

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

[Docket No. FAA-2010-0803; Directorate Identifier 2010-NM-124-AD; Amendment 39-16655; AD 2011-08-05]

RIN 2120-AA64

Airworthiness Directives; Airbus Model A310 Series Airplanes; and Model A300 B4-600, A300 B4-600R, A300 F4-600R Series Airplanes, and Model A300 C4-605R Variant F Airplanes (Collectively Called A300-600 Series 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) originated 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:

The ball screw nut assemblies of the first 70 Trimmable Horizontal Stabilizer Actuators (THSA) manufactured by Goodrich were fitted with an upper attachment gimbal having a thickness of 58 mm (2.28 in), which is different from the design of the final production standard. The gimbal installed on the subsequent THSAs (final production standard) is more robust, having a thickness of 70mm (2.76 in).

During the fatigue life demonstration of the THSA upper attachment primary load path elements, only a gimbal having a thickness of 70mm (2.76 in) was used. Thereafter, no additional justification work to demonstrate the robustness of the upper attachment fitted with a gimbal of 58 mm was accomplished. In case of failure of this gimbal, the THSA upper attachment primary load path would be lost and the THSA upper attachment secondary load path would engage.

Because the upper attachment secondary load path will only withstand the loads for a limited period of time, the condition where it would be engaged and not detected could lead to failure of the secondary load path, which would likely result in loss of control of the aeroplane.

* * * * *

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

DATES: This AD becomes effective May 26, 2011.

The Director of the Federal Register approved the incorporation by reference of certain publications listed in this AD as of May 26, 2011.

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

FOR FURTHER INFORMATION CONTACT: Dan Rodina, Aerospace Engineer, International Branch, ANM-116, Transport Airplane Directorate, FAA, 1601 Lind Avenue, SW., Renton, Washington 98057-3356; telephone (425) 227-2125; fax (425) 227-1149.

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 23, 2010 (75 FR 51698). That NPRM proposed to correct an unsafe condition for the specified products. The MCAI states:

The ball screw nut assemblies of the first 70 Trimmable Horizontal Stabilizer Actuators (THSA) manufactured by Goodrich were fitted with an upper attachment gimbal having a thickness of 58 mm (2.28 in), which is different from the design of the final production standard. The gimbal installed on the subsequent THSAs (final production standard) is more robust, having a thickness of 70mm (2.76 in).

During the fatigue life demonstration of the THSA upper attachment primary load path elements, only a gimbal having a thickness of 70mm (2.76 in) was used. Thereafter, no additional justification work to demonstrate the robustness of the upper attachment fitted with a gimbal of 58 mm was accomplished.

In case of failure of this gimbal, the THSA upper attachment primary load path would be lost and the THSA upper attachment secondary load path would engage.

Because the upper attachment secondary load path will only withstand the loads for a limited period of time, the condition where it would be engaged and not detected could lead to failure of the secondary load path, which would likely result in loss of control of the aeroplane.

As the affected ball screw nut assemblies (including the gimbal) could have been moved from one THSA to another during maintenance operation and because the change from the old design to the final production standard design is not identified through a dedicated THSA Part Number, a gimbal with thickness of 58 mm (2.28 in) can be fitted on any A310 or A300-600 aeroplane.

For the reasons described above, this AD requires the identification of the THSA which have a 58 mm (2.28 in) gimbal installed, repetitive [general visual] inspections to check whether there is engagement of the secondary load path and, depending on findings, associated corrective action(s).

Corrective actions include contacting Airbus for repair instructions and doing the repair. You may obtain further information by examining the MCAI in the AD docket.

Comments

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

Request To Add Notation to Tolerance Measurements

FedEx requested that we add the “+/-” notation to the tolerance measurements in paragraphs (g)(1) and (g)(2) of the proposed NPRM.

We verified that the NPRM published in the **Federal Register** includes those notations, as does this final rule. No change has been made to the AD in this regard.

