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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2005-22481; Directorate Identifier 2004-NM-176-AD; Amendment 39-14647; AD 2006-12-21]

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.

SUMMARY: The FAA is superseding an existing airworthiness directive (AD), which applies to certain Bombardier Model CL-600-2B19 (Regional Jet Series 100) airplanes. That AD currently requires revising the airplane flight manual (AFM) to provide the flightcrew with revised procedures for checking the flap system. The existing AD also requires revising the maintenance program to provide procedures for checking the flap system, and performing follow-on actions, if necessary. This new AD requires installing new flap actuators, a new or retrofitted air data computer, a new skew detection system, and new airspeed limitation placards; and revising the AFM to include revised maximum allowable speeds for flight with the flaps extended, and a new skew detection system/crosswind-related limitation for take-off flap selection. This AD results from a number of cases of flap system failure that resulted in a twisted outboard flap panel. We are issuing this AD to prevent an unannounced failure of the flap system, which could result in a flap asymmetry and consequent reduced controllability of the airplane.

DATES: This AD becomes effective July 21, 2006.

The Director of the Federal Register approved the incorporation by reference of certain publications listed in the AD as of July 21, 2006.

ADDRESSES: You may examine the AD docket on the Internet at <http://dms.dot.gov> or in person at the Docket Management Facility, U.S. Department of Transportation, 400 Seventh Street, SW., Nassif Building, room PL-401, Washington, DC.

Contact Bombardier, Inc., Canadair, Aerospace Group, P.O. Box 6087, Station Centre-ville, Montreal, Quebec H3C 3G9, Canada, for service information identified in this AD.

FOR FURTHER INFORMATION CONTACT: Daniel Parrillo, Aerospace Engineer, Systems and Flight Test Branch, ANE-172, 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:

Examining the Docket

You may examine the airworthiness directive (AD) docket on the Internet at <http://dms.dot.gov> or in person at the Docket Management Facility office between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The Docket Management Facility office (telephone (800) 647-5227) is located on the plaza level of the Nassif Building at the street address stated in the ADDRESSES section.

Discussion

The FAA issued a notice of proposed rulemaking (NPRM) to amend 14 CFR part 39 to include an AD that supersedes AD 98-20-01, amendment 39-10767 (63 FR 49661, September 17, 1998). The existing AD applies to certain Bombardier Model CL-600-2B19 (Regional Jet Series 100) series airplanes. That NPRM was published in the Federal Register on September 21, 2005 (70 FR 55315). That NPRM proposed to require installing new flap actuators, a new or retrofitted air data computer, a new skew detection system, and new airspeed limitation placards; and revising the AFM to include revised maximum allowable speeds for flight with the flaps extended, and a new skew detection system/crosswind-related limitation for take-off flap selection.

Comments

We provided the public the opportunity to participate in the development of this AD. We have considered the comments that have been received on the NPRM.

Request To Address Defective Parts Manufacturer Approval (PMA) Parts

Modification and Replacement Parts Association (MARPA) states that the NPRM specifies that the flap actuators be replaced in accordance with a manufacturer service bulletin, but that service bulletins are proprietary documents and are difficult to obtain for those who are not aircraft owners and/or operators. MARPA further states that when a service document is incorporated by reference into an airworthiness directive it loses its copyright status and becomes part of the public document. MARPA states that it is not possible without reference to the service bulletin to determine precisely the actuators that are being replaced with "new and improved" actuators. For this reason, MARPA requests that the language in paragraph (h) of the NPRM be expanded to clarify its intent for those who do not have a copy of the referenced service information and, therefore, cannot determine the part number (P/N) of the actuators that are being replaced. MARPA requests that if certain P/Ns are now deemed to be not airworthy, the NPRM should be revised to identify those parts by P/N. MARPA further states that if these parts are not considered airworthy, the language in the NPRM should be expanded to embrace any approved PMA parts that have the same design data as the defective parts. MARPA states that these changes would assist parts sellers and maintenance, repair and overhaul (MRO) organizations to remove these parts from the supply stream, and producers of PMA parts would be apprised of the defects.

We concur with the commenter's general request that, if we know that an unsafe condition also exists in PMA parts, the AD should address those parts, as well as the original parts. In this case, the NPRM identifies in paragraph (k) parts that are now deemed not to be airworthy. The commenter's

remarks are timely in that the Transport Airplane Directorate currently is in the process of reviewing this issue as it applies to transport category airplanes. We acknowledge that there may be other ways of addressing this issue to ensure that unsafe PMA parts are identified and addressed. Once we have thoroughly examined all aspects of this issue, including input from industry, and have made a final determination, we will consider whether our policy regarding addressing PMA parts in ADs needs to be revised. We consider that to delay this AD action would be inappropriate, since we have determined that an unsafe condition exists and that replacement of certain parts must be accomplished to ensure continued safety. Therefore, no change has been made to the final rule in this regard.

