

that it has invested a significant amount of time and resources to resolve the root cause of cracking of the windshields in service. The commenter also states that it has worked closely with the airplane manufacturer, operators, and regulatory agencies worldwide to resolve the cracking of the windshields in an expeditious manner. The commenter strongly believes that the issuance of an NPRM is unwarranted in light of its efforts, and the fact that the NPRM only affects, at most, 18 windshields. The commenter believes that these 18 windshields will be modified or replaced no later than December 31, 2002.

The FAA, while applauding the windshield manufacturer's efforts to resolve the cracking of the ply of the windshields, does not agree that the NPRM should be withdrawn. In issuing an AD, our intent is not to penalize the original equipment manufacturer, but to act in the interest of safety, and to ensure that all applicable airplanes conform to the corrective actions. While it is understandable that a manufacturer would like to minimize any adverse implications regarding the safety of its products, we reiterate that the purpose of an AD is to correct an identified unsafe condition in an airplane, regardless of where it is or what it is caused by. In essence, the AD serves to protect the flying public from the consequences of the unsafe condition. The AD also serves to protect the manufacturer from the liability that would be faced should the unsafe condition not be corrected. Until an AD is issued, there is no legal basis for requiring U.S. operators to comply with those actions. The AD is the vehicle for ensuring, by law, that all affected operators perform the necessary actions that will address the identified unsafe condition. In light of this, we have determined that this AD is appropriate and warranted.

Two commenters note that the "Background Information" section in the preamble of the NPRM states, "Until a new design for the main windshield can be developed by the manufacturer and approved by the FAA, operators have requested procedures for modifying the existing windshields to address the identified unsafe condition and to improve service performance." The commenters state that such wording implies that a new design for the windshield does not exist.

The commenters point out that redesigned windshields, Bombardier part numbers (P/N) 601R33033-13 and -14 (PPG P/N NP139321-9 and -10 for spares), are already available and have been in service for some time on

recently manufactured airplanes. According to one of the commenters, those windshields incorporated certain changes that would minimize the potential for structural ply fracture, and that, since their introduction, over 525 have been installed on in-service airplanes. One of the commenters believes that the identified unsafe condition has been successfully addressed by the current production configuration (*i.e.*, main windshield units having Bombardier P/N 601R33033-13 or -14) and with windows currently in service on which Bombardier Service Bulletin 601R-56-004, dated August 16, 2001 (which is referenced in the NPRM as the appropriate source of service information for the proposed actions), has been done.

From these comments, we infer that the commenters are requesting that the NPRM be withdrawn. We do not agree. As discussed previously, this AD is the vehicle for ensuring, by law, that all affected operators perform the necessary actions that will address the identified unsafe condition.

The commenters are correct that main windshield units having Bombardier P/N 601R33033-13 or -14 have been in service for some time. Transport Canada Civil Aviation (TCCA), which is the airworthiness authority for Canada, has approved Bombardier Service Bulletin 601R-56-003, Revision B, dated July 20, 2001, which describes procedures for replacing the main windshield units having P/N 601R33033-9 and -10 with units having Bombardier P/N 601R33033-13 or -14. However, the service bulletin does not specify Bombardier P/N 601R33033-13 or -14 as replacement parts for windshields having P/Ns 601R33033-1, -2, -5, and -6. In addition, Canadian airworthiness directive CF-2001-35R1, dated September 27, 2001, which this AD parallels, does not mandate Service Bulletin 601R-56-003. We also find that it will be less costly for operators to do the actions required by this AD than the replacement specified in Service Bulletin 601R-56-003.

In light of these findings, we have determined that this AD is appropriate and warranted. However, under the provisions of paragraph (b) of the final rule, we may consider requests for approval of an alternative method of compliance if sufficient data are submitted to substantiate that such a design change would provide an acceptable level of safety.

#### **Request To Delete Reference to Unsafe Condition**

One commenter requests that all references to "unsafe condition" in the NPRM be deleted. The commenter states that the main windshield, pre-mod configuration, on Model CL-600-2B19 (Regional Jet series 100 & 400) airplanes does not exhibit an unsafe condition. The commenter also states that any unsafe condition would result from the flight deck crew being required to operate the airplane in a non-standard manner, not from the windshield itself. The commenter is concerned that the reference to an "unsafe condition" will create a negative impression about the Bombardier regional jets.

We do not agree. The individual ply of the windshields on the affected Model CL-600-2B19 (Regional Jet series 100 & 400) airplanes has cracked at an unacceptable rate. When such cracking has occurred, abnormal procedures specified in the airplane flight manual and/or an emergency descent of the airplane have been accomplished at an excessive frequency, which exposed the airplane and its occupants to unacceptable risks. Furthermore, of the significant number of single-ply fractures that have occurred, there was one reported case of the First Officer's windshield cracking (inner ply) during cruise flight and pieces of glass falling on the flightcrew. In addition, TCCA issued Canadian airworthiness directive CF-2001-35R1, dated September 27, 2001, in order to reduce the risk exposure that resulted from airplane emergency descent performed as a result of the cracking of the windshield ply. TCCA issued that airworthiness directive in order to ensure the continued airworthiness of these airplanes in Canada. As such, we have determined that, while cracking of the windshield may not result in loss of pressurization of the airplane, if the flightcrew follows necessary procedures, the need to predictably and routinely rely on those procedures, together with the risk of injury to the flightcrew, presents an unsafe condition.

Two commenters do not agree with the statement of unsafe condition specified in the NPRM (*i.e.*, to prevent failure of the main windshields due to stress-related cracking, which could cause cabin depressurization and emergency descent, and adversely affect continued safe flight of the airplane). The commenters state that the results of fail-safe testing demonstrate the structural integrity of the windshield with all three plies fractured. The commenters conclude that, while a ply