

and ball nut could potentially lead to a flap system jam. A Temporary Revision (TR) has been made to the Bombardier CL-600-2B19 Maintenance Requirements Manual (MRM), Appendix A, "Certification Maintenance Requirements" (CMR) to ensure that unacceptable wear on the nut and ball screw is detected and corrected.

Revision 1 of this directive introduces a new phase-in schedule for performing a new CMR task C27-50-300-01.

The unsafe condition is a flap system jam, which could result in a skewed flap condition with consequent reduced controllability of the airplane.

Actions and Compliance

(f) Unless already done, within 30 days after the effective date of this AD, revise the Airworthiness Requirements Section of the Bombardier CL-600-2B19 MRM to include the information in Bombardier TR 2A-41, dated November 7, 2007, to Appendix A of the Airworthiness Requirements, Part 2, of the Bombardier CL-600-2B19 MRM. The initial compliance with the new CMR task must be done within 500 flight hours after the effective date of this AD.

Note 2: The actions required by paragraph (f) of this AD may be done by inserting a copy of Bombardier TR 2A-41, dated November 7, 2007, to Appendix A of the Airworthiness Requirements, Part 2, of the Bombardier CL-600-2B19 MRM. When this TR has been included in general revisions of the MRM, the TR may be removed from the MRM, provided the relevant information in the general revision is identical to that in Bombardier TR 2A-41, dated November 7, 2007.

FAA AD Differences

Note 3: This AD differs from the MCAI and/or service information as follows: No differences.

Other FAA AD Provisions

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

(1) 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: Fabio Buttitta, Aerospace Engineer, Airframe and Mechanical Systems Branch, ANE-171, FAA, New York ACO, 1600 Stewart Avenue, Suite 410, Westbury, New York 11590; telephone (516) 228-7303; 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.

(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

(h) Refer to MCAI Canadian Airworthiness Directive CF-2008-33R1, dated January 9, 2009; and Bombardier TR 2A-41, dated November 7, 2007, to Appendix A of the Airworthiness Requirements, Part 2, of the Bombardier CL-600-2B19 MRM; for related information.

Material Incorporated by Reference

(i) You must use Bombardier Temporary Revision 2A-41, dated November 7, 2007, to Appendix A of the Airworthiness Requirements, Part 2, of the Bombardier CL-600-2B19 Maintenance Requirements Manual, to do the actions required by this AD, unless the AD specifies otherwise.

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

(2) 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; Internet <http://www.bombardier.com>.

(3) 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.

(4) 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.

Issued in Renton, Washington, on October 19, 2009.

Ali Bahrami,

Manager, Transport Airplane Directorate, Aircraft Certification Service.

[FR Doc. E9-26296 Filed 11-6-09; 8:45 am]

BILLING CODE 4910-13-P

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2009-0699 Directorate Identifier 2009-CE-042-AD; Amendment 39-16047; AD 2009-21-08]

RIN 2120-AA64

Airworthiness Directives; PIAGGIO AERO INDUSTRIES S.p.A Model PIAGGIO P-180 Airplanes

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

ACTION: Final rule.

SUMMARY: We are adopting a new airworthiness directive (AD) for the products listed above. This AD results from mandatory continuing airworthiness information (MCAI) issued 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:

Some cases of uncommanded steering action were observed, while the steering system was switched off. A leakage in the Steering Select/Bypass Valve, installed in the Steering Manifold, when closed, is suspected to have caused the uncommanded steering.

If left uncorrected, this condition could lead to a potentially dangerous veer along the runway; in fact, according to the Aircraft Flight Manual limitations, the steering system must be in 'off' position during landing and takeoff (in this case when airspeed is higher than 60 knots).

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

DATES: This AD becomes effective December 14, 2009.

On December 14, 2009, the Director of the Federal Register approved the incorporation by reference of certain publications listed in this AD.

ADDRESSES: You may examine the AD docket on the Internet at <http://www.regulations.gov> or in person at Document Management Facility, U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue, SE., Washington, DC 20590.

FOR FURTHER INFORMATION CONTACT: Sarjapur Nagarajan, Aerospace Engineer, FAA, Small Airplane Directorate, 901 Locust, Room 301, Kansas City, Missouri 64106; telephone: (816) 329-4145; fax: (816) 329-4090.

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 August 5, 2009 (74 FR 38991). That NPRM proposed to correct an unsafe condition for the specified products. The MCAI states:

Some cases of uncommanded steering action were observed, while the steering system was switched off. A leakage in the Steering Select/Bypass Valve, installed in the Steering Manifold, when closed, is suspected to have caused the uncommanded steering.