Request To Reference PMA Parts

MARPA also requests that any "new and improved" parts cited in the service bulletin to be installed be designated by P/N with the qualifying phrase "or other FAA-approved equivalent part," and that this phrase be appended to the list of approved part numbers. MARPA states that manufacturer service documents specify exclusively original equipment parts, and has never seen any service document that even acknowledges the existence of alternatively approved parts. In MARPA's experience, service bulletins from manufacturers specify exclusively original equipment manufacturer (OEM) parts, to the exclusion of other parts approved under 14 CFR part 21.303 (Parts Manufacturer Approval (PMA)). The commenter states that the proposed action is therefore in seeming conflict with the existing CFR.

We infer that the commenter would like the AD to permit installation of any equivalent PMA parts so that it is not necessary for an operator to request approval of an alternative method of compliance (AMOC) in order to install an "equivalent" PMA part. Whether an alternative part is "equivalent" in adequately resolving the unsafe condition can only be determined on a case-by-case basis based on a complete understanding of the unsafe condition. Our policy is that, in order for operators to replace a part with one that is not specified in the AD, they must request an AMOC. This is necessary so that we can make a specific determination that an alternative part is or is not susceptible to the same unsafe condition.

In response to the commenter's statement regarding 14 CFR 21.203, under which the FAA issues PMAs, this statement appears to reflect a misunderstanding of the relationship between ADs and the certification procedural regulations of part 21 of the Federal Aviation Regulations (14 CFR part 21). Those regulations, including section § 21.303 of the Federal Aviation Regulations (14 CFR 21.203), are intended to ensure that aeronautical products comply with the applicable airworthiness standards. But ADs are issued when, notwithstanding those procedures, we become aware of unsafe conditions in these products or parts. Therefore, an AD takes precedence over design approvals when we identify an unsafe condition, and mandating installation of a certain part number in an AD is not at variance with section § 21.303.

The AD provides a means of compliance for operators to ensure that the identified unsafe condition is addressed appropriately. For an unsafe condition attributable to a part, the AD normally identifies the replacement parts necessary to obtain that compliance. As stated in section 39.7 of the Federal Aviation Regulations (14 CFR 39.7), "Anyone who operates a product that does not meet the requirements of an applicable airworthiness directive is in violation of this section." Unless an operator obtains approval for an AMOC, replacing a part with one not specified by the AD would make the operator subject to an enforcement action and result in a civil penalty. No change to the AD is necessary in this regard.

Request To Revise Cost Estimate

Air Wisconsin states that certain cost estimates in the NPRM are incorrect. Air Wisconsin states that the estimated hours for doing the following actions should be revised: Installing the provisions in

accordance with Bombardier Service Bulletin 601R-27-115, Revision D, dated March 18, 2004, should be 200 hours; installing the actuators in accordance with Bombardier Service Bulletin 601R-27-114, Revision B, dated December 4, 2003, should be 20 hours; and installing the sensors and skew detection system (SDS) in accordance with Bombardier Service Bulletin 601R-27-116, Revision B, dated February 2, 2004, should be 4.5 hours for a total of 224.5 hours. The current estimate for doing those actions in the NPRM is 147 hours.

We disagree. The cost estimates in ADs represent only the time necessary to perform the specific actions actually required by the AD. These figures typically do not include incidental costs, such as the time required to gain access and close up, planning time, or time necessitated by other administrative actions. No change to the AD is necessary in this regard.

Request To Use Latest Revisions of Service Bulletins

Two commenters, Air Wisconsin and Comair, note that several of the service bulletins are not identified in the NPRM at their latest revision level. The commenters request that we update the AD to include the latest revisions of the service bulletins.

We agree. We have reviewed the latest revisions of the service bulletins, and the procedures therein are essentially the same as those in the service bulletins cited in the NPRM. Therefore, we have revised the AD to include references to the latest revisions of several service bulletins. We have also revised paragraph (j) of the AD, "Actions Accomplished in Accordance with Previous Revisions of Service Bulletins," to include reference to the applicable revision levels used before the effective date of this AD.

Request To Use Lower Flap Speed

Air Wisconsin and Comair also request that we eliminate the requirement in paragraphs (i)(3) and (i)(4) of the NPRM to raise flap speeds in accordance with Bombardier Service Bulletin 601R-11-080, dated November 28, 2003. Air Wisconsin prefers to remain conservative and continue to use a lower flap speed. Comair states that other operators, if they choose to do so, should be allowed to use the higher speeds and remove the limitation placard. Comair has operated these airplanes in this condition (where the air data computer (ADC) puts the high speed cue at 230 for flaps 8 and 20, but the placard specified 215 for flaps 8 and 20), so there should be no additional operational issues. The high speed cue of 215 has worked well for Comair. Comair states that this cue is more conservative on the flap system and causes no operational concerns by differing from the ADC.

