**(g) Inspection and Corrective Actions**

Within 600 flight hours after the effective date of this AD, perform a detailed inspection of the two balance weights and a detailed inspection of the two hinge arms on each elevator spring tab (left hand and right hand), in accordance with Section 3.B, Part A, of the Accomplishment Instructions of Bombardier Service Bulletin 8–55–27, Revision A, dated August 15, 2018.

(1) If any of the balance weight attachment locknuts, part number (P/N) MS 21042–4, is found fractured, loose, or missing: Before further flight conduct the rectification in accordance with Section 3.B, Part B, of the Accomplishment Instructions of Bombardier Service Bulletin 8–55–27, Revision A, dated August 15, 2018.

(2) If the balance weight is found not secure: Within 60 flight hours after the inspection required by paragraph (g) of this AD, repair any damage to the hinge arm and permanently secure the mass balance, in accordance with Section 3.B, Part B, of the Accomplishment Instructions of Bombardier Service Bulletin 8–55–27, Revision A, dated August 15, 2018.

(3) If the balance weight is found secure: Within 5,000 flight hours after the inspection required by paragraph (g) of this AD, repair any damage to the hinge arm and permanently secure the mass balance, in accordance with Section 3.B, Part B, of the Accomplishment Instructions of Bombardier Service Bulletin 8–55–27, Revision A, dated August 15, 2018.

(4) Where Bombardier Service Bulletin 8–55–27, Revision A, dated August 15, 2018, specifies to contact Bombardier for appropriate action: Before further flight, accomplish corrective actions in accordance with the procedures specified in paragraph (i)(2) of this AD.

**(h) Credit for Previous Actions**

This paragraph provides credit for actions required by paragraphs (g), (g)(2), (g)(3), and (g)(4) of this AD, if those actions were performed before the effective date of this AD using Section 3.B of the Accomplishment Instructions of Bombardier Service Bulletin 8–55–27, dated April 17, 2018, provided that within 600 flight hours after the effective date of this AD, a detailed visual inspection of the balance weight locknuts, P/N MS 21042–4, is performed in accordance with Section 3.B, Part C, of the Accomplishment Instructions of Bombardier Service Bulletin 8–55–27, Revision A, dated August 15, 2018, and the rectification is performed before further flight for any fractured, loose, or missing balance weight attachment locknuts, P/N MS 21042–4, in accordance with Section 3.B, Part B, of the Accomplishment Instructions of Bombardier Service Bulletin 8–55–27, Revision A, dated August 15, 2018.

**(i) Other FAA AD Provisions**

The following provisions also apply to this AD:

(1) *Alternative Methods of Compliance (AMOCs):* The Manager, New York ACO Branch, 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 manager of the certification office, send it to ATTN: Program Manager, Continuing Operational Safety, FAA, New York ACO Branch, 1600 Stewart Avenue, Suite 410, Westbury, NY 11590; telephone 516–228–7300; fax 516–794–5531. 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.

(2) *Contacting the Manufacturer:* For any requirement in this AD to obtain corrective actions from a manufacturer, the action must be accomplished using a method approved by the Manager, New York ACO Branch, FAA; or Transport Canada Civil Aviation (TCCA); or Bombardier, Inc.'s TCCA Design Approval Organization (DAO). If approved by the DAO, the approval must include the DAO-authorized signature.

**(j) Related Information**

(1) Refer to Mandatory Continuing Airworthiness Information (MCAI) Canadian AD CF–2018–30, dated November 7, 2018, for related information. This MCAI may be found in the AD docket on the internet at *http://www.regulations.gov* by searching for and locating Docket No. FAA–2019–0189.

(2) For more information about this AD, contact Andrea Jimenez, Aerospace Engineer, Airframe and Mechanical Systems Section, FAA, New York ACO Branch, 1600 Stewart Avenue, Suite 410, Westbury, NY 11590; telephone 516–228–7330; fax 516–794–5531; email *9-avs-nyaco-cos@faa.gov*.

(3) Service information identified in this AD that is not incorporated by reference is available at the addresses specified in paragraphs (k)(3) and (k)(4) of this AD.

**(k) Material Incorporated by Reference**

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

(2) You must use this service information as applicable to do the actions required by this AD, unless this AD specifies otherwise.

