Engineer, FAA, 1600 Stewart Avenue, Suite 410, Westbury, NY 11590; phone: (562) 275–5304; email: *thanh.b.tran@faa.gov.*

**(l) Material Incorporated by Reference**

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

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

(i) European Union Aviation Safety Agency (EASA) AD 2024–0232, dated December 5, 2024.

(ii) [Reserved]

(3) For EASA material identified in this AD, contact EASA, Konrad-Adenauer-Ufer 3, 50668 Cologne, Germany; phone: +49 221 8999 000; email: *ADs@easa.europa.eu;* website: *easa.europa.eu.* You may find the EASA material on the EASA website at *ad.easa.europa.eu.*

(4) You may view this material at the FAA, Airworthiness Products Section, Operational Safety Branch, 10101 Hillwood Parkway, Fort Worth, TX 76177. For information on the availability of this material at the FAA, call (817) 222–5110.

(5) You may view this material at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, visit *www.archives.gov/federal-register/cfr/ibr-locations* or email *fr.inspection@nara.gov.*

Issued on October 26, 2026.

**Steven W. Thompson,**

*Acting Deputy Director, Compliance & Airworthiness Division, Aircraft Certification Service.*

[FR Doc. 2026–22780 Filed 11–6–26; 8:45 am]

**BILLING CODE 4910–13–P**

## DEPARTMENT OF TRANSPORTATION

## Federal Aviation Administration

## 14 CFR Part 39

**[Docket No. FAA–2026–13797; Project Identifier AD–2026–01052–E; Amendment 39–23515; AD 2026–22–13]**

**RIN 2120–AA64**

## Airworthiness Directives; Lycoming Engines

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

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

**SUMMARY:** The FAA is superseding Airworthiness Directive (AD) 2026–17–10, which applied to Lycoming Engines (Lycoming) Model O–235, O–540, and IO–540 engines with a certain piston pin installed. AD 2026–17–10 required replacement of the affected piston pin with a part eligible for installation and, for certain engines, oil change and visual inspection of the engine oil filter, oil pressure screen, and oil suction screen for metal particulates. AD 2026–17–10 also prohibited the installation of an affected piston pin on any engine. Since the FAA issued AD 2026–17–10, the manufacturer has identified additional Lycoming Model engines that are subject to the unsafe condition, and the FAA determined the need to clarify the definition for an ''affected piston pin,'' and include corrective action for engine models that were not listed in the manufacturer's service material. This AD requires replacement of the affected piston pin with a part eligible for installation and, for certain engines, oil change and visual inspection of the engine oil filter, oil pressure screen, and oil suction screen for metal particulates. This AD also prohibits the installation of an affected piston pin on any engine. This AD also expands the applicability to include additional affected engines with a certain piston pin installed. The FAA is issuing this AD to address the unsafe condition on these products.

**DATES:** This AD is effective November 24, 2026.

The Director of the Federal Register approved the incorporation by reference of a certain publication listed in this AD as of November 24, 2026.

The Director of the Federal Register approved the incorporation by reference of a certain other publication listed in this AD as of September 14, 2026 (91 FR 55451, August 28, 2026).

The FAA must receive comments on this AD by December 24, 2026.

**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 *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:* Deliver to Mail address above between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

*AD Docket:* You may examine the AD docket at *regulations.gov* under Docket No. FAA–2026–13797; 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, any comments received, and other information. The street address for Docket Operations is listed above.

*Material Incorporated by Reference:*

- For Lycoming material identified in this AD, contact Lycoming Engines, 652 Oliver Street, Williamsport, PA 17701; phone: (800) 258–3279; website: *lycoming.com/contact/knowledge-base/publications.*
- You may view this material at the FAA, Airworthiness Products Section, Operational Safety Branch, 1200 District Avenue, Burlington, MA 01803. For information on the availability of this material at the FAA, call (817) 222–5110. It is also available at *regulations.gov* under Docket No. FAA–2026–13797.

**FOR FURTHER INFORMATION CONTACT:** Ramanpreet Singh, Aviation Safety Engineer, FAA, 1701 Columbia Avenue, College Park, GA 30337; phone: (516) 228–7300; email: *ECB-COS@faa.gov.*

**SUPPLEMENTARY INFORMATION:**

### Comments Invited

The FAA invites you to send any written data, views, or arguments about this final rule. Send your comments using a method listed under the **ADDRESSES** section. Include ''Docket No. FAA–2026–13797; Project Identifier AD–2026–01052–E'' at the beginning of your comments. The most helpful comments reference a specific portion of the final rule, explain the reason for any recommended change, and include supporting data. The FAA will consider all comments received by the closing date and may amend this final rule because of those comments.