If left uncorrected, this condition could lead to a potentially dangerous veer along the runway; in fact, according to the Aircraft Flight Manual limitations, the steering system must be in 'off' position during landing and takeoff (in this case when airspeed is higher than 60 knots). For the reasons stated above, this new AD mandates repetitive inspections for leakage of the Nose Landing Gear steering manifold.

The MCAI requires, if any inspection finds leakage of the steering manifold, the replacement of the steering manifold.

Comments

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

Mr. Carlo Cardu, Piaggio Aero Industries, states that revisions of airplane maintenance manuals (AMM) will be issued. He suggests that the final AD action include a statement that later revisions of AMM is acceptable for compliance with the requirements of the AD.

The FAA does not agree with including the phrase "or later revision" after the referenced service information. The FAA cannot approve and legally reference documents that currently do not exist. When these documents are completed and approved, the FAA can issue an alternative method of compliance if the FAA determines that the incorporation of the procedures provides an acceptable level of safety to the unsafe condition specified in the AD.

We are not changing the final rule AD action as a result of this comment.

Conclusion

We reviewed the available data, including the comment received, and determined that air safety and the public interest require adopting the AD as proposed.

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 FAA policies. Any such differences are highlighted in a NOTE within the AD.

Costs of Compliance

We estimate that this AD will affect 63 products of U.S. registry. We also estimate that it will take about 8 work-hours per product to comply with the basic requirements of this AD. The average labor rate is \$80 per work-hour.

Based on these figures, we estimate the cost of this AD to the U.S. operators to be \$40,320 or \$640 per product.

In addition, we estimate that any necessary follow-on actions will take about 16 work-hours and require parts costing \$0, for a cost of \$1,280 per product. We have no way of determining the number of products that may need these actions.

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 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 Management Facility 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 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 adding the following new AD:

2009-21-08 PIAGGIO AERO INDUSTRIES S.p.A.: Amendment 39-16047; Docket No. FAA-2009-0699; Directorate Identifier 2009-CE-042-AD.

Effective Date

- (a) This airworthiness directive (AD) becomes effective December 14, 2009.

Affected ADs

- (b) None.

Applicability

- (c) This AD applies to Model P-180 airplanes, all serial numbers (S/N), certificated in any category.

Subject

(d) Air Transport Association of America (ATA) Code 32: Landing Gear.

Reason

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

Some cases of uncommanded steering action were observed, while the steering system was switched off. A leakage in the Steering Select/Bypass Valve, installed in the Steering Manifold, when closed, is suspected to have caused the uncommanded steering.

If left uncorrected, this condition could lead to a potentially dangerous veer along the runway; in fact, according to the Aircraft Flight Manual limitations, the steering system must be in "off" position during landing and takeoff (in this case when airspeed is higher than 60 knots). For the reasons stated above, this new AD mandates repetitive inspections for leakage of the Nose Landing Gear steering manifold.

The MCAI requires, if any inspection finds leakage of the steering manifold, the replacement of the steering manifold.

Actions and Compliance

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

(1) Within the next 6 months after December 14, 2009 (the effective date of this AD) or within the next 100 hours time-in-service (TIS) after December 14, 2009 (the effective date of this AD), whichever occurs first, and repetitively thereafter at intervals not to exceed every 165 hours TIS, do a functional test of the nose landing gear (NLG) steering manifold. Follow the accomplishment instructions of PIAGGIO AERO INDUSTRIES S.p.A. Service Bulletin (Mandatory) N. 80-0249 (includes CONFIRMATION SLIP), Rev. 1, dated May 27, 2009.

(2) Upon installation of a NLG steering manifold on any airplane, do a functional test of the NLG steering manifold. Repetitively thereafter at intervals not to exceed every 165 hours TIS, do a functional test of the NLG steering manifold. Follow the accomplishment instructions of PIAGGIO AERO INDUSTRIES S.p.A. Service Bulletin (Mandatory) N. 80-0249 (includes CONFIRMATION SLIP), Rev. 1, dated May 27, 2009.

(3) If during any inspection required in paragraphs (f)(1) and (f)(2) of this AD movement of a NLG steering manifold is

found, using the compliance times in the accomplishment instructions of PIAGGIO AERO INDUSTRIES S.p.A. Service Bulletin (Mandatory) N. 80-0249 (includes CONFIRMATION SLIP), Rev. 1, dated May 27, 2009, replace the NLG steering manifold following (for S/N 1004 through 1104) pages 1 through 8 dated March 1, 2006; 201, 202, 204, and 206 through 216, dated June 16, 2008; 203 and 205, dated March 1, 2006; and 501 through 506, dated March 1, 2006, of PIAGGIO AERO PIAGGIO P.180 AVANTI Maintenance Manual, Report No. 9066, 32-50-00, Revision No. D2, revised June 16, 2008; or (for S/N 1105 and greater) pages 1 through 8, dated June 30, 2005; 201, 202, and 207 through 209, dated December 19, 2008; 203 and 205, dated June 30, 2005; 204, 206, and 210 through 216, dated September 14, 2007; and 501 through 506, dated June 30, 2005, of PIAGGIO AERO PIAGGIO P.180 AVANTI II Maintenance Manual, Report No. 180-MAN-0200-01105, 32-50-00, Revision No. A3, revised December 19, 2008.

