFR regulations for publications incorporated by reference. We agree that affected persons will have to obtain an AMOC to comply with the AD if they plan to use later revisions. We have not revised this AD in this regard.

### **Request To Clarify Intent of Paragraph 3.a.(i) in the Quoted Material of Paragraph (h)(2) of the NPRM**

Air Wisconsin requests that we verify that the intent of paragraph 3.a.(i) of the quoted material in paragraph (h)(2) of the NPRM was to include a reference to overhaul.

The text in paragraph 3.a.(i) of the quoted material in paragraph (h)(2) of this AD is correct. We intended to include a reference to overhaul. We have not revised this AD in this regard.

### **Request To Clarify Compliance With Paragraph (g)(3) of the NPRM**

Air Wisconsin asks whether paragraph (h)(4) of the NPRM supersedes paragraph (g)(3) of the NPRM.

Paragraph (h)(4) of this AD does not "supersede" paragraph (g)(3) of this AD. Paragraph (h)(4) of this AD refers to paragraph (g)(3) of this AD as a means of identification of those actuators to which the requirements of paragraph (h)(4) apply. In other words, for those actuators that have had the initial test required by paragraph (g)(3) of this AD, operators must repeat the test in accordance with the requirements of paragraph (h)(4) of this AD every 12 months. We have not revised this AD in this regard.

### **Request To Revise FIM Reference To Refer to Part Numbers**

Air Wisconsin requests that we revise paragraph (h)(6) of the NPRM to say "\* \* \* IAW section 27-50-00 of the FIM, CSP A-009 as introduced in revision 38 dated January 10, 2008 as it applies to the affected part numbers identified in par (g)(3)(i) and (ii)."

We do not agree to revise paragraph (h)(6) of this AD. The conditions of paragraphs (g)(3)(i) and (g)(3)(ii) of this AD apply to the low temperature torque testing requirements of paragraph (g)(3) of this AD. Those conditions have no correlation to the FIM procedures that are to be followed after a flap fail event. We have not revised this AD in this regard.

### **Request To Clarify Actions**

Air Wisconsin requests that we clarify what to do if the maintenance actions specified in paragraph (h)(6)(i) of the NPRM cannot be done.

If an operator cannot comply with an AD, the operator must contact the FAA for repair instructions. For this AD, operators may request an AMOC, as specified in paragraph (j)(1) of this AD. We have not revised this AD in this regard.

### **Request for an Alternative Method to Paragraph (h)(8) of the NPRM**

Air Wisconsin requests that we allow the installation of a placard that is an alternative to the placard specified in paragraph (h)(8) of the NPRM. The commenter suggests that, as an alternative to using the placard identified in Bombardier Service Bulletin 601R-11-090, dated August 15, 2008, operators can use a placard that says "Do Not Extend Flaps to 8 or 20 above 200 KIAS."

We do not agree to revise paragraph (h)(8) of this AD. The intention of this paragraph is to apply to all operators. Individual operators have the option of using an alternative placard by requesting an AMOC in accordance with the procedures specified in paragraph (j) of this AD. We have not revised this AD in this regard.

### **Request To Revise Wording in Paragraphs 1.a. and 1.b. of the Quoted Material in Paragraph (f)(2) of the NPRM**

The Air Line Pilots Association (ALPA) requests that we revise the wording in paragraphs 1.a. and 1.b. of the quoted material in paragraph (f)(2) of the NPRM so that the phrase "and can be reasonably expected to remain at or above this visibility until after landing" is replaced with "and shall be forecast in the Terminal Area Forecast (TAF) to remain at or above this visibility until after landing."

We acknowledge the commenter's request. However, paragraph (f)(2) of this AD is a restatement of the existing requirements of AD 2008-01-04. We cannot change the wording, as those who have already complied with the AFM revision specified in that AD would then be out of compliance.

However, we infer the commenter intended to request that we revise the new AFM revision specified in paragraph (h)(2) of this AD. We have changed the wording in paragraph 1.a. of the quoted material in paragraph (h)(2) of this AD as follows:

"When conducting a precision approach, the reported visibility (or RVR) is confirmed to be at or above the visibility associated with the landing minima for the approach in use, and shall be forecast in the Terminal Area Forecast (TAF) to remain at or above this visibility until after landing; or"

We have changed the wording in paragraph 1.b. of the quoted material in paragraph (h)(2) of this AD as follows:

"When conducting a non-precision approach, the reported ceiling and visibility (or RVR) are confirmed to be at or above the ceiling and visibility associated with the landing minima for the approach in use, and shall be forecast in the Terminal Area Forecast (TAF) to remain at or above this visibility until after landing; or"

### **Request To Add Language Calling for a Permanent Solution**

ALPA requests that we add language to the NPRM to be similar to Canadian AD CF-2007-10R1, which calls out the need for a permanent solution. The commenter states that it appears that a flap actuator redesign proposal has been accepted by the Canadian Transportation Safety Board and is being developed by the manufacturer that will ultimately remove some of the operational and maintenance actions called out in this AD. The commenter also states that a provision for a permanent solution that will ultimately remove some of the operational and maintenance actions called out in this AD must be included in this AD.