We disagree. The new placards and aural warnings are based on aircraft limitations. If operators use a placard that is not consistent with the aural warning, they are essentially using a placard as an operating limit rather than the aircraft limit, which is a deviation from the basis of certification. Normally, this kind of deviation is acceptable only as an interim solution under an AD while a final fix is being pursued. We cannot impose lower limits than those that are established by the certification requirements. However, operators may use lower flap speeds, since these are within the aircraft limitations. An operator may choose to fly at lower limits for fleet standardization and commonality. Those limits must be coordinated with the Principal Operations Inspector. No change to the AD is necessary in this regard.

Request To Clarify Terminating Action

Air Wisconsin requests that we make it clear that installing the skew detection system provides terminating action for all requirements of the AD. Air Wisconsin states that it was intended that incorporating the modifications would terminate the requirements of AD 98-20-01 (visual inspection of the flaps prior to each flight and maintenance action required after "Flap Fail" message). Air Wisconsin states that Canadian airworthiness directive CF-1998-14R4, dated June 1, 2004 (which is

the parallel airworthiness directive for this AD), clearly indicates in Part VI, paragraph F, that compliance with the installation of the skew detection system provides terminating action for all requirements of that directive. Air Wisconsin states that this terminating action is not clearly indicated in the NPRM.

We partially agree. We agree that clarifying the terminating action would be helpful to operators. Paragraph (i) of the NPRM states, "Accomplishing the actions in paragraph (h) and (i) of this AD terminates the requirements of paragraphs (f) and (g) of this AD, and the Airplane Flight Manual (AFM) revisions required by those paragraphs may be removed from the AFM." Paragraphs (f) and (g) of the NPRM are a restatement of the requirements of AD 98-20-01. Therefore, we have changed paragraph (i) to state, "* * * terminates the requirements of paragraphs (f) and (g) of this AD (the requirements of AD 98-20-01)* * *." We disagree with adding the statement, "* * * provides terminating action for all requirements of this AD* * *." Certain requirements of the new AD remain in effect even after the actions in paragraphs (h) and (i) are accomplished, and therefore the statement regarding "all requirements" is incorrect. For example, the requirements of paragraph (k) of this AD, which prohibits installation of certain part numbers, remain in effect.

Request To Recognize Provisions of the Minimum Equipment List (MEL)

Air Wisconsin states that the NPRM does not recognize operation of the aircraft under the provisions of the MEL. Air Wisconsin explains that since the AD does not specifically address any provisions of the MEL, any existing provisions would not be affected.

We infer that Air Wisconsin requests that we revise the AD to include a reference to the MEL and a description of how it affects the MEL. We disagree. The AD does not specifically address any provisions of the MEL, and therefore any existing provisions are not affected. No change to the AD is necessary in this regard.

Request To Eliminate Decal-Removal Requirement

Air Wisconsin states that paragraph (i)(5) of the NPRM indicates that the decals installed on the flight deck can be removed. Air Wisconsin states that these decals were never a requirement of AD 98-20-01.

We infer that Air Wisconsin is requesting that we eliminate the decal-removal requirement in paragraph (i)(5) of the AD. We disagree. The installation of the decals that say "Visually inspect flaps prior to departure" was not a requirement of AD 98-20-01. However, those decals were installed on many airplanes in accordance with various AMOCs issued against that AD. Consequently, we wish to eliminate those decals from airplanes that may have had them installed as part of an AMOC against AD 98-20-01. Paragraph (i)(5) of this AD specifically states that it applies only to those airplanes. No change to the AD is necessary in this regard.

Request To Acknowledge Installation of Different Part Number

Comair requests that we revise paragraph (i)(2) of the AD to acknowledge the accomplishment of Bombardier Service Bulletin 601R-34-107. Comair explains that paragraph (i)(2) requires, in part, "install a new or retrofitted air data computer (ADC) in accordance with the accomplishment instructions of Bombardier Service Bulletin 601R-34-128, Revision B, dated September 7, 2001." Comair states that it has previously complied with Bombardier Service Bulletin 601R-34-107, "ADC Calibrated for RVSM" (Reduced Vertical Separation Minimum). The ADC incorporated during this service bulletin is P/N 822-0372-445.

We disagree with the need to change the AD in this regard. The AD mandates installation of a new or retrofitted ADC in accordance with the Accomplishment Instructions of Bombardier Service Bulletin 601R-34-128. The resultant ADC P/Ns after doing this installation are: 822-0372-154

without RVSM installed, or 822-0372-445 with RVSM installed. Both of these P/Ns meet the requirements of the AD. Bombardier Service Bulletin 601R-34-107 converts ADC P/N 822-0327-140 to P/N 822-0372-143. Since neither of these P/Ns have Bombardier Service Bulletin 601R-34-128 installed, neither complies with the intent of the AD. However, Bombardier Service Bulletin 601R-34-107 also converts P/N 822-0372-154 into P/N 822-0372-445. Both of these P/Ns are identified in Bombardier Service Bulletin 601R-34-128 and are, by definition, already acceptable. No change to the AD is necessary in this regard.