Request for Terminating Action

FedEx requested that we consider terminating the repetitive inspections if the THSA gimbal is “thick” (70mm (2.75 in.) +/- 5mm (0.20 in)). FedEx stated that when they removed “thin” (58 mm (2.28 in.)) THSA gimbals from four of their airplanes, they replaced them with “thick” gimbals. FedEx also stated that Airbus Mandatory Service Bulletins A310-27A2104 and A300-27A6067, both Revision 01, both dated May 12, 2010, do not include a terminating action for the repetitive inspections when the “thick” THSA gimbal is installed.

We agree that the repetitive inspections need to be terminated when a “thick” THSA gimbal is installed. Paragraph (i) has been added to this AD accordingly. Also, the Cost of Compliance paragraph has been updated to include the on-condition cost of replacing the gimbal.

Request for Change of Compliance Time

FedEx and UPS requested that we change the interval of the repetitive inspections to 130 flight cycles, 650 flight hours, or 6 months, whichever occurs later. FedEx stated that they are unaware of any failures of the THSA primary load path on the A300-600, A310-200, or A310-300 airplanes. UPS stated that they do a detailed visual inspection of the THSA every 30 months, and have not experienced a single instance of primary load path failure. FedEx stated that since the FAA mandates inspections of these THSA on a regular basis, and FedEx has never experienced a primary load path failure, the compliance time for the repetitive inspections should be extended.

We disagree. We are not currently in a position to assess the robustness of the

primary load path of the THSA fitted with a “thin” gimbal. Without more data on the robustness of the THSA primary load path, we can only rely on the THSA secondary load path (SLP). Tests of the THSA SLP demonstrated that an engaged SLP had a low durability. The inspection interval was determined from the THSA SLP test results. As it was not possible to determine if the wear rate was mainly driven by the flight cycles or by the flight hours, it was decided to use a double compliance time for the inspection threshold and interval. No change has been made to the AD in this regard. However, operators may request an alternative method of compliance (AMOC) in accordance with the requirements of paragraph (m) of this AD.

Request To Include Latest Revision of Service Information

UPS requested that we include the latest revision of the service information in this AD.

We agree. Airbus has issued Mandatory Service Bulletins A310–27A2104 and A300–27A6067, both Revision 02, both including Appendix 01, both dated October 18, 2010. These service bulletins were revised for minor changes such as deleting THS zeroing in job set-up and deleting the THSA functional test in close-up. Changes have been made to reference Airbus Mandatory Service Bulletins A310–27A2104 and A300–27A6067, both Revision 02, both including Appendix 01, both dated October 18, 2010. Paragraph (j) of this AD has also been revised to give credit for Airbus Mandatory Service Bulletins A310–27A2104 and A300–27A6067, both Revision 01, both dated May 12, 2010.

Request To Exempt Certain THSAs From Inspections

UPS requested that inspections be exempt on any THSAs outside the first 70 serial number range provided that the THSAs have not been repaired, reworked or overhauled. UPS stated that since those were the oldest THSAs, they most likely have been removed due to the existing THSA life limit. UPS stated that none of these THSAs were delivered on UPS airplanes. Additionally, UPS stated that the only way this suspect gimbal could be on another unit is if it was swapped from one unit to another in the shop.

We disagree with excluding certain THSAs from the inspection required in this AD. It is essential that all the fleet is inspected. Airbus could not determine precisely that the affected THSAs were conclusively on the first 70 airplanes manufactured, and it is likely

that additional THSAs may have the same configuration. Also, once in service, some THSAs may have been swapped from one airplane to another and reliable documentation for the equipment swapping is not always available. No change has been made to the AD in this regard.

Request To Re-Identify Compliant THSAs

UPS requested a requirement to re-identify the compliant THSAs. UPS stated that without the requested requirement it is difficult to ensure continued compliance, especially dealing with spares, loans, or even new purchases.

We disagree. Although there is presently no requirement to re-identify the compliant THSAs, compliance is maintained by the warning introduced in the aircraft maintenance manual. The warning states that “before installation of the THS Actuator, make sure that the gimbal is not 58mm +/– 5mm.” No change has been made to the AD in this regard.