We do not agree to add language specifying that there is a need for a permanent solution. Such a statement adds no additional risk mitigation or clarification. The new actuators referred to in paragraph (h)(5) of this AD are an optional maintenance action that would terminate the requirements of paragraph 3. of the quoted material in paragraph (h)(2) of this AD. In addition, the reporting requirement of paragraph (h)(7) of this AD is being used to monitor the effectiveness of the AD actions and will enable the manufacturer to obtain better insight into the nature, cause, and extent of the issue, and eventually to develop final action to address the unsafe condition. Once final action has been identified, we might consider further rulemaking. We have not revised this AD in this regard.

## **Request To Add Language To Address "Known Icing Enroute"**

ALPA requests that we add language to the NPRM to address "known icing enroute." ALPA states that diversion operations in icing conditions could pose a serious icing risk for aircraft operating with the flaps at some intermediate setting. ALPA concludes that the unintended consequences of an aircraft's flaps being exposed to icing conditions for extended periods of time must be addressed in the operational portion of the NPRM.

We appreciate ALPA's comment for identifying a generic issue in the AFM. While this comment is not specific to this AD, it has highlighted a deficiency in the Abnormal Procedures section of the AFM. Flap failure in an extended position while in icing conditions is a generic issue. A TR to the AFM may be issued to address this deficiency. Once this TR has been issued and approved, we might consider further rulemaking. We have not revised this AD in this regard.

### **Conclusion**

We reviewed the available data, including the comments received, and determined that air safety and the public interest require adopting the AD with the changes described previously. We determined that these changes will not increase the economic burden on any operator or increase the scope of the AD.

### **Differences Between This AD and the MCAI or Service Information**

We have reviewed the MCAI and related service information and, in general, agree with their substance. But we might have found it necessary to use different words from those in the MCAI to ensure the AD is clear for U.S. operators and is enforceable. In making these changes, we do not intend to differ substantively from the information provided in the MCAI and related service information.

We might also have required different actions in this AD from those in the MCAI in order to follow our FAA policies. Any such differences are highlighted in a NOTE within the AD.

### **Costs of Compliance**

We estimate that this AD will affect 684 products of U.S. registry. We also estimate that it will take about 18 work-hours per product to comply with the basic requirements of this AD. The average labor rate is \$80 per work-hour. Required parts will cost a negligible amount per product. Where the service information lists required parts costs that are covered under warranty, we have assumed that there will be no charge for these parts. As we do not control warranty coverage for affected parties, some parties may incur costs higher than estimated here. Based on these figures, we estimate the cost of this AD to the U.S. operators to be \$984,960, or \$1,440 per product.

### **Authority for This Rulemaking**

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, section 106, describes the authority of the FAA Administrator. "Subtitle VII: Aviation Programs," describes in more detail the scope of the Agency's authority.

We are issuing this rulemaking under the authority described in "Subtitle VII, Part A, Subpart III, Section 44701: General requirements." Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

## **Regulatory Findings**

We determined that this AD will not have federalism implications under Executive Order 13132. This AD 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.

For the reasons discussed above, I certify this AD:

1. Is not a "significant regulatory action" under Executive Order 12866;
2. Is not a "significant rule" under the 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.

We prepared a regulatory evaluation of the estimated costs to comply with this AD and placed it in the AD docket.

## **Examining the AD Docket**

You may examine the AD docket on the Internet at <http://www.regulations.gov>; or in person at the Docket Operations office between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains the NPRM, the regulatory evaluation, any comments received, and other information. The street address for the Docket Operations office (telephone (800) 647-5527) is in the ADDRESSES section. Comments will be available in the AD docket shortly after receipt.

## **List of Subjects in 14 CFR Part 39**

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

## **Adoption of the Amendment**

Accordingly, under the authority delegated to me by the Administrator, the FAA amends 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. The FAA amends § 39.13 by removing Amendment 39-15329 (73 FR 1964, January 11, 2008) and adding the following new AD:



**2009-06-12 Bombardier, Inc. (Formerly Canadair):** Amendment 39-15848. Docket No. FAA-2008-1318; Directorate Identifier 2008-NM-155-AD.

**Effective Date**

(a) This airworthiness directive (AD) becomes effective April 15, 2009.

**Affected ADs**

(b) This AD supersedes AD 2008-01-04, Amendment 39-15329.

**Applicability**

(c) This AD applies to Bombardier Model CL-600-2B19 (Regional Jet Series 100 & 440) airplanes, certificated in any category, serial numbers 7003 through 7990 and 8000 and subsequent.