Explanation of Editorial Changes to Paragraphs (i)(1) and (i)(4)

In paragraph (i)(1) of the NPRM, we inadvertently specified October 27, 2004, as the date of Bombardier Service Bulletin 601R-27-115, Revision E. We have revised paragraph (i) of the AD to specify the correct issue date of this service bulletin, which is October 7, 2004. In paragraph (i)(4) of the NPRM, we inadvertently identified the Canadair Regional Jet AFM as CSP A-102. We have revised paragraph (i)(4) of the AD to refer to Canadair Regional Jet AFM, CSP A-012.

Clarification of Alternative Method of Compliance (AMOC) Paragraph

We have revised this action to clarify the appropriate procedure for notifying the principal inspector before using any approved AMOC on any airplane to which the AMOC applies.

Clarification of Reporting Requirements

We have also clarified this action to specify that where Bombardier Service Bulletins 601R-27-111, dated March 6, 2000; 601R-27-115, Revision E, dated October 7, 2004; and 601R-34-128, Revision C, dated March 28, 2005; specify to submit certain information to the manufacturer, this AD does not include those requirements.

Conclusion

We have carefully reviewed the available data, including the comments that have been received, and determined that air safety and the public interest require adopting the AD with the changes described previously. We have determined that these changes will neither increase the economic burden on any operator nor increase the scope of the AD.

Costs of Compliance

The following table provides the estimated costs for U.S. operators to comply with this AD. For all actions the average labor rate is \$65 and the number of U.S.-registered airplanes is 651.

ESTIMATED COSTS

Action	Work hours	Parts	Cost per airplane	Fleet cost
Revise the AFM (required by AD 98-20-01).	1	N/A	\$65	\$42,315
Revise the maintenance program (required by AD 98-20-01).	1	N/A	65	42,315
Install ADC (new action)	1	The manufacturer states that it will supply required parts to the operators at no cost.	65	42,315

Action	Work hours	Parts	Cost per airplane	Fleet cost
Install #3 and #4 flap actuators (new action).	18	The manufacturer states that it will supply required parts to the operators at no cost.	1,170	761,670
Install skew detection system (new action).	147	The manufacturer states that it will supply required parts to the operators at no cost.	9,555	6,220,305
Install new airspeed limitation placards (new action).	1	The manufacturer states that it will supply required parts to the operators at no cost.	65	42,315
Revise the AFM (new action)	1	N/A	65	42,315

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 have 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 that this AD:

- (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.

We prepared a regulatory evaluation of the estimated costs to comply with this AD and placed it in the AD docket. See the ADDRESSES section for a location to examine the regulatory evaluation.

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 Federal Aviation Administration (FAA) amends § 39.13 by removing amendment 39-10767 (63 FR 49661, September 17, 1998) and by adding the following new airworthiness directive (AD):

AIRWORTHINESS DIRECTIVE

www.faa.gov/aircraft/safety/alerts/
www.gpoaccess.gov/fr/advanced.html

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



2006-12-21 Bombardier, Inc. (Formerly Canadair): Amendment 39-14647. Docket No. FAA-2005-22481; Directorate Identifier 2004-NM-176-AD.

Effective Date

(a) This AD becomes effective July 21, 2006.

Affected ADs

(b) This AD supersedes AD 98-20-01.

Applicability

(c) This AD applies to Bombardier Model CL-600-2B19 (Regional Jet Series 100 & 400) airplanes, certificated in any category, serial numbers 7003 through 7903 inclusive.

Unsafe Condition

(d) This AD results from a number of cases of flap system failure that resulted in a twisted outboard flap panel. We are issuing this AD to prevent an unannounced failure of the flap system, which could result in a flap asymmetry and consequent reduced controllability of the airplane.

Compliance

(e) You are responsible for having the actions required by this AD performed within the compliance times specified, unless the actions have already been done.

Restatement of the Requirements of AD 98-20-01:

Note 1: Bombardier Service Letter RJ-SL-27-002A, dated April 8, 1998, and Service Letter RJ-SL-27-037, dated July 2, 1998, may provide operators with additional information concerning the actions required by this AD. However, accomplishment of the procedures specified in these service letters should not be considered to be an acceptable method of compliance with the requirements of this AD.

(f) Within 10 days after October 2, 1998 (the effective date of AD 98-20-01), accomplish the requirements of paragraphs (f)(1), (f)(2), and (f)(3) of this AD.

(1) Revise the Limitations Section of the FAA-approved airplane flight manual (AFM) to include the following procedures and Figures 1 and 2 of this AD. After accomplishing the actions in paragraphs (h) and (i) of this AD, remove the revisions required by this paragraph of this AD from the AFM.

