

equivalent service bulletins (discussed below), include the proposed wiring modification. It asserts that, if new wiper motor/converters are installed, accomplishing the airplane wiring modification prior to or concurrent with the wiper motor/converter replacement is redundant and does not add to the safety of the airplane. The airplane manufacturer also states that it will revise Boeing Service Bulletins 737-30-1054 and 737-30-1055 to remove the recommendation to accomplish the airplane wiring modification prior to or concurrent with the wiper motor/converter replacement.

The FAA agrees. We find that replacement of the new wiper motor/converters, without referencing the concurrent requirements of paragraph (a) of the proposed AD, will correct the root cause of the wiper motor stalls. Therefore, we have removed the requirement to accomplish the airplane wiring modification specified in paragraph (b) of this final rule (paragraph (a) of the proposed AD) prior to or concurrent with the replacement specified in paragraphs (c) and (d) of this final rule (paragraph (b) of the proposed AD).

Request To Mandate Optional Replacement

One commenter requests that we mandate the proposed optional replacement of the windshield wiper motor/converters provided in paragraph (b) of the proposed AD, because the proposed wiring modification and wiper blade load reduction specified in paragraph (a) of the proposed AD would only make the flight crew's visibility worse due to wiper blade load reduction. This commenter also requested an extension of compliance time to allow adequate time to produce enough replacements. The other commenter, the airplane manufacturer, requests that we allow operators to accomplish either the modification or replacement.

We partially agree with the commenters' requests. We do not agree that the optional replacement should be mandated. While we do agree that replacing the windshield wiper motor/converters is preferable to modifying the wiring to the windshield wiper motor, we have determined that the required modification will provide an acceptable level of safety for the affected airplanes. Therefore, we have changed this final rule to add a new paragraph (a), and re-lettered subsequent paragraphs accordingly, to clarify that operators have the option of accomplishing either the modification or replacement.

Although we do not agree to mandate the replacement, we do agree that the compliance time of this final rule for accomplishing either the modification or replacement may be extended. The wiper motor/converter manufacturer has confirmed that 36 months will allow it sufficient time to manufacture/refurbish motor/converters in the new configuration, provided operators order the motor/converters in a timely manner after the effective date of this final rule. We have determined that a compliance time of 36 months will not adversely affect safety and will ensure enough time for production of new motor/converters and enable operators to comply using the preferred method. We have revised this final rule accordingly.

Request To Reference Additional Service Information

Both commenters request that Boeing Service Bulletin 737-30-1055, Revision 1, dated March 6, 2003, which describes procedures for replacement of the wiper motor/converters for Model 737-400 and "500 series airplanes equipped with brushless windshield wiper motor/converters, be added to the proposed AD for accomplishing the optional replacement for those airplanes. Both commenters further point out that this service bulletin was not included in the proposed AD.

We agree. Since the issuance of the proposed AD, we have reviewed and approved Revision 1 of Boeing Service Bulletins 737-30-1054 and 737-30-1055, both dated March 6, 2003, which describe procedures for the replacement of the wiper motor/converters. The proposed AD referenced the original issue of Boeing Service Bulletin 737-30-1054 as the appropriate source of service information for accomplishment of the replacement for Model 737-600, -700, and -800 series airplanes. The procedures specified in Revision 1 are essentially similar to those in the original issue of the service bulletins. We have changed this final rule to reference Revision 1 of those service bulletins as the appropriate sources of service information for the replacement. We have also added paragraph (d) to this final rule to add the replacement for Model 737-400 and -500 series airplanes, and added new paragraphs (e) and (f) to this final rule to give credit to operators for replacements accomplished before the effective date of this AD per the original issue of Boeing Service Bulletins 737-30-1054 and 737-30-1055. Replacement, accomplished after the effective date of this AD, shall be done in accordance with Boeing Service Bulletin 737-30-1055, Revision 1, dated March 6, 2003.

Request To Remove References to Windshield Wiper Blade Flutter

The airplane manufacturer also states that Boeing Service Bulletin 737-30-1055 will be revised to state that it corrects the wiper stalling problem, not the wiper blade flutter as described in the original issue of Boeing Service Bulletin 737-30-1054. The airplane manufacturer asserts that the wiper blade flutter was a Boeing production issue, neither affecting safe operation of the system nor prevalent in the fleet.

From this statement, we infer that the airplane manufacturer is requesting that we remove references to loss of wiper blade load leading to flutter of the wiper arm from the proposed AD. We agree and have revised this final rule accordingly.

Request To Clarify Description of Cause of Unsafe Condition

The airplane manufacturer requests that we clarify the cause of the reported incidents stated in the Discussion section of the proposed AD. The airplane manufacturer explains that further investigation of the windshield wiper stalling problem revealed the root cause of the stalling to be inadequate backlash or clearance between the gears inside the wiper motor's converter, causing large internal losses due to friction between the gears, not the result of inadequate torque caused by insufficient electrical current as described in the proposed AD.

In light of the results of the additional investigation described previously, we agree that the cause of the wiper motor/converter stalling could be more accurately described. However, the Discussion section is not repeated in a final rule, so no change to this final rule is necessary in this regard.

Request To Revise the Description of Location of the Modification

The other commenter requests that we revise the proposed AD to exclude references to the "nose wheel well areas." The commenter points out that Boeing Alert Service Bulletin 737-30A1052 does not specify a wiring modification in the those areas. We agree and have revised this final rule to remove references to the nose wheel well areas.

Request To Allow Designated Engineering Representative (DER) Approval

The airplane manufacturer requests that certification of the new wiper motor/converter installed on airplanes without the wiring modification or production equivalent be accomplished by DER approval of revised Boeing