(i) Bombardier Service Bulletin 8–55–27, Revision A, dated August 15, 2018.

(ii) [Reserved]

(3) For service information identified in this AD, contact Bombardier, Inc., Q-Series Technical Help Desk, 123 Garratt Boulevard, Toronto, Ontario M3K 1Y5, Canada; telephone 416–375–4000; fax 416–375–4539; email *thd.qseries@aero.bombardier.com;* internet *http://www.bombardier.com*.

(4) You may view this service information at the FAA, Transport Standards Branch, 2200 South 216th St., Des Moines, WA. For information on the availability of this material at the FAA, call 206–231–3195.

(5) You may view this 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/cfr/ibr-locations.html*.

Issued in Des Moines, Washington, on June 21, 2019.

**Dionne Palermo,**

*Acting Director, System Oversight Division, Aircraft Certification Service.*

[FR Doc. 2019–14412 Filed 7–5–19; 8:45 am]

**BILLING CODE 4910–13–P**

## DEPARTMENT OF TRANSPORTATION

## Federal Aviation Administration

## 14 CFR Part 39

**[Docket No. FAA–2019–0496; Product Identifier 2019–NM–055–AD; Amendment 39–19671; AD 2019–12–16]**

**RIN 2120–AA64**

## Airworthiness Directives; Airbus SAS Airplanes

**AGENCY:** Federal Aviation Administration (FAA), DOT.

**ACTION:** Final rule; request for comments.

**SUMMARY:** The FAA is adopting a new airworthiness directive (AD) for certain Airbus SAS Model A350–941 airplanes. This AD was prompted by a report that the capability of the diagonal struts fitted at a certain frame is below the expected design specifications. This AD requires replacing the original diagonal struts at a certain frame with new, improved parts, as specified in an European Aviation Safety Agency (EASA) AD, which is incorporated by reference. The FAA is issuing this AD to address the unsafe condition on these products.

**DATES:** This AD becomes effective July 23, 2019.

The Director of the Federal Register approved the incorporation by reference of a certain publication listed in this AD as of July 23, 2019.

The FAA must receive comments on this AD by August 22, 2019.

**ADDRESSES:** You may send comments, using the procedures found in 14 CFR 11.43 and 11.45, 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 the material incorporated by reference (IBR) in this AD, contact the EASA, Konrad-Adenauer-Ufer 3, 50668 Cologne, Germany; telephone +49 221 89990 1000; email *ADs@easa.europa.eu;* internet *www.easa.europa.eu*. You may find this IBR material on the EASA website at *https://ad.easa.europa.eu*. You may view this IBR material at the FAA, Transport Standards Branch, 2200 South 216th St., Des Moines, WA. For information on the availability of this material at the FAA, call 206–231–3195. It is also available in the AD docket on the internet at *http://www.regulations.gov*.

**Examining the AD Docket**

You may examine the AD docket on the internet at *http://www.regulations.gov* by searching for and locating Docket No. FAA–2019–0496; or in person at Docket Operations 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 Docket Operations is listed above. Comments will be available in the AD docket shortly after receipt.

**FOR FURTHER INFORMATION CONTACT:** Kathleen Arrigotti, Aerospace Engineer, International Section, Transport Standards Branch, FAA, 2200 South 216th St., Des Moines, WA 98198; telephone and fax 206–231–3218.

**SUPPLEMENTARY INFORMATION:**

**Discussion**

The EASA, which is the Technical Agent for the Member States of the European Union, has issued EASA AD 2019–0065, dated March 27, 2019 (''EASA AD 2019–0065'') (also referred to as the Mandatory Continuing Airworthiness Information, or ''the MCAI''), to correct an unsafe condition for certain Airbus SAS Model A350–941 airplanes. The MCAI states:

> Results of new additional tests, performed on the current diagonal struts fitted at fuselage frame (FR) 102 on A350–941 aeroplanes, determined that the capability of the affected parts is below the expected design specifications.
>
> This condition, if not corrected, could affect the structural integrity of the rear cone of the fuselage.
>
> To address this potential unsafe condition, Airbus designed new diagonal struts (serviceable parts), approved by Airbus mod 108588, and issued the [service bulletin] SB to provide instructions for the in-service replacement of the affected parts.
>
> For the reasons described above, this [EASA] AD requires replacement of the affected parts at fuselage FR102 with serviceable parts. This [EASA] AD also prohibits (re)installation of affected parts.