"Air Operator Actions

Important: If the outboard flap position is outside the "GO" range, as shown in figure 2., further flight is prohibited until required maintenance actions have been accomplished.

1. Touch-and-go landings for the purposes of training must be accomplished using a flap setting of 20 degrees for the entire procedure.

2. (a) Take-off flaps must be set prior to departure, and

(b) An external visual check must be accomplished to detect any twisting, skewing, or abnormal deformation of the flaps, using the information given in Figures 1 and 2.

Note 1: If the outboard flap position is outside the "GO" range as shown in figure 2., further flight is prohibited until required maintenance actions have been accomplished.

Note 2: This visual check must be accomplished either by a member of the flight crew or by maintenance personnel, and the results reported directly to the pilot-in-command prior to take-off.

3. If any additional change to the flap position is necessary, prior to take-off, accomplish the visual check specified by the preceding paragraph 2. (b)."

(2) Revise the Normal Procedures Section of the FAA-approved AFM to include the following procedures:

"To minimize a possible flap twist in flight when operating flaps, operate the flap selector sequentially, stopping at each setting (i.e., 0 degrees, 8 degrees if applicable, 20 degrees, 30 degrees, 45 degrees; or operate the flap selector in reverse order), and waiting for the flaps to reach each position before selecting the next setting. Monitor the control wheel for abnormal control wheel angles during each transition in flap position.

Note: This procedure is not applicable during a go-around or during any emergency aircraft handling procedure where prompt flap retraction is required. In these cases, follow the applicable AFM procedures."

(3) Revise the Abnormal Procedures Section of the FAA-approved AFM to include the following procedures.

"If abnormal aileron control wheel angles develop during flap operation with the autopilot on, or if the aircraft rolls without pilot input with the autopilot off (with or without a 'FLAPS FAIL' caution message), perform the following actions:

1. If flaps are being extended, immediately return the flaps to the previously selected position (e.g., for flaps selected from 8 degrees to 20 degrees, re-select 8 degrees).

2. If flaps are being retracted, the flap selector should remain in the currently selected position (e.g., for flaps selected from 20 degrees to 8 degrees, leave selector at 8 degrees).

3. Do not attempt to operate the flaps any further.

4. If the flaps are engaged, disconnect the autopilot.

Note: When disconnecting the autopilot, anticipate an out-of-trim situation and hold the aileron control wheel in its current position.

5. For landing, perform the "Flaps Failure" procedure for the following conditions:

(a) If an abnormal aileron control wheel angle to the left develops, do not land if a crosswind from the left is greater than 20 knots.

(b) If an abnormal aileron control wheel angle to the right develops, do not land if a crosswind from the right is greater than 20 knots.

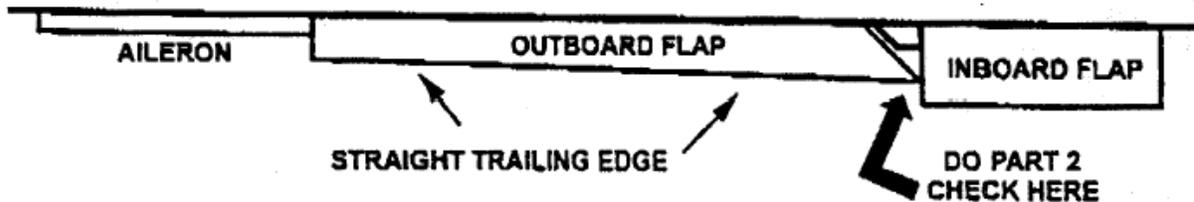
6. After landing, do not attempt to retract the flaps. Record the event in the Aircraft Maintenance Log Book and notify the person responsible for maintenance."

NORMAL/ABNORMAL OUTBOARD FLAP CONFIGURATION IN TAKE-OFF POSITION

Note: View looking forward on left wing trailing edge (right side opposite).

1. NORMAL

A normal outboard flap has a straight trailing edge, and the inboard corner is slightly above (i.e. higher) than the inboard flap.



2. ABNORMAL

The following are indications of an outboard flap with a twist, skew or abnormal deformation:

- Noticeable curve in the trailing edge
- Buckled top or bottom surface
- Higher than normal position of the inboard trailing edge corner