FAA AD Differences

Note: This AD differs from the MCAI and/or service information as follows: No differences.

Other FAA AD Provisions

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

(1) *Alternative Methods of Compliance (AMOCs):* The Manager, Standards Office, 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: Sarjapur Nagarajan, Aerospace Engineer, FAA, Small Airplane Directorate, 901 Locust, Room 301, Kansas City, Missouri 64106; telephone: (816) 329-4145; fax: (816) 329-4090. Before using any approved AMOC on any airplane to which the AMOC applies, notify your appropriate principal inspector (PI) in the FAA Flight Standards District Office (FSDO), or lacking a PI, your local FSDO.

(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 (44 U.S.C. 3501 *et seq.*), the Office of Management and Budget (OMB) has approved the information collection requirements and has assigned OMB Control Number 2120-0056.

Related Information

(h) Refer to MCAI EASA AD 2009-0129, dated June 19, 2009; PIAGGIO AERO INDUSTRIES S.p.A. Service Bulletin (Mandatory) N. 80-0249 (includes CONFIRMATION SLIP), Rev. 1, dated May 27, 2009; PIAGGIO AERO PIAGGIO P.180 AVANTI Maintenance Manual, Report No. 9066, 32-50-00, revised June 16, 2008, pages 1 through 8, 201 through 216, and 501 through 506; and PIAGGIO AERO PIAGGIO P.180 AVANTI II Maintenance Manual, Report No. 180-MAN-0200-01105, 32-50-00, revised December 19, 2008, pages 1 through 8, 201 through 216, and 501 through 506, for related information.

Material Incorporated by Reference

(i) You must use the service information specified in Table 1 of this AD to do the actions required by this AD, unless the AD specifies otherwise.

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

(2) For service information identified in this AD, contact Piaggio Aero Industries S.p.a., Via Cibrario, 4-16154 Genoa, Italy; telephone +39 010 06481 741; fax: +39 010 6481 309; Internet: <http://www.piaggioaero.com>, or e-mail: MMicheli@piaggioaero.it.

(3) You may review copies of the service information incorporated by reference for this AD at the FAA, Central Region, Office of the Regional Counsel, 901 Locust, Kansas City, Missouri 64106. For information on the availability of this material at the Central Region, call (816) 329-3768.

(4) You may also review copies of the service information incorporated by reference for this AD 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.

TABLE 1—MATERIAL INCORPORATED BY REFERENCE

| Service information title | Page(s) | Revision | Date |
|--|-------------------------------------|----------------------|------------------------|
| PIAGGIO AERO INDUSTRIES S.p.A. Service Bulletin (Mandatory) N. 80-0249. | 1 through 9 | Rev. 1 | May 27, 2009. |
| PIAGGIO AERO INDUSTRIES S.p.A. Service Bulletin (Mandatory) N. 80-0249. | CONFIRMATION SLIP ... | Rev. 1 | Not Dated. |
| PIAGGIO AERO PIAGGIO P.180 AVANTI Maintenance Manual, Report No. 9066, 32-50-00. | Cover | No. D2 | Revised June 16, 2008. |
| PIAGGIO AERO PIAGGIO P.180 AVANTI Maintenance Manual, Report No. 9066, 32-50-00. | 1 through 8 | Not Applicable | March 1, 2006. |
| PIAGGIO AERO PIAGGIO P.180 AVANTI Maintenance Manual, Report No. 9066, 32-50-00. | 201, 202, 204, and 206 through 216. | Not Applicable | June 16, 2008. |
| PIAGGIO AERO PIAGGIO P.180 AVANTI Maintenance Manual, Report No. 9066, 32-50-00. | 203 and 205 | Not Applicable | March 1, 2006. |