**Subject**

(d) Air Transport Association (ATA) of America Code 27: Flight controls.

**Reason**

(e) The mandatory continuing airworthiness information (MCAI) states:

\* \* \* \* \*

The Bombardier CL-600-2B19 airplanes have had a history of flap failures at various positions for several years. Flap failure may result in a significant increase in required landing distances and higher fuel consumption than planned during a diversion. \* \* \*

\* \* \* \* \*

**Requirements of AD 2007-17-07, Amendment 39-15165: Actions and Compliance**

(f) Unless already done, do the following actions.

(1) Airplane Flight Manual (AFM) Change: Within 30 days after September 5, 2007 (the effective date of AD 2007-17-07), revise the Canadair Regional Jet Airplane Flight Manual CSP A-012, by incorporating the information in Canadair Regional Jet Temporary Revision (TR) RJ/165, dated July 6, 2007, into the AFM. Accomplishing the requirements of paragraph (h)(1) of this AD terminates the requirements of this paragraph and the AFM revision required by this paragraph may be removed from the AFM.

Note 1: The actions required by paragraph (f)(1) of this AD may be done by inserting a copy of Canadair Regional Jet TR RJ/165, dated July 6, 2007, into the Canadair Regional Jet Airplane Flight

Manual CSP A-012. When this TR has been included in general revisions of the AFM, the general revisions may be inserted in the AFM.

(2) Operational Procedures: Within 30 days after September 5, 2007, revise the Limitations Section of the Canadair Regional Jet Airplane Flight Manual CSP A-012, to include the following statement. This may be done by inserting a copy of paragraph (f)(2) of this AD in the AFM. Accomplishing the requirements of paragraph (h)(2) of this AD terminates the requirements of this paragraph and the AFM revision required by this paragraph may be removed from the AFM.

### **"1. Flap Extended Diversion**

Upon arrival at the destination airport, an approach shall not be commenced, nor shall the flaps be extended beyond the 0 degree position, unless one of the following conditions exists:

- a. When conducting a precision approach, the reported visibility (or RVR) is confirmed to be at or above the visibility associated with the landing minima for the approach in use, and can be reasonably expected to remain at or above this visibility until after landing; or
- b. When conducting a non-precision approach, the reported ceiling and visibility (or RVR) are confirmed to be at or above the ceiling and visibility associated with the landing minima for the approach in use, and can be reasonably expected to remain at or above this ceiling and visibility until after landing; or
- c. An emergency or abnormal situation occurs that requires landing at the nearest suitable airport; or
- d. The fuel remaining is sufficient to conduct the approach, execute a missed approach, divert to a suitable airport with the flaps extended to the landing position, conduct an approach at the airport and land with 1000 lb (454 kg) of fuel remaining.

**Note 1:** The fuel burn factor (as per AFM TR/165) shall be applied to the normal fuel consumption for calculation of the flaps extended missed approach, climb, diversion and approach fuel consumption.

**Note 2:** Terrain and weather must allow a minimum flight altitude not exceeding 15,000 feet along the diversion route.

**Note 3:** For the purpose of this AD, a "suitable airport" is an airport that has at least one usable runway, served by an instrument approach if operating under Instrument Flight Rules (IFR), and the airport is equipped as per the applicable regulations and standards for marking and lighting. The existing and forecast weather for this airport shall be at or above landing minima for the approach in use.

### **2. Flap Failure After Takeoff**

When a takeoff alternate is filed, terrain and weather must allow a minimum flight altitude not exceeding 15,000 feet along the diversion route to that alternate, or other suitable airport. The fuel at departure shall be sufficient to divert to the takeoff alternate

or other suitable airport with the flaps extended to the takeoff position, conduct and approach and land with 1000 lb (454 kg) of fuel remaining.

Note: The fuel burn factor (as per AFM TR/165) shall be applied to the normal fuel consumption for calculation of the flaps extended, climb, diversion and approach fuel consumption.

### **3. Flap Zero Landing**

Operations where all useable runways at the destination and alternate airports are forecast to be wet or contaminated (as defined in the AFM) are prohibited during the cold weather season (December to March inclusive in the northern hemisphere) unless one of the following conditions exists:

- a. The flap actuators have been verified serviceable in accordance with Part C (Low Temperature Torque Test of the Flap Actuators) of SB 601R-27-150, July 12, 2007, or
- b. The flight is conducted at a cruise altitude where the SAT is -60 deg C or warmer. If the SAT in flight is colder than -60 deg C, descent to warmer air shall be initiated within 10 minutes, or
- c. The Landing Distance Available on a useable runway at the destination airport is at least equal to the actual landing distance required for flaps zero. This distance shall be based on Bombardier performance data, and shall take into account forecast weather and anticipated runway conditions, or
- d. The Landing Distance Available on a useable runway at the filed alternate airport, or other suitable airport is at least equal to the actual landing distance for flaps zero. This distance shall be based on Bombardier performance data, and shall take into account forecast weather and anticipated runway conditions.