**Related IBR Material Under 1 CFR Part 51**

EASA AD 2019–0065 describes procedures for replacing the original diagonal struts at frame 102 with new, improved parts. This material is reasonably available because the interested parties have access to it through their normal course of business or by the means identified in the **ADDRESSES** section.

**FAA's Determination**

This product has been approved by the aviation authority of another country, and is approved for operation in the United States. Pursuant to a bilateral agreement with the State of Design Authority, the FAA has been notified of the unsafe condition described in the MCAI referenced above. The FAA is issuing this AD because the agency evaluated all pertinent information and determined the unsafe condition exists and is likely to exist or develop on other products of the same type design.

**Requirements of This AD**

This AD requires accomplishing the actions specified in EASA AD 2019–0065 described previously, as incorporated by reference, except for any differences identified as exceptions in the regulatory text of this AD.

**Explanation of Required Compliance Information**

In the FAA's ongoing efforts to improve the efficiency of the AD process, the FAA worked with Airbus and EASA to develop a process to use certain EASA ADs as the primary source of information for compliance with requirements for corresponding FAA ADs. As a result, EASA AD 2019–0065 is incorporated by reference in the FAA final rule. This AD, therefore, requires compliance with the provisions specified in EASA AD 2019–0065, except for any differences identified as exceptions in the regulatory text of this AD. Service information specified in EASA AD 2019–0065 that is required for compliance with EASA AD 2019–0065 is available on the internet at *http://www.regulations.gov* by searching for and locating Docket No. FAA–2019–0496.

**FAA's Justification and Determination of the Effective Date**

Since there are currently no domestic operators of this product, notice and opportunity for public comment before issuing this AD are unnecessary. In addition, for the reasons stated above, the FAA finds that good cause exists for making this amendment effective in less than 30 days.

**Comments Invited**

This AD is a final rule that involves requirements affecting flight safety, and the FAA did not precede it by notice and opportunity for public comment. The FAA invites you to send any written relevant data, views, or arguments about this AD. Send your comments to an address listed under the **ADDRESSES** section. Include ''Docket No. FAA–2019–0496; Product Identifier 2019–NM–055–AD'' at the beginning of your comments. The FAA specifically invites comments on the overall regulatory, economic, environmental, and energy aspects of this AD. The FAA will consider all comments received by the closing date and may amend this AD based on those comments.

The FAA will post all comments the agency receives, without change, to *http://www.regulations.gov,* including any personal information you provide. The FAA will also post a report summarizing each substantive verbal contact the agency receives about this AD.

**Costs of Compliance**

Currently, there are no affected U.S.-registered airplanes. If an affected airplane is imported and placed on the U.S. Register in the future, the FAA provides the following cost estimates to comply with this AD:

ESTIMATED COSTS FOR REQUIRED ACTIONS

| Labor cost | Parts cost | Cost per product |
|---|---|---|
| 5 work-hours × $85 per hour = $425 | $37,500 | $37,925 |

According to the manufacturer, some or all of the costs of this AD may be covered under warranty, thereby reducing the cost impact on affected individuals. The FAA does not control warranty coverage for affected individuals. As a result, the FAA has included all known costs in the cost estimate.

**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.

The FAA is 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.

This AD is issued in accordance with authority delegated by the Executive Director, Aircraft Certification Service, as authorized by FAA Order 8000.51C. In accordance with that order, issuance of ADs is normally a function of the Compliance and Airworthiness Division, but during this transition period, the Executive Director has delegated the authority to issue ADs applicable to transport category airplanes and associated appliances to the Director of the System Oversight Division.

**Regulatory Findings**

The FAA 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 that this AD:

1. Is not a ''significant regulatory action'' under Executive Order 12866;

2. Will not affect intrastate aviation in Alaska; 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.

**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 airworthiness directive (AD):

**2019–12–16 Airbus SAS:** Amendment 39–19671; Docket No. FAA–2019–0496; Product Identifier 2019–NM–055–AD.

**(a) Effective Date**

This AD becomes effective July 23, 2019.

**(b) Affected ADs**

None.