Except for Confidential Business Information (CBI) as described in the following paragraph, and other information as described in 14 CFR 11.35, the FAA will post all comments received, without change, to *regulations.gov*, including any personal information you provide. The agency will also post a report summarizing each substantive verbal contact received about this final rule.

### Confidential Business Information

CBI is commercial or financial information that is both customarily and actually treated as private by its owner. Under the Freedom of Information Act (FOIA) (5 U.S.C. 552), CBI is exempt from public disclosure. If your comments responsive to this AD contain commercial or financial information that is customarily treated as private, that you actually treat as private, and that is relevant or responsive to this AD, it is important that you clearly designate the submitted comments as CBI. Please mark each page of your submission containing CBI as ''PROPIN.'' The FAA will treat such marked submissions as confidential under the FOIA, and they will not be placed in the public docket of this AD. Submissions containing CBI

should be sent to Ramanpreet Singh, Aviation Safety Engineer, FAA, 1701 Columbia Avenue, College Park, GA 30337. Any commentary that the FAA receives which is not specifically designated as CBI will be placed in the public docket for this rulemaking.

**Background**

The FAA issued AD 2026–17–10, Amendment 39–23454 (91 FR 55451, August 28, 2026) (AD 2026–17–10), for Lycoming Model O–235, O–540, and IO–540 engines with a certain piston pin installed. AD 2026–17–10 required replacement of the affected piston pin with a part eligible for installation and, for certain engines, oil change and visual inspection of the engine oil filter, oil pressure screen, and oil suction screen for metal particulates. AD 2026–17–10 was prompted by several reports of piston pin failure that resulted in metal particulate contamination in the engine oil and engine failure. The FAA issued AD 2026–17–10 to prevent failure of the piston pin.

**Actions Since AD 2026–17–10 Was Issued**

Since the FAA issued AD 2026–17–10, the manufacturer has identified additional Lycoming Model engines that are subject to the unsafe condition and identified Lycoming Model engines that were included in the applicability of AD 2026–17–10 that are not subject to the unsafe condition. Additionally, the FAA determined the need to clarify the applicability, the definition for an ''affected piston pin,'' and corrective actions. The FAA is issuing this AD to address the unsafe condition on these products.

**FAA's Determination**

The FAA is issuing this AD because the agency determined the unsafe condition described previously is likely to exist or develop in other products of the same type design.

**Material Incorporated by Reference Under 1 CFR part 51**

The FAA reviewed Lycoming Service Instruction No. 1009BF, dated July 20, 2026, which identifies the compliance times between overhauls for certain Lycoming Model engines.

This AD also requires the following material, which the Director of the Federal Register approved for incorporation by reference as of September 14, 2026 (91 FR 55451, August 28, 2026).

- Lycoming Mandatory Service Bulletin No. (MSB) 667A, dated March 12, 2026 (Lycoming MSB 667A).

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.

**AD Requirements**

This AD requires replacement of the affected piston pin with a part eligible for installation and, for certain engines, oil change and visual inspection of the engine oil filter, oil pressure screen, and oil suction screen for metal particulates. This AD also prohibits the installation of an affected piston pin on any engine. This AD also expands the applicability to include additional affected engines with a certain piston pin installed.

**Differences Between This AD and the Referenced Material**

This AD requires oil change and visual inspection of the engine oil filter, oil pressure screen, and oil suction screen for metal particulates within 5 hours time-in-service (TIS), while Lycoming MSB 667A does not have this requirement.

**Justification for Immediate Adoption and Determination of the Effective Date**

Section 553(b) of the Administrative Procedure Act (APA) (5 U.S.C. 551 *et seq.*) authorizes agencies to dispense with notice and comment procedures for rules when the agency, for ''good cause,'' finds that those procedures are ''impracticable, unnecessary, or contrary to the public interest.'' Under this section, an agency, upon finding good cause, may issue a final rule without providing notice and seeking comment prior to issuance. Further, section 553(d) of the APA authorizes agencies to make rules effective in less than thirty days, upon a finding of good cause.

