

**DEPARTMENT OF TRANSPORTATION****Federal Aviation Administration****14 CFR Part 39**

[Docket No. 2002–NM–311–AD]

RIN 2120–AA64

**Airworthiness Directives; Bombardier Model DHC–8–400, –401, and –402 Airplanes****AGENCY:** Federal Aviation Administration, DOT.**ACTION:** Notice of proposed rulemaking (NPRM).

**SUMMARY:** This document proposes the adoption of a new airworthiness directive (AD) that is applicable to certain Bombardier Model DHC–8–400, –401, and –402 airplanes. This proposal would require replacing certain flight guidance modules with improved modules, and certain flight control electronic control units with improved units. This action is necessary to prevent loss of the autopilot or manual pitch trim, which may increase the workload of the flightcrew and, under certain conditions, could result in reduced controllability of the airplane. This action is intended to address the identified unsafe condition.

**DATES:** Comments must be received by December 18, 2003.

**ADDRESSES:** Submit comments in triplicate to the Federal Aviation Administration (FAA), Transport Airplane Directorate, ANM–114, Attention: Rules Docket No. 2002–NM–311–AD, 1601 Lind Avenue, SW., Renton, Washington 98055–4056. Comments may be inspected at this location between 9 a.m. and 3 p.m., Monday through Friday, except Federal holidays. Comments may be submitted via fax to (425) 227–1232. Comments may also be sent via the Internet using the following address: *9-anm-nprmcomment@faa.gov*. Comments sent via fax or the Internet must contain “Docket No. 2002–NM–311–AD” in the subject line and need not be submitted in triplicate. Comments sent via the Internet as attached electronic files must be formatted in Microsoft Word 97 or 2000 or ASCII text.

The service information referenced in the proposed rule may be obtained from Bombardier, Inc., Bombardier Regional Aircraft Division, 123 Garratt Boulevard, Downsview, Ontario M3K 1Y5, Canada. This information may be examined at the FAA, Transport Airplane Directorate, 1601 Lind Avenue, SW., Renton, Washington; or at the FAA, New York Aircraft Certification Office,

10 Fifth Street, Third Floor, Valley Stream, New York.

**FOR FURTHER INFORMATION CONTACT:** Ezra Sassoon, Aerospace Engineer, Systems and Flight Test Branch, ANE–172, FAA, New York Aircraft Certification Office, 10 Fifth Street, Third Floor, Valley Stream, New York 11581; telephone (516) 256–7520; fax (516) 568–2716.

**SUPPLEMENTARY INFORMATION:****Comments Invited**

Interested persons are invited to participate in the making of the proposed rule by submitting such written data, views, or arguments as they may desire. Communications shall identify the Rules Docket number and be submitted in triplicate to the address specified above. All communications received on or before the closing date for comments, specified above, will be considered before taking action on the proposed rule. The proposals contained in this action may be changed in light of the comments received.

Submit comments using the following format:

- Organize comments issue-by-issue. For example, discuss a request to change the compliance time and a request to change the service bulletin reference as two separate issues.
- For each issue, state what specific change to the proposed AD is being requested.
- Include justification (*e.g.*, reasons or data) for each request.

Comments are specifically invited on the overall regulatory, economic, environmental, and energy aspects of the proposed rule. All comments submitted will be available, both before and after the closing date for comments, in the Rules Docket for examination by interested persons. A report summarizing each FAA-public contact concerned with the substance of this proposal will be filed in the Rules Docket.

Commenters wishing the FAA to acknowledge receipt of their comments submitted in response to this action must submit a self-addressed, stamped postcard on which the following statement is made: “Comments to Docket Number 2002–NM–311–AD.” The postcard will be date stamped and returned to the commenter.

**Availability of NPRMs**

Any person may obtain a copy of this NPRM by submitting a request to the FAA, Transport Airplane Directorate, ANM–114, Attention: Rules Docket No. 2002–NM–311–AD, 1601 Lind Avenue, SW., Renton, Washington 98055–4056.

**Discussion**

Transport Canada Civil Aviation (TCCA), which is the airworthiness authority for Canada, notified the FAA that two unsafe conditions may exist on certain Bombardier Model DHC–8–400, –401, and –402 airplanes. TCCA advises that, on certain airplanes, a malfunction in the pitch trim system may occur due to asynchrony between the autopilot pitch trim commands of flight guidance modules (FGMs) 1 and 2. This asynchrony is due to noise at frequencies close to the sampling rate in the signal on the FGM’s acquisition channel. This could result in loss of the autopilot pitch trim, which would require the flightcrew to disengage the autopilot and fly the airplane manually.

TCCA also advises that, on certain airplanes, a malfunction in the manual pitch trim system may occur in which the monitoring/modeling circuitry in the flight control electronic control units (FCECU) disables the pitch trim system. This may occur due to unidirectional cycling and rapid reversals of pitch trim commands by the flightcrew. This results in a nuisance warning of pitch trim runaway or loss of the pitch trim system.

These two conditions, if not corrected, could significantly increase the workload of the flightcrew, and in adverse conditions, could result in reduced controllability of the airplane.

**Explanation of Relevant Service Information**

Bombardier has issued Service Bulletin 84–22–04, Revision “B,” dated April 17, 2002, which describes procedures for replacing FGM1 and FGM2 with improved FGMs, and performing a Return-to-Service procedure. That service bulletin refers to Thales Service Bulletin C12429A–22–003, dated November 29, 2001, as an additional source of service information for modifying the FGMs to the improved configuration. The Thales service bulletin is included in the Bombardier service bulletin.

Bombardier has also issued Service Bulletin 84–27–14, Revision “A,” dated April 2, 2002, which describes procedures for replacing FCECUs with improved FCECUs. That service bulletin refers to Parker Service Bulletin 398500–27–235, dated January 9, 2002, as an additional source of service information for modifying the FCECUs to the improved configuration. The Parker service bulletin is included in the Bombardier service bulletin.

Accomplishment of the actions specified in the applicable Bombardier service bulletin is intended to