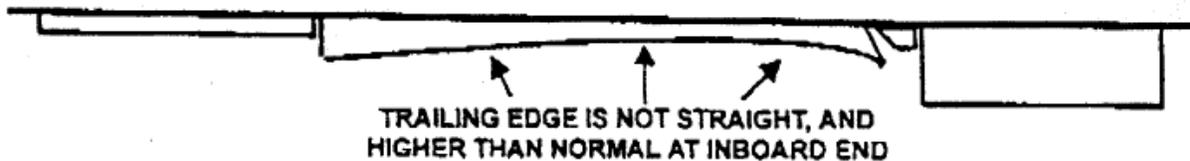


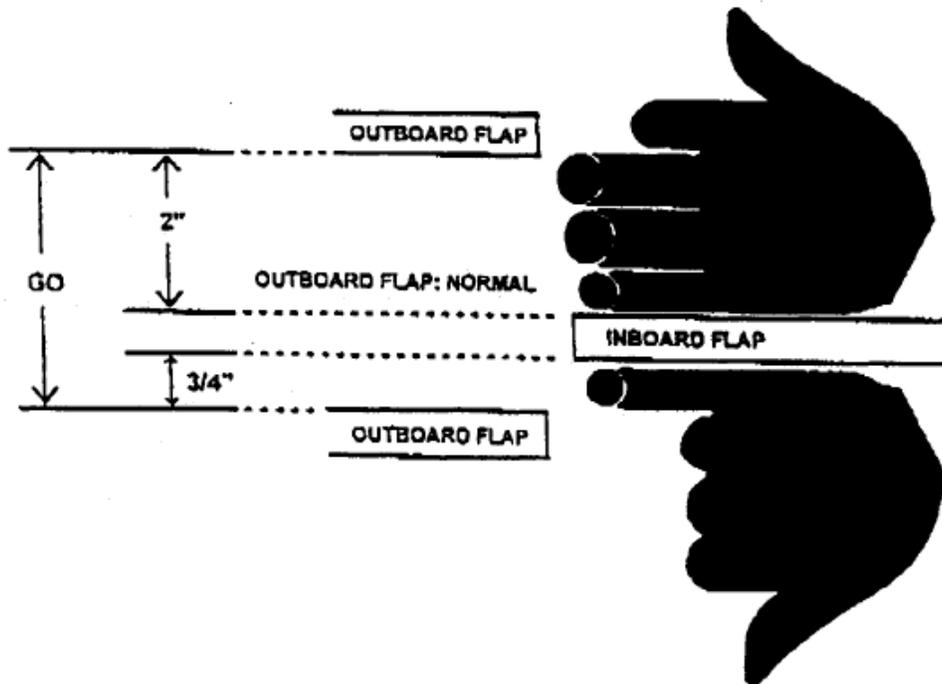
Figure 1. Normal/Abnormal Outboard flap Configuration in Take-off Position”

OUTBOARD FLAP GO/NO-GO CRITERIA IN TAKE-OFF POSITION

- NOTE 1. These criteria are applicable for any size of hand.
2. View looking forward on left wing trailing edge (right side opposite).

If the outboard flap position is outside the "GO" range as shown below further flight is prohibited.

1. FLAPS AT 8 DEGREES



2. FLAPS AT 20 DEGREES

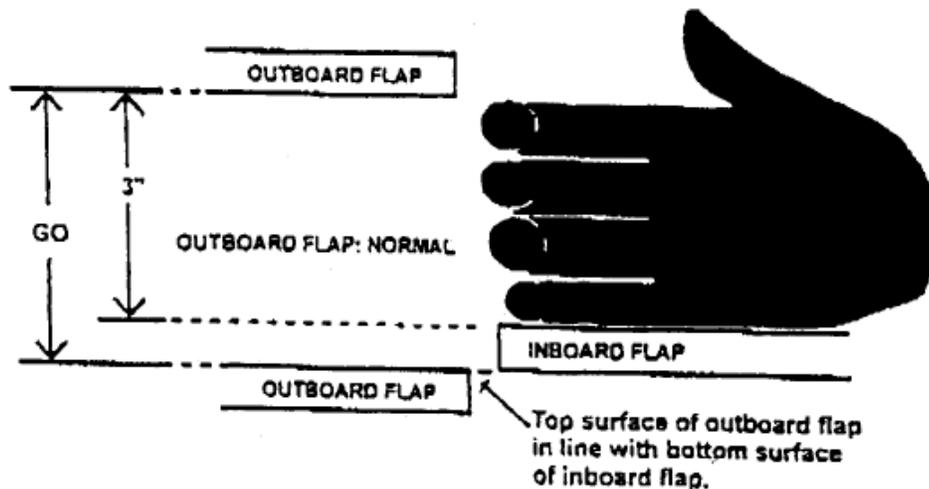


Figure 2. Outboard Flap Go/No-Go Criteria in Take-off Position"

(g) Within 10 days after October 2, 1998, revise the FAA-approved maintenance program to include the following procedures and Figures 1 and 2 of this AD:

"Maintenance Procedure

Whenever a "FLAPS FAIL" caution message occurs, carry out the following procedures after landing:

Note: These procedures are to be accomplished by maintenance personnel only.