**Note 1:** If the forecast destination weather is less than 200 feet above DH or MDA, or less than 1 mile (1500 meters) above the authorized landing visibility (or equivalent RVR), as applied to the usable runway at the destination airport, condition 3.a., 3.b., or 3.d. above must be satisfied.

**Note 2:** When conducting No Alternate IFR (NAIFR) operations, condition 3.a., 3.b., or 3.c. above must be satisfied."

(3) Training: As of 30 days after September 5, 2007, no affected airplane may be operated unless the flight crewmembers of that airplane and the operational control/dispatch personnel for that airplane have received training that is acceptable to the principal operations inspector (POI) on the operational procedures required by paragraph (f)(2) of this AD. Accomplishing the requirements of paragraph (h)(3)(i) of this AD terminates the requirements of this paragraph.

(4) Maintenance Actions: Within 120 days after September 5, 2007, do the cleaning and lubrication of the flexible shafts, installation of metallic seals in the flexible drive-shafts, and all applicable related investigative and corrective actions by doing all the applicable actions specified in "PART A" of the Accomplishment Instructions of Bombardier Service Bulletin 601R-27-150, dated July 12, 2007; except if torque test results are not satisfactory, before further flight, install a serviceable actuator in accordance with the service bulletin or, if no serviceable actuators are

available, contact the Manager, New York Aircraft Certification Office, FAA, for corrective action. Do all applicable related investigative and corrective actions before further flight.

### **Requirements of AD 2008-01-04: Actions and Compliance With Revised Affected Airplanes for Paragraph (g)(3)**

(g) Unless already done, do the following actions.

(1) As of November 30, 2008, no affected airplane may be operated unless the flight crewmembers of that airplane have received simulator training on reduced or zero flap landing that is acceptable to the POI. Thereafter, this training must be done during the normal simulator training cycle, at intervals not to exceed 12 months. Accomplishing the requirements of paragraph (h)(3)(ii) of this AD terminates the requirements of this paragraph.

(2) Within 24 months or 4,000 flight hours after February 15, 2008 (the effective date of AD 2008-01-04), whichever occurs first: Do a pressure test of the flexible drive-shaft, and do all applicable corrective actions, by doing all the applicable actions specified in "PART B" of the Accomplishment Instructions of Bombardier Service Bulletin 601R-27-150, dated July 12, 2007. Do all applicable corrective actions before further flight.

(3) For airplanes having flap actuators, part numbers (P/Ns), 852D100-19/-21, 853D100-19/-20, and 854D100-19/-20 (Bombardier P/Ns 601R93101-19/-21, 601R93103-19/-20, and 601R93104-19/-20), specified in paragraphs (g)(3)(i) and (g)(3)(ii) of this AD: Within 24 months after February 15, 2008, do a low temperature torque test of the flap actuators, and do all applicable corrective actions, by doing all the applicable actions specified in "PART C" of the Accomplishment Instructions of Bombardier Service Bulletin 601R-27-150, dated July 12, 2007. Do all applicable corrective actions before further flight.

(i) Airplanes having actuators that have not been repaired and that have accumulated more than 5,000 flight cycles since new.

(ii) Airplanes having actuators that have been repaired and that have accumulated more than 5,000 flight cycles on the inboard pinion shaft seals, P/Ns 853SC177-1/-2.

### **New Requirements of This AD: Actions and Compliance**

(h) Unless already done, do the following actions.

(1) New AFM Change: Within 30 days after the effective date of this AD, revise the Canadair Regional Jet Airplane Flight Manual (AFM) CSP A-012, by incorporating the information in Canadair Regional Jet Temporary Revision (TR) RJ/165-1, dated August 7, 2008, into the AFM. Accomplishing this action terminates the requirements of paragraph (f)(1) of this AD and after this action has been done, the AFM revision required by paragraph (f)(1) of this AD may be removed from the AFM.

Note 2: The actions required by paragraph (h)(1) of this AD may be done by inserting a copy of Canadair Regional Jet TR RJ/165-1, dated August 7, 2008, into the Canadair Regional Jet AFM CSP A-012. When this TR has been included in general revisions of the AFM, the general revisions may be inserted in the AFM.

(2) New Operational Procedures: Within 30 days after the effective date of this AD, revise the Limitations Section of the Canadair Regional Jet AFM CSP A-012, to include the following statement. This may be done by inserting a copy of paragraph (h)(2) of this AD into the AFM. Accomplishing this action terminates the requirements of paragraph (f)(2) of this AD and after this action has been done, the AFM revision required by paragraph (f)(2) of this AD may be removed from the AFM.