An unsafe condition exists that requires the immediate adoption of this AD without providing an opportunity for public comments prior to adoption. The FAA has found that the risk to the flying public justifies forgoing notice and comment prior to adoption of this rule because piston pin microcracks and inclusions are difficult to detect prior to failure, and can result in internal damage to the engine, in-flight shutdown, and loss of control of the airplane. The FAA has determined that affected engines will need to be inspected and have affected piston pins replaced within 25 hours TIS or earlier after the effective date of this AD depending on the engine model. Additionally, the compliance time in this AD is shorter than the time necessary for the public to comment and for publication of the final rule. Accordingly, notice and opportunity for prior public comment are impracticable and contrary to the public interest pursuant to 5 U.S.C. 553(b).

In addition, the FAA finds that good cause exists pursuant to 5 U.S.C. 553(d) for making this amendment effective in less than 30 days, for the same reasons the FAA found good cause to forgo notice and comment.

**Regulatory Flexibility Act**

The requirements of the Regulatory Flexibility Act (RFA) do not apply when an agency finds good cause pursuant to 5 U.S.C. 553 to adopt a rule without prior notice and comment. Because FAA has determined that it has good cause to adopt this rule without prior notice and comment, RFA analysis is not required.

**Costs of Compliance**

The FAA estimates that this AD affects 957 engines installed on airplanes of U.S. registry.

The FAA estimates the following costs to comply with this AD:

ESTIMATED COSTS

| Action | Labor cost | Parts cost | Cost per product | Cost on U.S. operators |
|---|---|---|---|---|
| Piston pin replacement, oil change, and oil inspection. | 25 work-hours × $85 per hour = $2,125 ..... | $2,200 | $4,325 | $4,139,025 |

The FAA has included all known costs in its cost estimate. According to the manufacturer, however, some of the costs of this AD may be covered under warranty, thereby reducing the cost impact on affected operators.

**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.

**Regulatory Findings**

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, and

(2) Will not affect intrastate aviation in Alaska.

**List of Subjects in 14 CFR Part 39**

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

**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:

■ a. Removing Airworthiness Directive 2026–17–10, Amendment 39–23454 (91 FR 55451, August 28, 2026); and

■ b. Adding the following new airworthiness directive:

**2026–22–13 Lycoming Engines:** Amendment 39–23515; Docket No. FAA–2026–13797; Project Identifier AD–2026–01052–E.

**(a) Effective Date**

This airworthiness directive (AD) is effective November 24, 2026.

**(b) Affected ADs**

This AD replaces AD 2026–17–10, Amendment 39–23454 (91 FR 55451, August 28, 2026).

**(c) Applicability**

This AD applies to Lycoming Engines (Lycoming) Model engines identified in table 1 to paragraph (c) of this AD with an installed piston pin having part number (P/N) LW–13445 that was manufactured between January 7, 2021 to December 15, 2025. If the date of manufacture for the piston pin cannot be determined, this AD is applicable. If the current piston pins (P/N LW–13445) were installed prior to January 7, 2021, this AD is not applicable.

TABLE 1 TO PARAGRAPH (c)—LYCOMING MODEL ENGINES

| Engine series | Engine model |
|---|---|
| O–235 | –C1, –C1A, –C1B, –C1C, –C2A, –C2B, –C2C, –E1, –E1B, –E2A, –E2B, –F1, –F1B, –F2A, –F2B, –G1, –G1B, –G2A, –G2B, –H2C, –J2A, –J2B, –K2A, –K2B, –K2C, –L2A, –L2C, –M1, –M2C, –M3C, –N2A, –N2C, –P1, –P2A, –P2C, –P3C. |
| O–320 | –A1A, –A1B, –A2A, –A2B, –A2C, –A2D, –A3A, –A3B, –A3C, –B1A, –B1B, –B2A, –B2B, –B2C, –B2D, –B2E, –B3A, –B3B, –B3C, –D1A, –D1B, –D1C, –D1D, –D1F, –D2A, –D2B, –D2C, –D2F, –D2J, –D3G, –E1A, –E1B, –E1C, –E1F, –E1J, –E2A, –E2B, –E2C, –E2D, –E2F, –E2G, –E2H, –E3D, –E3H. |
| IO–320 | –B1A, –B1C, –B1D, –B1E, –B2A, –C1A,–C1B, –D1A, –D1B, –D1C, –E1A, –E1B, –E2A,–E2B. |
| AIO–320 | –A1B, –B1B, –C1B. |
| LIO–320 | –B1A, –C1A. |
| AEIO–320 | –D1B, –D2B, –E1A, –E1B, –E2A, –E2B. |
| VO–435 | –A1A (O–435–21), –A1B (O–435–6), –A1C (O–435–23, –23A, –23B, –23C), –A1D (O–435–6A), –A1E, –A1F, –B1A. |
| TVO–435 | –A1A, –B1A (O–435–25A), –B1B, –C1A, –D1A, –D1B, –E1A, –F1A, –G1A, –G1B. |
| O–540 | –J1A5D, –J1B5D, –J1C5D, –J1D5D, –J2A5D, –J2B5D, –J2C5D, –J2D5D, –J3A5, –J3A5D, –J3C5D, –L3C5D. |
| IO–540 | –AB1A5, –J4A5, –W1A5, –W1A5D, –W3A5D. |