**(c) Applicability**

This AD applies to Airbus SAS Model A350–941 airplanes, certificated in any category, as identified in European Aviation Safety Agency (EASA) AD 2019–0065, dated March 27, 2019 (''EASA AD 2019–0065'').

**(d) Subject**

Air Transport Association (ATA) of America Code 53, Fuselage.

**(e) Reason**

This AD was prompted by a report that the capability of the diagonal struts fitted at fuselage frame 102 is below the expected design specifications. The FAA is issuing this AD to address diagonal struts that are below the expected design specifications, which could affect the structural integrity of the rear cone of the fuselage.

**(f) Compliance**

Comply with this AD within the compliance times specified, unless already done.

**(g) Requirements**

Except as specified in paragraph (h) of this AD: Comply with all required actions and compliance times specified in, and in accordance with, EASA AD 2019–0065.

**(h) Exceptions to EASA AD 2019–0065**

The ''Remarks'' section of EASA AD 2019–0065 does not apply to this AD.

**(i) Other FAA AD Provisions**

The following provisions also apply to this AD:

(1) *Alternative Methods of Compliance (AMOCs):* The Manager, International Section, Transport Standards Branch, 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 Section, send it to the attention of the person identified in paragraph (j) of this AD. Information may be emailed 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.

(2) *Contacting the Manufacturer:* For any requirement in this AD to obtain instructions from a manufacturer, the instructions must be accomplished using a method approved by the Manager, International Section, Transport Standards Branch, FAA; or EASA; or Airbus SAS's EASA Design Organization Approval (DOA). If approved by the DOA, the approval must include the DOA-authorized signature.

(3) *Required for Compliance* (*RC*): For any service information referenced in EASA AD 2019–0065 that contains RC procedures and tests: Except as required by paragraph (i)(2) of this AD, RC procedures and tests must be done to comply with this AD; any procedures or tests that are not identified as RC are recommended. Those procedures and tests that are not identified as RC may be deviated from using accepted methods in accordance with the operator's maintenance or inspection program without obtaining approval of an AMOC, provided the procedures and tests identified as RC can be done and the airplane can be put back in an airworthy condition. Any substitutions or changes to procedures or tests identified as RC require approval of an AMOC.

**(j) Related Information**

For more information about this AD, contact Kathleen Arrigotti, Aerospace Engineer, International Section, Transport Standards Branch, FAA, 2200 South 216th St., Des Moines, WA 98198; telephone and fax 206–231–3218.

**(k) Material Incorporated by Reference**

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

(2) You must use this service information as applicable to do the actions required by this AD, unless this AD specifies otherwise.

(i) European Aviation Safety Agency (EASA) AD 2019–0065, dated March 27, 2019.

(ii) [Reserved]

(3) For EASA AD 2019–0065, contact the EASA, Konrad-Adenauer-Ufer 3, 50668 Cologne, Germany; telephone +49 221 89990 6017; email *ADs@easa.europa.eu;* Internet *www.easa.europa.eu*. You may find this EASA AD on the EASA website at *https://ad.easa.europa.eu*.

(4) You may view this EASA AD at the FAA, Transport Standards Branch, 2200

South 216th St., Des Moines, WA. For information on the availability of this material at the FAA, call 206–231–3195. EASA AD 2019–0065 may be found in the AD docket on the internet at *http://www.regulations.gov* by searching for and locating Docket No. FAA–2019–0496.

(5) You may view this material 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/cfr/ibr-locations.html.*

Issued in Des Moines, Washington, on June 21, 2019.

**Dionne Palermo,**

*Acting Director, System Oversight Division, Aircraft Certification Service.*

[FR Doc. 2019–14413 Filed 7–5–19; 8:45 am]

**BILLING CODE 4910–13–P**

## DEPARTMENT OF TRANSPORTATION

## Federal Aviation Administration

## 14 CFR Part 39

**[Docket No. FAA–2019–0469; Product Identifier 2019–CE–028–AD; Amendment 39–19664; AD 2019–12–09]**

**RIN 2120–AA64**

## Airworthiness Directives; Rockwell Collins, Inc. Flight Display System Application

**AGENCY:** Federal Aviation Administration (FAA), DOT.

**ACTION:** Final rule; request for comments.

**SUMMARY:** The FAA is adopting a new airworthiness directive (AD) for certain part-numbered Rockwell Collins, Inc. (Rockwell Collins) FDSA–6500 flight display system applications installed on airplanes. This AD imposes operating limitations on the traffic collision avoidance system (TCAS) by revising the Limitations section of the airplane flight manual (AFM) or AFM supplement (AFMS) and installing a placard on each aircraft primary flight display. This AD was prompted by a conflict between the TCAS display indications and aural alerts that may occur during a resolution advisory (RA) scenario. The FAA is issuing this AD to require actions that address the unsafe condition on these products.