## **"1. Flap Extended Diversion**

Upon arrival at the destination airport, an approach shall not be commenced, nor shall the flaps be extended beyond the 0 degree position, unless one of the following conditions exists:

- a. When conducting a precision approach, the reported visibility (or RVR) is confirmed to be at or above the visibility associated with the landing minima for the approach in use, and shall be forecast in the Terminal Area Forecast (TAF) to remain at or above this visibility until after landing; or
- b. When conducting a non-precision approach, the reported ceiling and visibility (or RVR) are confirmed to be at or above the ceiling and visibility associated with the landing minima for the approach in use, and shall be forecast in the Terminal Area Forecast (TAF) to remain at or above this visibility until after landing; or
- c. An emergency or abnormal situation occurs that requires landing at the nearest suitable airport; or
- d. The fuel remaining is sufficient to conduct the approach, execute a missed approach, divert to a suitable airport with the flaps extended to the landing position, conduct an approach at the airport and land with 1000 lb (454 kg) of fuel remaining.

**Note 1:** The fuel burn factor (as per AFM TR RJ/165-1) shall be applied to the normal fuel consumption for calculation of the flaps extended missed approach, climb, diversion and approach fuel consumption.

**Note 2:** Terrain and weather must allow a minimum flight altitude not exceeding 15,000 feet along the diversion route.

**Note 3:** For the purpose of this AD, a "suitable airport" is an airport that has at least one usable runway, served by an instrument approach if operating under Instrument Flight Rules (IFR), and the airport is equipped as per the applicable regulations and standards for marking and lighting. The existing and forecast weather for this airport shall be at or above landing minima for the approach in use.

## **2. Flap Failure After Takeoff**

When a takeoff alternate is filed, terrain and weather must allow a minimum flight altitude not exceeding 15,000 feet along the diversion route to that alternate, or other suitable airport. The fuel at departure shall be sufficient to divert to the takeoff alternate or other suitable airport with the flaps extended to the takeoff position, conduct an approach and land with 1000 lb (454 kg) of fuel remaining.

**Note:** The fuel burn factor (as per AFM TR RJ/165-1) shall be applied to the normal fuel consumption for calculation of the flaps extended, climb, diversion and approach fuel consumption.

## **3. Flap Zero Landing**

Operations where all useable runways at the destination and alternate airports are forecast to be wet or contaminated (as defined in the AFM) are prohibited during the cold weather

season (December to March inclusive in the northern hemisphere) unless one of the following four conditions (a. through d.) exists:

- a. Each installed flap actuator meets one of the following three conditions:
  - (i) Actuators have less than 5000 flight cycles (FC) since new or overhaul and/or the actuators have been verified serviceable in accordance with Part C (Low Temperature Torque Test of the Flap Actuators) of Bombardier Service Bulletin (SB) 601R-27-150, issued July 12, 2007, or
  - (ii) Actuators have P/N 601R93101-19/-21 (Vendor P/N 852D100-19/-21), P/N 601R93103-19/-20 (Vendor P/N 853D100-19/-20), or P/N 601R93104-19/-20 (Vendor P/N 854D100-19/-20), and have less than 5000 FC since repair (where it can be shown that the actuator inboard pinion seals, Eaton P/Ns 853SC177-1 and -2, were replaced), or
  - (iii) Actuators have P/N 601R93101-23/-25 (Vendor P/N 852D100-23/-25) installed at all inboard flap positions, P/N 601R93103-23/-24 (Vendor P/N 853D100-23/-24) installed at outboard flap No. 3 position, and P/N 601R93104-23/-24 (Vendor P/N 854D100-23/-24) installed at outboard flap No. 4 position.
- b. Pre-dispatch forecast ground temperature at the time of arrival at destination airport is above -25 deg C, utilizing a reliable weather forecast service acceptable to the principal operations inspector (POI).
- c. The Landing Distance Available on a useable runway at the destination airport is at least equal to the actual landing distance required for flaps zero. This distance shall be based on Bombardier performance data, and shall take into account forecast weather and anticipated runway conditions.
- d. The Landing Distance Available on a useable runway at the filed alternate airport, or other suitable airport is at least equal to the actual landing distance for flaps zero. This distance shall be based on Bombardier performance data, and shall take into account forecast weather and anticipated runway conditions.

**Note 1:** If the forecast destination weather is less than 200 feet above DH or MDA, or less than 1 mile (1500 meters) above the authorized landing visibility (or equivalent RVR), as applied to the usable runway at the destination airport, condition 3.a., 3.b., or 3.d. above must be satisfied.