TABLE 1—MATERIAL INCORPORATED BY REFERENCE—Continued

| Service information title | Page(s) | Revision | Date |
|---|--------------------------------|----------------------|----------------------------|
| PIAGGIO AERO PIAGGIO P.180 AVANTI Maintenance Manual, Report No. 9066, 32–50–00. | 501 through 506 | Not Applicable | March 1, 2006. |
| PIAGGIO AERO PIAGGIO P.180 AVANTI II Maintenance Manual, Report No. 180–MAN–0200–01105, 32–50–00. | Cover | No. A3 | Revised December 19, 2008. |
| PIAGGIO AERO PIAGGIO P.180 AVANTI II Maintenance Manual, Report No. 180–MAN–0200–01105, 32–50–00. | 1 through 8 | Not Applicable | June 30, 2005. |
| PIAGGIO AERO PIAGGIO P.180 AVANTI II Maintenance Manual, Report No. 180–MAN–0200–01105, 32–50–00. | 201, 202, and 207 through 209. | Not Applicable | December 19, 2008. |
| PIAGGIO AERO PIAGGIO P.180 AVANTI II Maintenance Manual, Report No. 180–MAN–0200–01105, 32–50–00. | 203 and 205 | Not Applicable | June 30, 2005. |
| PIAGGIO AERO PIAGGIO P.180 AVANTI II Maintenance Manual, Report No. 180–MAN–0200–01105, 32–50–00. | 204, 206, and 210 through 216. | Not Applicable | September 14, 2007. |
| PIAGGIO AERO PIAGGIO P.180 AVANTI II Maintenance Manual, Report No. 180–MAN–0200–01105, 32–50–00. | 501 through 506 | Not Applicable | June 30, 2005. |

Issued in Kansas City, Missouri, on October 7, 2009.
Scott A. Horn,
Acting Manager, Small Airplane Directorate, Aircraft Certification Service.
 [FR Doc. E9–24651 Filed 11–6–09; 8:45 am]
BILLING CODE 4910–13–P

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA–2009–1026; Directorate Identifier 2009–NM–197–AD; Amendment 39–16084; AD 2009–23–10]

RIN 2120–AA64

Airworthiness Directives; Boeing Model 737–300, –400, and –500 Series Airplanes

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

ACTION: Final rule; request for comments.

SUMMARY: The FAA is superseding an existing airworthiness directive (AD) that applies to all Boeing Model 737–300, –400, and –500 series airplanes. The existing AD currently requires inspecting to determine if certain carriage spindles are installed, repetitive inspections for corrosion and indications of corrosion on affected carriage spindles, and if necessary, related investigative and corrective actions. The existing AD also provides optional terminating action. For certain airplanes, this new AD would reinstate the requirements of the existing AD. This AD results from the exclusion of

certain carriage spindles from the requirements of the existing AD, and additional reports of corrosion found on carriage spindles that are located on the outboard trailing edge flaps. We are issuing this AD to detect and correct corrosion of the carriage spindle, which could result in fracture. Fracture of both the inboard and outboard carriage spindles, in the forward ends through the large diameters, on a flap, could adversely affect the airplane’s continued safe flight and landing.

DATES: This AD becomes effective November 24, 2009.

The Director of the Federal Register approved the incorporation by reference of a certain publication listed in the AD as of November 24, 2009.

On August 5, 2008 (73 FR 42259, July 21, 2008), the Director of the Federal Register approved the incorporation by reference of a certain other publication listed in the AD.

We must receive any comments on this AD by December 24, 2009.

ADDRESSES: You may send comments by any of the following methods:

- *Federal eRulemaking Portal:* Go to <http://www.regulations.gov>. Follow the instructions for submitting comments.
- *Fax:* 202–493–2251.
- *Mail:* U.S. Department of Transportation, Docket Operations, M–30, West Building Ground Floor, Room W12–140, 1200 New Jersey Avenue, SE., Washington, DC 20590.
- *Hand Delivery:* U.S. Department of Transportation, Docket Operations, M–30, West Building Ground Floor, Room W12–140, 1200 New Jersey Avenue, SE., Washington, DC 20590, between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

For service information identified in this AD, contact Boeing Commercial Airplanes, Attention: Data & Services Management, P.O. Box 3707, MC 2H–65, Seattle, Washington 98124–2207; telephone 206–544–5000, extension 1, fax 206–766–5680; e-mail me.boecom@boeing.com; Internet <https://www.myboeingfleet.com>.

Examining the AD Docket

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

FOR FURTHER INFORMATION CONTACT: Nancy Marsh, Aerospace Engineer, Airframe Branch, ANM–120S, FAA, Seattle Aircraft Certification Office, 1601 Lind Avenue, SW., Renton, Washington 98057–3356; telephone (425) 917–6440; fax (425) 917–6590.

SUPPLEMENTARY INFORMATION:

Discussion

On July 10, 2008, we issued AD 2008–15–05, amendment 39–15617 (73 FR 42259, July 21, 2008). That AD applies to all Boeing Model 737–300, –400, and –500 series airplanes. That AD requires inspecting to determine if certain carriage spindles are installed, repetitive inspections for corrosion and indications of corrosion on affected carriage spindles, and if necessary,