Conclusion

We reviewed the available data, including the comments received, and determined that air safety and the public interest require adopting the AD with the changes described previously. We determined that these changes will not increase the economic burden on any operator or increase the scope of the AD.

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

Costs of Compliance

We estimate that this AD will affect 170 products of U.S. registry. We also estimate that it will take about 2 work-hours per product to comply with the basic requirements of this AD. The average labor rate is \$85 per work-hour. Based on these figures, we estimate the cost of this AD to the U.S. operators to be \$28,900, or \$170 per product.

In addition, we estimate that any necessary follow-on actions would take about 60 work-hours and require parts costing \$50,000, for a cost of \$55,100 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 the 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 Operations office 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 Operations 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:

2011-08-05 Airbus: Amendment 39-16655. Docket No. FAA-2010-0803; Directorate Identifier 2010-NM-124-AD.

Effective Date

(a) This airworthiness directive (AD) becomes effective May 26, 2011.

Affected ADs

(b) None.

Applicability

(c) This AD applies to Airbus Model A300 B4-601, B4-603, B4-620, B4-622, B4-605R, B4-622R, F4-605R, and F4-622R airplanes; Model A300 C4-605R Variant F airplanes; and Model A310-203, -204, -221, -222, -304, -322, -324, and -325 airplanes; certificated in any category, all certified models, all manufacturer serial numbers.

Subject

(d) Air Transport Association (ATA) of America Code 27: Flight controls.

Reason

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

The ball screw nut assemblies of the first 70 Trimmable Horizontal Stabilizer Actuators (THSA) manufactured by Goodrich were fitted with an upper attachment gimbal having a thickness of 58 mm (2.28 in.), which is different from the design of the final production standard. The gimbal installed on the subsequent THSAs (final production standard) is more robust, having a thickness of 70mm (2.76 in).

During the fatigue life demonstration of the THSA upper attachment primary load path elements, only a gimbal having a thickness of 70mm (2.76 in) was used. Thereafter, no additional justification work to demonstrate the robustness of the upper attachment fitted with a gimbal of 58 mm was accomplished.

In case of failure of this gimbal, the THSA upper attachment primary load path would be lost and the THSA upper attachment secondary load path would engage.

Because the upper attachment secondary load path will only withstand the loads for a limited period of time, the condition where it would be engaged and not detected could lead to failure of the secondary load path, which would likely result in loss of control of the aeroplane.

* * * * *

Compliance

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

Actions

(g) Within 130 flight cycles or 650 flight hours after the effective date of this AD, whichever occurs first, measure the thickness of the THSA upper attachment gimbal, in accordance with the Accomplishment Instructions of Airbus Mandatory Service Bulletin A300-27A6067, Revision 02, dated October 18, 2010 (for Model A300-600 series airplanes); or A310-27A2104, Revision 02, dated October 18, 2010 (for Model A310 series airplanes).

(1) If, during the measurement required by paragraph (g) of this AD, the gimbal thickness is 58 mm (2.28 in.) +/- 5 mm (0.20 in.),

before further flight, do a general visual inspection of the THSA upper attachment to determine if the THSA upper attachment secondary load path is engaged, in accordance with the Accomplishment Instructions of Airbus Mandatory Service Bulletin A300-27A6067, Revision 02, dated October 18, 2010 (for Model A300-600 series airplanes); or A310-27A2104, Revision 02, dated October 18, 2010 (for Model A310 series airplanes). Repeat the inspection thereafter at intervals not to exceed 130 flight cycles or 650 flight hours, whichever occurs first, in accordance with the Accomplishment Instructions of Airbus Mandatory Service Bulletin A300-27A6067, Revision 02, dated October 18, 2010 (for Model A300-600 series airplanes); or A310-27A2104, Revision 02, dated October 18, 2010 (for Model A310 series airplanes).

(2) If, during the measurement required by paragraph (g) of this AD, the gimbal thickness is not 58 mm (2.28 in.) +/- 5 mm (0.20 in.), except for the requirements of paragraph (l) of this AD, no further action is required of this AD.