**Note 2:** When conducting No Alternate IFR (NAIFR) operations, condition 3.a., 3.b., or 3.c. above must be satisfied.

#### **4. Dispatch Following a Flap Failed Event**

If normal flap system operation can be restored after an on-ground system reset, continued revenue operation of that airplane is permitted, provided conditions a. and b., and either c. or d., below are satisfied:

- a. Prior to the initial dispatch following an on-ground circuit breaker reset, the flaps must be operated for five full extension/retractions cycles by the flightcrew with no subsequent failures.
- b. Prior to each flight following an on-ground circuit breaker reset, the thrust reversers, ground spoilers, and brake system are verified operational by the flightcrew.
- c. The Landing Distance Available on a useable runway at the destination airport is at least equal to the actual landing distance required for flaps zero. This distance shall be based on Bombardier performance data, and shall take into account forecast weather and anticipated runway conditions.
- d. The Landing Distance Available on a useable runway at the filed alternate airport, or other suitable airport is at least equal to the actual landing distance for flaps zero. This distance shall be based on Bombardier performance data, and shall take into account forecast weather and anticipated runway conditions.

**Note 1:** If the forecast destination weather is less than 200 feet above DH or MDA, or less than 1 mile (1500 meters) above the authorized landing visibility (or equivalent RVR), as applied to the usable runway at the destination airport, condition 4.d. above must be satisfied.

**Note 2:** When conducting No Alternate IFR (NAIFR) operations, condition 4.c. above must be satisfied."

(3) New Training: Do the requirements specified in paragraphs (h)(3)(i) and (h)(3)(ii) of this AD.

(i) As of 30 days after the effective date of this AD, no affected airplane may be operated unless the flight crewmembers of that airplane and the operational control/dispatch personnel for that airplane have received training that is acceptable to the POI on the operational procedures required by paragraph (h)(2) of this AD. Accomplishing this action terminates the requirements specified in paragraph (f)(3) of this AD.

(ii) As of September 30, 2009, no affected airplane may be operated unless the flight crewmembers of that airplane have received simulator training on reduced or zero flap landing that is acceptable to the POI. Thereafter, this training must be done during the normal simulator training cycle, at intervals not to exceed 12 months. Accomplishing this action terminates the requirements specified in paragraph (g)(1) of this AD.

(4) New Maintenance Action: For airplanes on which the low temperature torque test of the flap actuators is required by paragraph (g)(3) of this AD and on which the actuators have not been replaced: Within 12 months after doing the low temperature torque test specified in paragraph (g)(3) of this AD, or within 60 days after the effective date of this AD, whichever occurs later, and thereafter at intervals not to exceed 12 months, do a low temperature torque test of the flap actuators, and do all applicable corrective actions specified in Part C of the Accomplishment Instructions of Bombardier Service Bulletin 601R-27-150, dated July 12, 2007. Do all applicable corrective actions before further flight. Replacing the actuators terminates the repetitive torque tests required by this paragraph for those actuators; however, the replacement actuators are still affected by the requirements of paragraph (g)(3) of this AD, and after passing the initial low temperature torque test required by paragraph (g)(3) of this AD, the repetitive torque tests of paragraph (h)(4) of this AD apply again.

(5) New Optional Maintenance Action: Installation of actuators having P/N 601R93101-23/-25 (Vendor P/N 852D100-23/-25), P/N 601R93103-23/-24 (Vendor P/N 853D100-23/-24), and P/N 601R93104-23/-24 (Vendor P/N 854D100-23/-24) in accordance with Bombardier Service Bulletin 601R-27-151, Revision B, dated June 12, 2008, terminates the requirements of paragraph "3. Flap

Zero Landing," of the statement required by paragraph (h)(2) of this AD. After doing the installation specified in this paragraph, paragraph "3. Flap Zero Landing," specified in paragraph (h)(2) of this AD, may be removed from the limitations section of the AFM.

(6) Dispatch Following a Flap Fail Event: For airplanes on which a flap fail message occurs, prior to further flight, do all applicable maintenance actions in accordance with Section 27-50-00 of Chapter 27 of the Bombardier Canadair Regional Jet CRJ100/200/440 Fault Isolation Manual CSP A-009, Volume 1, Revision 38, dated January 10, 2008; except if maintenance resources are not available and normal flap system operation can be restored after an on-ground circuit breaker reset operation, then continued revenue operation is permitted without further maintenance action for up to 10 flight cycles, subject to the operating limitations specified by the procedure titled "4. Dispatch Following a Flap Failed Event," specified in paragraph (h)(2) of this AD; except as provided by paragraphs (h)(6)(i) and (h)(6)(ii) of this AD. The circuit breaker reset operation can be performed by the flightcrew when authorized by the operator's maintenance control organization. These maintenance requirements must be tracked in a manner acceptable to the principal maintenance inspector (PMI).