**(d) Subject**

Joint Aircraft System Component (JASC) Code 8530, Reciprocating Engine Cylinder Section.

**(e) Unsafe Condition**

This AD was prompted by reports from Lycoming of metal particulates found in the engine oil during oil change and two non-detectable engine failures. The FAA is issuing this AD to prevent failure of the piston pin. The unsafe condition, if not addressed, could result in engine failure, loss of thrust control, in-flight shutdown, damage to the airplane, and loss of control of the airplane.

**(f) Compliance**

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

**(g) Definitions**

(1) For the purpose of this AD, a ''part eligible for installation'' is one of the following:

(i) A piston pin that does not have P/N LW–13445.

(ii) A piston pin having P/N LW–13445 that was not manufactured between January 7, 2021 to December 15, 2025.

(2) For the purpose of this AD, an ''affected piston pin'' is a piston pin having P/N LW–13445 and one of the following:

(i) A date of manufacture between January 7, 2021 to December 15, 2025.

(ii) A date of manufacture that is unknown.

(3) For the purpose of this AD, Group 1 engines are all affected engines, except engines with an installed piston pin having P/N LW–13445 with a manufacture date between March 23, 2023 to December 15, 2025, or an installed piston pin having P/N LW–13445 with a manufacture date that is unknown.

(4) For the purpose of this AD, Group 2 engines are engines with an installed piston pin having P/N LW–13445 with a manufacture date between March 23, 2023 to December 15, 2025, or an installed piston pin having P/N LW–13445 with a manufacture date that is unknown.

**(h) Required Actions**

(1) For Group 1 and Group 2 engines, except for Group 2 engines with greater than or equal to 150 hours time in service (TIS)

as of the effective date of this AD, within 5 hours TIS after the effective date of this AD, perform an oil change and visual inspection of the engine oil filter, oil pressure screen, and oil suction screen for metal particulates.

**Note 1 to paragraph (h)(1):** Guidance for engine oil filter, oil pressure screen, and oil suction screen inspection instructions and identification of metallic solids may be found in Lycoming Mandatory Service Bulletin No. (MSB) No. 480F, dated May 25, 2017.

(2) If any metal particulates are found during the oil change and inspection required by paragraph (h)(1) of this AD, before further flight, replace any affected piston pin with a part eligible for installation in accordance with the Required Action of Lycoming MSB 667A, dated March 12, 2026 (Lycoming MSB 667A), as applicable to engine model.

(3) For Group 1 engines with an installed piston pin with a manufacture date between January 07, 2021, to March 22, 2023, where metal particulates were not found during the oil change and inspection required by paragraph (h)(1) of this AD, at the next maintenance event requiring the removal of a cylinder assembly with an affected piston pin, or at the next engine overhaul not to exceed the time between overhaul specified in Lycoming Service Instruction No. 1009BF, dated July 20, 2026, whichever occurs first after the effective date of this AD, replace any affected piston pin with a part eligible for installation in accordance with the Required Action of Lycoming MSB 667A, as applicable to engine model.

(4) For Group 2 engines with greater than or equal to 150 hours TIS as of the effective date of this AD, before further flight, replace any affected piston pin with a part eligible for installation in accordance with the Required Action of Lycoming MSB 667A, as applicable to engine model.

(5) For Group 2 engines with less than 150 hours TIS as of the effective date of this AD, within 25 hours TIS after the effective date of this AD but before or upon reaching 150 total hours TIS since installation of the affected piston pins, whichever comes first after the effective date of this AD, replace any affected piston pin with a part eligible for installation in accordance with the Required Action of Lycoming MSB 667A, as applicable to engine model.

**(i) Installation Prohibition**

After the effective date of this AD, do not install an affected piston pin as defined in paragraph (g)(2) of this AD on any engine.