(h) If, during any inspection required by paragraph (g)(1) of this AD, the THSA upper attachment secondary load path is found to be engaged, before further flight, contact Airbus for repair instructions and do the repair.

Optional Terminating Action

(i) Replacing the gimbal with a "thick" gimbal (70 mm (2.75 in.) +/- 5mm (0.20 in)), in accordance with Goodrich Actuation Systems Component Maintenance Manual with Illustrated Parts List, Horizontal Stabilizer Actuator P/N 47142 Series, Document 27-44-13, Revision 8, dated December 12, 2008, is a terminating action for the requirements of paragraph (g)(1) of this AD, except as required by paragraph (l) of this AD.

Actions Accomplished in Accordance With Previous Issue of Service Bulletin

(j) Actions accomplished before the effective date of this AD, in accordance with the applicable service bulletins specified in Table 1 of this AD, are considered acceptable for compliance with the corresponding action specified in this AD.

TABLE 1—CREDIT SERVICE BULLETINS

Airbus Mandatory Service Bulletin—	Revision—	Dated—
A300-27A6067 (for Model A300-600 series airplanes)	Original	May 6, 2010.
A300-27A6067 (for Model A300-600 series airplanes)	01	May 12, 2010.
A310-27A2104 (for Model A310 series airplanes)	Original	May 6, 2010.
A310-27A2104 (for Model A310 series airplanes)	01	May 12, 2010.

Reporting Requirement

(k) Submit a report of the findings (both positive and negative) of the measurement required by paragraph (g) of this AD to Airbus, as identified in Appendix 01 of Airbus Mandatory Service Bulletin A300-27A6067, Revision 02, dated October 18, 2010 (for Model A300-600 series airplanes); or A310-27A2104, Revision 02, dated October 18, 2010 (for Model A310 series

airplanes); at the applicable time specified in paragraph (k)(1) or (k)(2) of this AD. The report must include the information specified in Appendix 01 of Airbus Mandatory Service Bulletin A300-27A6067, Revision 02, dated October 18, 2010 (for Model A300-600 series airplanes); or A310-27A2104, Revision 02, dated October 18, 2010 (for Model A310 series airplanes).

(1) If the measurement was done on or after the effective date of this AD: Submit the report within 30 days after the inspection.

(2) If the measurement was done before the effective date of this AD: Submit the report within 30 days after the effective date of this AD.

Parts Installation

(l) As of the effective date of this AD, no person may install, on any airplane, a THSA, unless it is in compliance with the requirements of this AD.

FAA AD Differences

Note 1: This AD differs from the MCAI and/or service information as follows: The MCAI does not include a reporting requirement; however, the service bulletin recommends reporting. Paragraph (k) of this AD specifies a reporting requirement.

Other FAA AD Provisions

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

(1) **Alternative Methods of Compliance (AMOCs):** The Manager, International Branch, ANM-116, FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. In accordance with 14 CFR 39.19, send your request to your principal inspector or local Flight Standards District Office, as appropriate. If sending information directly to the International Branch, send it to ATTN: Dan Rodina, Aerospace Engineer, International Branch, ANM-116, Transport Airplane Directorate, FAA, 1601 Lind Avenue, SW., Renton, Washington 98057-3356; telephone (425) 227-2125; fax (425) 227-1149. Information may be e-mailed to: 9-ANM-116-AMOC-REQUESTS@faa.gov. Before using any approved AMOC, notify your appropriate principal inspector, or lacking a principal inspector, the manager of the local flight standards district office/certificate holding district office. The AMOC approval letter must specifically reference this AD.

(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:** A federal agency may not conduct or sponsor, and a person is not required to respond to, nor shall a person be subject to a penalty for failure to comply with a collection of information subject to the requirements of the Paperwork Reduction Act unless that collection of information displays a current valid OMB Control Number. The OMB Control Number for this information collection is 2120-0056. Public reporting for this collection of information is estimated to be approximately 5 minutes per response, including the time for reviewing instructions, completing and reviewing the collection of information. All responses to this collection of information are mandatory. Comments concerning the accuracy of this burden and suggestions for reducing the burden should be directed to the FAA at: 800 Independence Ave., SW., Washington, DC 20591, *Attn:* Information Collection Clearance Officer, AES-200.