(i) Within 10 flight cycles following the initial on-ground circuit breaker reset operation, do all applicable maintenance actions in accordance with Section 27-50-00 of Chapter 27 of the Bombardier Canadair Regional Jet CRJ100/200/440 Fault Isolation Manual CSP A-009, Volume 1, Revision 38, dated January 10, 2008.

(ii) If another flap fail event occurs anytime within the 10-flight-cycle limit after the initial circuit breaker reset operation, before further flight, do all applicable maintenance actions in accordance with Section 27-50-00 of Chapter 27 of the Bombardier Canadair Regional Jet CRJ100/200/440 Fault Isolation Manual CSP A-009, Volume 1, Revision 38, dated January 10, 2008.

(7) As of the effective date of this AD, operators are required to report all fault data, including flaps electronic control unit (FECU) codes, to Bombardier within 30 days after each failure occurrence, in accordance with Task 05-51-50-980-801 as introduced in the Canadair Regional Jet TR 05-035, dated July 13, 2007, to the Canadair Regional Jet Aircraft Maintenance Manual (AMM). As of 24 months after the effective date of this AD, the actions specified in this paragraph are no longer required.

(8) Cockpit Placard: Within 120 days after the effective date of this AD, install a flight compartment placard in accordance with Bombardier Service Bulletin 601R-11-090, dated August 15, 2008.

## **Method of Compliance With AD 2006-12-21**

(i) Installing flap actuators in accordance with paragraph (h)(5) of this AD is acceptable for compliance with the installation of Number 3 and Number 4 flap actuators required by paragraph (h) of AD 2006-12-21, Amendment 39-14647. All other requirements of paragraph (h) of AD 2006-12-21 are still applicable and must be complied with.

## **FAA AD Differences**

Note 3: This AD differs from the MCAI and/or service information as follows:

(1) The maintenance tasks specified in the first row of the table in "Part IV. Maintenance Actions" of the MCAI do not specify a corrective action if an actuator is not serviceable (i.e., torque test results are not satisfactory). However, this AD requires contacting the FAA or installing a serviceable actuator before further flight if torque test results are not satisfactory. (Reference paragraph (f)(4) of this AD.)

(2) Although paragraph 2. of "Part III. Training" of the MCAI recommends accomplishing the new training within 1 year, this AD requires accomplishing the training before September 30, 2009, in order to ensure that the actions are completed prior to the onset of cold weather operations.

(3) For the Flaps Zero Landing requirements in paragraph 3.a (i) of "Part II. Operational Procedures," the MCAI refers to actuators with less than 5,000 flight cycles. We have clarified sub-paragraph 3.a.(i) of paragraph "3. Flap Zero Landing," of the statement specified in paragraph (h)(2) of this AD that the 5,000 flight cycles is since new or overhauled.

(4) For the Flaps Zero Landing requirements in paragraph 3.c. of "Part II. Operational Procedures," the MCAI requires a pre-dispatch forecast ground temperature at the time of arrival at the destination airport to be above -25 deg C. This AD clarifies sub-paragraph 3.b. of paragraph "3. Flap Zero Landing," of the statement specified in paragraph (h)(2) of this AD that the source of the forecast is to be a reliable weather forecast service acceptable to the POI.

**Other FAA AD Provisions**

(j) The following provisions also apply to this AD:

(1)(i) Alternative Methods of Compliance (AMOCs): The Manager, New York Aircraft Certification Office (ACO), FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. Send information to ATTN: Dan Parrillo, Aerospace Engineer, Systems and Flight Test Branch, ANE-171, FAA, New York ACO, 1600 Stewart Avenue, Suite 410, Westbury, New York 11590; telephone (516) 228-7305; fax (516) 794-5531. Before using any approved AMOC on any airplane to which the AMOC applies, notify your principal maintenance inspector (PMI) or principal avionics inspector (PAI), as appropriate, or lacking a principal inspector, your local Flight Standards District Office.

(ii) AMOCs approved previously in accordance with AD 2008-01-04 are approved as AMOCs for the corresponding provisions of this AD.

(2) Airworthy Product: For any requirement in this AD to obtain corrective actions from a manufacturer or other source, use these actions if they are FAA-approved. Corrective actions are considered FAA-approved if they are approved by the State of Design Authority (or their delegated agent). You are required to assure the product is airworthy before it is returned to service.

(3) Reporting Requirements: For any reporting requirement in this AD, under the provisions of the Paperwork Reduction Act, the Office of Management and Budget (OMB) has approved the information collection requirements and has assigned OMB Control Number 2120-0056.

**Related Information**

(k) Refer to MCAI Canadian Airworthiness Directive CF-2007-10R1, dated August 18, 2008, and the service information identified in Table 1 of this AD for related information.