1. Check that there have been no other "FLAPS FAIL" caution messages reported within the previous 72 hours. If a previous message has been reported, prior to further flight, perform the actions required in the following Maintenance Action section. If no previous "FLAPS FAIL" caution message has been reported, continue with the following:

2. Carry out an external visual check of each outboard flap for evidence of twisting, skewing, or abnormal deformation. (Reference Figures 1 and 2.)

3. If there is no evidence of twisting, skewing, or abnormal deformation, proceed as follows:

(a) Reset the flap system **ONLY ONCE** by cycling circuit breakers CB1-F4 and CB2-F4.

(b) If the system does not reset (i.e., the "FLAPS FAIL" caution message is still posted), prior to further flight, perform the actions required in the following Maintenance Action section.

(c) If the system resets, cycle the flaps to 45 degrees and back to 0 degrees. Continued flap operation for up to a maximum of 72 hours is then permitted as long as no additional "FLAPS FAIL" caution message is indicated.

(d) If an additional "FLAPS FAIL" caution message occurs within the period of 72 hours, as specified above, prior to further flight, perform the actions required in the following Maintenance Action section.

(e) Within 72 hours, even if no further "FLAPS FAIL" messages have been indicated, perform the actions required in the following Maintenance Action section.

4. If there is evidence of twisting, skewing, or abnormal deformation, **PRIOR TO FURTHER FLIGHT**, perform the actions required in the following Maintenance Action section.

Maintenance Action

Whenever the outboard flap position indicator is outside the "GO" range as shown in Figure 2, or whenever directed to do so by the Maintenance Procedure above, perform the following procedures:

A. Interrogate the flap electronic control unit (FECU) per Fault Isolation Manual, Section 27-50-00, "Flaps Fault Isolation," and rectify as applicable.

B. Visually check each flap for evidence of twisting, skewing, or abnormal deformation.

1. If there is no evidence of twisting, skewing, or abnormal deformation, manually isolate any jammed, disconnected, or dragging component; and rectify all discrepant conditions.

2. If there is evidence of twisting, skewing, or abnormal deformation, replace both actuators and any discrepant flap panel with new or serviceable components. In addition, inspect flexible shaft(s) inboard of the most outboard actuator removed for discrepancies, and replace any discrepant flexible shaft with a new or serviceable flexible shaft.

Note: An acceptable procedure for testing the flap drive breakaway input torque is detailed in Aircraft Maintenance Manual Temporary Revision 27-203, Task 27-53-00-750-802, dated July 17, 1998.

C. Within 3 days after identifying a flap panel twist or logging a "FLAPS FAIL" caution message, notify Bombardier Aerospace, via the Canadair Regional Jet Action Center, of all findings and actions taken."

New Requirements of the AD

Install New Flap Actuators

(h) Within 12 months after the effective date of this AD: Install new Number 3 and Number 4 flap actuators in accordance with the Accomplishment Instructions of Bombardier Service Bulletin 601R-27-114, excluding Appendix A, Revision C, dated November 9, 2004. The actions in paragraph (h) of this AD must be accomplished prior to or concurrently with the actions in paragraph (i) of this AD.

Install Skew Detection System (SDS) and Air Data Computer

(i) Within 30 months after the effective date of this AD, but after the actions required by paragraph (h) of this AD have been accomplished: Install the SDS in accordance with paragraphs (i)(1), (i)(2), (i)(3), (i)(4), and (i)(5) of this AD. These actions must be accomplished in the order stated in this paragraph. Accomplishing the actions in paragraphs (h) and (i) of this AD terminates the requirements of paragraphs (f) and (g) (the requirements of AD 98-20-01) of this AD, and the AFM revisions required by those paragraphs may be removed from the AFM.

(1) Install the electrical provisions for the SDS in accordance with the Accomplishment Instructions of Bombardier Service Bulletin 601R-27-115, Revision E, dated October 7, 2004. Although the service bulletin specifies to submit certain information to the manufacturer, this AD does not include that requirement.

(2) Install and activate the SDS in accordance with the Accomplishment Instructions of Bombardier Service Bulletin 601R-27-116, Revision C, dated August 26, 2004; and install a new or retrofitted air data computer (ADC) in accordance with the Accomplishment Instructions of Bombardier Service Bulletin 601R-34-128, Revision C, dated March 28, 2005. Although the service bulletin specifies to submit certain information to the manufacturer, this AD does not include that requirement.

(3) Install new airspeed limitation placards in accordance with the Accomplishment Instructions of Bombardier Service Bulletin 601R-11-080, Revision A, dated October 11, 2005.

(4) Revise the Limitations section of the AFM to include the information specified in Canadair Temporary Revision (TR) RJ/128, dated November 28, 2003, to Canadair Regional Jet AFM, CSP A-012, to include revised VFE values, and a new SDS and crosswind-related limitation for take-off flap selection.