**DATES:** This AD is effective July 23, 2019.

The FAA must receive comments on this AD by August 22, 2019.

**ADDRESSES:** You may send comments, using the procedures found in 14 CFR 11.43 and 11.45, 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.

### Examining the AD Docket

You may examine the AD docket on the internet at *http://www.regulations.gov* by searching for and locating Docket No. FAA–2019–0469; or in person at Docket Operations between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this final rule, the regulatory evaluation, any comments received, and other information. The street address for Docket Operations is listed above. Comments will be available in the AD docket shortly after receipt.

**FOR FURTHER INFORMATION CONTACT:** Nhien Hoang, Aerospace Engineer, Wichita ACO Branch, FAA, 1801 Airport Road, Room 100, Wichita, Kansas 67209; telephone: (316) 946–4157; fax: (316) 946–4107; email: *nhien.hoang@faa.gov* or *Wichita-COS@faa.gov*.

**SUPPLEMENTARY INFORMATION:**

### Discussion

The FAA was notified that a conflict may occur between the TCAS primary cockpit display indications and the aural alerts during an RA scenario on specific part-numbered Rockwell Collins FDSA–6500 flight display system applications. These applications may be installed on, but not limited to, Bombardier Inc. Model CL–600–2B16 (604 variant) airplanes and Textron Aviation Inc. Models 525B, B200, B200C, B200CGT, B200GT, B300, B300C, and C90GTi airplanes.

During testing of a full flight simulator on a development program, the TCAS fly-to/avoidance cue indication on the primary cockpit displays conflicted with other TCAS system information, such as aural cues, during an RA scenario. While the aural alert will provide the pilot with accurate information to resolve the RA, that information is not accurately represented by the TCAS fly-to/avoidance cue display. Specifically, the TCAS fly-to/avoidance cue is displayed relative to the aircraft horizon line instead of the aircraft symbol. Rockwell Collins determined that the data from the TCAS is being translated incorrectly by the FDSA–6500 software prior to display of the RA pitch indications.

This condition, if not addressed, could lead to the pilot over-correcting or under-correcting for aircraft separation and may result in a mid-air collision. The manufacturer is developing a software update to correct this condition. The actions required by this AD are intended to prevent conflicting TCAS information by prohibiting flight operation with RA functionality enabled. The FAA is issuing this AD to address the unsafe condition on these products.

### Related Service Information

The FAA reviewed Rockwell Collins Operator Bulletin OPSB 0193–19R1, Revision 1, dated April 3, 2019. The service information describes the unsafe condition and provides examples of different scenarios that could occur with the TCAS indication conflicts. The service information also contains instructions for determining the part number of the FDSA–6500 installation.

### FAA's Determination

The FAA is issuing this AD because it evaluated all the relevant information and determined the unsafe condition described previously is likely to exist or develop in other products of the same type design.

### AD Requirements

This AD prohibits operation with the TCAS in TA/RA mode by requiring a revision to the Limitations section of the AFM or AFMS and by fabricating and installing a placard on each aircraft primary flight display. An owner/operator (pilot) may revise the AFM or the AFMS and fabricate and install the required placard, and the owner/operator must enter compliance with the applicable paragraphs of the AD into the aircraft records in accordance with 14 CFR 43.9(a)(1) through (4) and 14 CFR 91.417(a)(2)(v). A pilot may perform these actions because they can be performed equally well by a pilot or a mechanic. This is an exception to our standard maintenance regulations.

### Interim Action

The FAA considers this AD interim action. The operating limitation required by this AD will immediately address the unsafe condition. However, Rockwell Collins is developing a software upgrade to correct the unsafe condition and eliminate the need for the