**(j) No Return of Parts**

Although the service material specifies returning certain parts to the manufacturer, this AD does not include those requirements.

**(k) Special Flight Permits**

(1) Special flight permits may be issued in accordance with 14 CFR 21.197 and 21.199199 for the replacement requirements of this AD provided no metal particulates are found during the inspection required by this AD. For Group 2 engines that are not affected by paragraph (h)(1) of this AD, an oil change showing that no metal particulates are present would be required prior to issuing a special flight permit.

(2) Special flight permits, as described in 14 CFR 21.197 and 21.199, are not allowed for the visual inspection of the engine oil filter, oil pressure screen, and oil suction screen for metal particulates requirement of this AD.

**(l) Alternative Methods of Compliance (AMOCs)**

The Manager, East Certification Branch, FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in14 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 East Certification Branch, send it to the attention of the person identified in paragraph (m)(1) of this AD and email to: *AMOC@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.

**(m) Additional Information**

(1) For more information about this AD, contact Ramanpreet Singh, Aviation Safety Engineer, FAA, Ramanpreet Singh, Aviation Safety Engineer, FAA, 1701 Columbia Avenue, College Park, GA 30337; phone: (516) 228–7300; email: *ECB-COS@faa.gov.*

(2) Material identified in this AD that is not incorporated by reference is available at the address specified in paragraph (n)(4) of this AD.

**(n) Material Incorporated by Reference**

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

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

(3) The following material was approved for IBR November 24, 2026.

(i) Lycoming Service Instruction No. 1009BF, dated July 20, 2026.

(ii) [Reserved]

(4) The following material was approved for IBR on September 14, 2026. (91 FR 55451, August 28, 2026).

(i) Lycoming Mandatory Service Bulletin No. (MSB) 667A, dated March 12, 2026.

(ii) [Reserved]

(5) For Lycoming material identified in this AD, contact Lycoming Engines, 652 Oliver Street, Williamsport, PA 17701; phone: (800) 258–3279; website: *lycoming.com/contact/knowledge-base/publications*.

(6) You may view this material at the FAA, Airworthiness Products Section, Operational Safety Branch, 1200 District Avenue, Burlington, MA 01803. For information on the availability of this material at the FAA, call (817) 222–5110.

(7) You may view this material at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, visit *www.archives.gov/federal-register/cfr/ibr-locations* or email *fr.inspection@nara.gov*.

Issued on October 30, 2026.

**Steven W. Thompson,**

*Acting Deputy Director, Compliance & Airworthiness Division, Aircraft Certification Service.*

[FR Doc. 2026–22785 Filed 11–5–26; 11:15 am]

**BILLING CODE 4910–13–P**

## DEPARTMENT OF TRANSPORTATION

## Federal Aviation Administration

## 14 CFR Part 71

**[Docket No. FAA–2025–5571; Airspace Docket No. 25–AWP–172]**

**RIN 2120–AA66**

## Amendment of Class D and Establishment of Class E Airspace; Chandler and Phoenix, AZ

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

**ACTION:** Final rule; correction.

**SUMMARY:** This action corrects a final rule published by the FAA in the **Federal Register** on October 30, 2026, amending the Class D airspace and establishing Class E airspace at Chandler and Phoenix, AZ. Specifically, this action corrects a statement in the preamble of the rule for greater clarity.

**DATES:** The effective date of the final rule published in the **Federal Register** on October 30, 2026, remains 0901 UTC, February 18, 2027. The Director of the Federal Register approves this incorporation by reference action under 1 CFR part 51, subject to the annual revision of FAA Order JO 7400.11 and publication of conforming amendments.

**ADDRESSES:** FAA Order JO 7400.11M, Airspace Designations and Reporting Points, and subsequent amendments can be viewed online at *www.faa.gov/air_traffic/publications/.* You may also contact the Airspace Regulation Group, Operational Policy, Federal Aviation Administration, 800 Independence Avenue SW, Washington DC 20591; telephone: (202) 267–8783.

**FOR FURTHER INFORMATION CONTACT:** Jeffrey Claypool, Federal Aviation Administration, Operations Support Group, Central Service Center, 10101 Hillwood Parkway, Fort Worth, TX 76177; telephone (817) 222–5711.

**SUPPLEMENTARY INFORMATION:**

### History

The FAA published a final rule in the **Federal Register** (91 FR 68449; October 30, 2026), amending the Class D airspace and establishing Class E airspace at Chandler and Phoenix, AZ. After publication, the FAA determined