Note 2: The action in paragraph (i)(4) of this AD may be accomplished by inserting a copy of Canadair TR RJ/128 in the AFM. When this temporary revision has been incorporated into the general revisions of the AFM, the general revisions may be inserted in the AFM, provided the information contained in the general revision is identical to that specified in Canadair TR RJ/128.

(5) For airplanes on which decals stating "Visually inspect flaps prior to departure" have been installed in production or in accordance with an alternative method of compliance (AMOC) granted by the FAA: After the installation required by paragraphs (h)(1), (i)(1), (i)(2), (i)(3), and (i)(4) of this AD, remove the decals in accordance with Part A of Bombardier Service Bulletin 601R-27-111, dated March 6, 2000. Although the service bulletin specifies to submit certain information to the manufacturer, this AD does not include that requirement.

Actions Accomplished in Accordance With Previous Revisions of Service Bulletins

(j) Actions accomplished before the effective date of this AD according to the service bulletins identified in paragraphs (j)(1), (j)(2), (j)(3), and (j)(4) of this AD, are considered acceptable for compliance with the corresponding action specified in paragraphs (h) and (i) of this AD.

(1) For the action in paragraph (h) of this AD: Bombardier Service Bulletin 601R-27-114, dated March 22, 2002; Revision A, dated November 6, 2002; or Revision B, dated December 4, 2003.

(2) For the actions in paragraph (i)(1) of this AD: Bombardier Service Bulletin 601R-27-115, Revision D, dated March 18, 2004.

(3) For the actions in paragraph (i)(2) of this AD: Bombardier Service Bulletin 601R-27-116, dated July 23, 2003; Revision A, dated September 10, 2003; or Revision B, dated February 2, 2004; and Bombardier Service Bulletin 601R-34-128, Revision B, dated September 7, 2001.

(4) For the actions in paragraph (i)(3) of this AD: Bombardier Service Bulletin 601R-11-080, dated November 28, 2003.

Parts Installation

(k)(1) As of 12 months after the effective date of this AD, no person may install on any airplane a flap actuator with part numbers (P/Ns) 601R93103-5, -6, -7, -8, -9, -10, -11, -12, -17, and -18 (Vendor P/Ns 853D100-7, -8, -9, -10, -11, -12, -13, -14, -17 and -18).

(2) As of 12 months after the effective date of this AD, no person may install on any airplane a flap actuator with P/Ns 601R93104-5, -6, -7, -8, -9 and -10 (Vendor P/Ns 854D100-7, -8, -9, -10, -11 and -12).

(3) As of 30 months after the effective date of this AD, no person may install on any airplane an ADC with P/Ns 822-0372-140 and -143.

AMOCs

(l)(1) The Manager, New York Aircraft Certification Office (ACO), FAA, has the authority to approve AMOCs for this AD, if requested in accordance with the procedures found in 14 CFR 39.19.

(2) Before using any AMOC approved in accordance with § 39.19 on any airplane to which the AMOC applies, notify the appropriate principal inspector in the FAA Flight Standards Certificate Holding District Office.

(3) AMOCs approved previously according to AD 98-20-01, are approved as AMOCs for the corresponding provisions of this AD.

Related Information

(m) Canadian airworthiness directive CF-1998-14R4, dated June 1, 2004, also addresses the subject of this AD.

Material Incorporated by Reference

(n) You must use the service information listed in Table 1 of this AD, as applicable, to perform the actions that are required by this AD, unless the AD specifies otherwise. The Director of the Federal Register approved the incorporation by reference of these documents in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. Contact Bombardier, Inc., Canadair, Aerospace Group, P.O. Box 6087, Station Centre-ville, Montreal, Quebec H3C 3G9, Canada, for a copy of this service information. You may review copies at the Docket Management Facility, U.S. Department of Transportation, 400 Seventh Street, SW., room PL-401, Nassif Building, Washington, DC; on the Internet at <http://dms.dot.gov>; or at the National Archives and Records Administration (NARA). For

information on the availability of this material at the NARA, call (202) 741-6030, or go to http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html.

TABLE 1.—MATERIAL INCORPORATED BY REFERENCE

Service information	Revision level	Date
Bombardier Service Bulletin 601R-11-080	A	October 11, 2005.
Bombardier Service Bulletin 601R-27-111	Original	March 6, 2000.
Bombardier Service Bulletin 601R-27-114, excluding Appendix A	C	November 9, 2004.
Bombardier Service Bulletin 601R-27-115	E	October 7, 2004.
Bombardier Service Bulletin 601R-27-116	C	August 26, 2004.
Bombardier Service Bulletin 601R-34-128	C	March 28, 2005.
Canadair Temporary Revision RJ/128 to the Canadair Regional Jet Airplane Flight Manual, CSP A-012.	Original	November 28, 2003.

Issued in Renton, Washington, on June 5, 2006.

Ali Bahrami,

Manager, Transport Airplane Directorate, Aircraft Certification Service.

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