Related Information

(n) Refer to MCAI EASA Airworthiness Directive 2010-0092, dated May 21, 2010; Airbus Mandatory Service Bulletin A300-27A6067, Revision 02, including Appendix 01, dated October 18, 2010; Airbus Mandatory Service Bulletin A310-27A2104, Revision 02, including Appendix 01, dated October 18, 2010; and Goodrich Actuation Systems Component Maintenance Manual with Illustrated Parts List, Horizontal Stabilizer Actuator, P/N 47142 Series, Document 27-44-13, Revision 8, dated December 12, 2008, for related information.

Material Incorporated by Reference

(o) You must use Airbus Mandatory Service Bulletin A310-27A2104, Revision 02, including Appendix 01, dated October 18, 2010; and Airbus Mandatory Service Bulletin A300-27A6067, Revision 02, including Appendix 01, dated October 18, 2010; to do the actions required by this AD, unless the AD specifies otherwise. If you accomplish the optional terminating actions specified by this AD, you must use Goodrich Actuation Systems Component Maintenance Manual with Illustrated Parts List, Horizontal Stabilizer Actuator, P/N 47142 Series, Document 27-44-13, Revision 8, dated December 12, 2008, to perform those actions unless the AD specifies otherwise. (The LOEP in Goodrich Actuation Systems Component Maintenance Manual with Illustrated Parts List, Horizontal Stabilizer Actuator, P/N 47142 Series, Document 27-44-13, Revision 8, dated December 12, 2008, specifies that page 749 is placed after page 748a; the correct placement of page 749 is between pages 748 and 747a. The LOEP of this document identifies two pages for the Illustrated Parts List section; there is only one page for that section (page 1001-1). The date on page 1014-1 of this document is incorrect; the correct date is March 6, 1998.)

(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 Airbus service information identified in this AD, contact Airbus SAS—EAW (Airworthiness Office), 1 Rond Point Maurice Bellonte, 31707 Blagnac Cedex, France; telephone +33 5 61 93 36 96; fax +33 5 61 93 44 51; *e-mail:* account.airworth-eas@airbus.com; Internet <http://www.airbus.com>.

(3) For Goodrich service information identified in this AD, contact Goodrich Corporation Actuation Systems, Stafford Road, Fordhouses, Wolverhampton WV10 7EH, England; telephone +44 (0) 1902 624938; fax: +44 (0) 1902 788100; *e-mail:* techpubs.wolverhampton@goodrich.com; Internet <http://www.goodrich.com/TechPubs>.

(4) 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.

(5) 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 March 23, 2011.

Kalene C. Yanamura,

Acting Manager, Transport Airplane Directorate, Aircraft Certification Service.

[FR Doc. 2011-8279 Filed 4-20-11; 8:45 am]

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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2010-1271; Directorate Identifier 2010-NM-187-AD; Amendment 39-16667; AD 2011-09-05]

RIN 2120-AA64

Airworthiness Directives; The Boeing Company Model 777-200, -300, and -300ER Series Airplanes

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final rule.

SUMMARY: We are adopting a new airworthiness directive (AD) for the products listed above. This AD requires installing an auto shutoff feature for the center override/jettison fuel pumps, and installing power control circuitry for the center override/jettison and main jettison fuel pumps. This AD also requires installing new software in the electrical load management system (ELMS) electronics units in certain power management panels; installing airplane information management system 2 (AIMS-2) software in the AIMS-2 hardware; and making certain wiring changes. This AD was prompted by results from fuel system reviews conducted by the manufacturer. We are issuing this AD to prevent potential ignition sources inside fuel tanks, which, in combination with flammable fuel vapors, could result in a fuel tank explosion and consequent loss of the airplane.

DATES: This AD is effective May 26, 2011.

The Director of the Federal Register approved the incorporation by reference of certain publications listed in the AD as of May 26, 2011.

ADDRESSES: 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