**Table 1 – Related Service Information**

<b>Service Information</b>	<b>Revision Level</b>	<b>Date</b>
Bombardier Service Bulletin 601R-27-150	Original	July 12, 2007
Bombardier Service Bulletin 601R-27-151	B	June 12, 2008
Bombardier Service Bulletin 601R-11-090	Original	August 15, 2008
Canadair Regional Jet TR RJ/165 to the Canadair Regional Jet AFM CSP A-012	Original	July 6, 2007
Canadair Regional Jet TR RJ/165-1 to the Canadair Regional Jet AFM CSP A-012	Original	August 7, 2008
Canadair Regional Jet TR 05-035 to the Canadair Regional Jet AMM	Original	July 13, 2007

**Material Incorporated by Reference**

(l) You must use the service information contained in Table 2 of this AD to do the actions required by this AD, as applicable, unless the AD specifies otherwise.

**Table 2 – All material incorporated by reference**

<b>Service Information</b>	<b>Revision Level</b>	<b>Date</b>
Bombardier Service Bulletin 601R-27-150, including Appendix A	Original	July 12, 2007
Bombardier Service Bulletin 601R-27-151	B	June 12, 2008
Bombardier Service Bulletin 601R-11-090	Original	August 15, 2008
Canadair Regional Jet Temporary Revision RJ/165 to the Canadair Regional Jet Airplane Flight Manual CSP A-012	Original	July 6, 2007
Canadair Regional Jet TR RJ/165-1, including pages 05-11-5 through 05-11-14, to the Canadair Regional Jet AFM CSP A-012	Original	August 7, 2008
Canadair Regional Jet TR 05-035 to the Canadair Regional Jet AMM	Original	July 13, 2007
Section 27-50-00 of Chapter 27 of the Bombardier Canadair Regional Jet CRJ100/200/440 Fault Isolation Manual CSP A-009, Volume 1	38	January 10, 2008

Bombardier Canadair Regional Jet CRJ100/200/440 Fault Isolation Manual CSP A-009, Volume 1, Revision 38, dated January 10, 2008, contains the following effective pages:

**List of Effective Pages:**

<b>Page Title/Description</b>	<b>Page Number(s)</b>	<b>Revision Number</b>	<b>Date Shown on Page(s)</b>
FIM Title Page	None shown	38	January 10, 2008
Transmittal Letter	1	38	January 10, 2008
Record of Revisions	1		January 10, 2008
FIM Volume 1 Title Page	None shown	38	January 10, 2008
Chapter 27 Effective Pages	1-4	38	Pages 1-3, January 10, 2008; Page 4, January 10, 2007

Section 27-50-00		
101	28	August 26, 2003
102-153	38	March 17, 2004
154, 155	30	January 10, 2008
156	34	April 10, 2005

(1) The Director of the Federal Register approved the incorporation by reference of the service information contained in Table 3 of this AD under 5 U.S.C. 552(a) and 1 CFR part 51.

**Table 3 – New material incorporated by reference**

<b>Service Information</b>	<b>Revision Level</b>	<b>Date</b>
Bombardier Service Bulletin 601R-27-151	B	June 12, 2008
Bombardier Service Bulletin 601R-11-090	Original	August 15, 2008
Canadair Regional Jet TR RJ/165-1, including pages 05-11-5 through 05-11-14, to the Canadair Regional Jet AFM CSP A-012	Original	August 7, 2008
Canadair Regional Jet TR 05-035 to the Canadair Regional Jet AMM	Original	July 13, 2007
Section 27-50-00 of Chapter 27 of the Bombardier Canadair Regional Jet CRJ100/200/440 Fault Isolation Manual CSP A-009, Volume 1	38	January 10, 2008

(2) The Director of the Federal Register previously approved the incorporation by reference of Bombardier Service Bulletin 601R-27-150, including Appendix A, dated July 12, 2007; and Canadair Regional Jet Temporary Revision RJ/165, dated July 6, 2007, to the Canadair Regional Jet Airplane Flight Manual CSP A-012; on September 5, 2007 (72 FR 46555, August 21, 2007).

(3) For service information identified in this AD, contact Bombardier, Inc., 400 Côte-Vertu Road West, Dorval, Québec H4S 1Y9, Canada; telephone 514-855-5000; fax 514-855-7401; e-mail [thd.crj@aero.bombardier.com](mailto:thd.crj@aero.bombardier.com); Internet <http://www.bombardier.com>.

(4) You may review copies of the service information at the FAA, Transport Airplane Directorate, 1601 Lind Avenue, SW., Renton, Washington. For information on the availability of this material at the FAA, call 425-227-1221 or 425-227-1152.

(5) You may also review copies of the service information that is incorporated by reference at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202-741-6030, or go to: [http://www.archives.gov/federal\\_register/code\\_of\\_federal\\_regulations/ibr\\_locations.html](http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html).

Issued in Renton, Washington, on February 26, 2009.

Ali Bahrami,  
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