



[4910-13-P]

**DEPARTMENT OF TRANSPORTATION**

**Federal Aviation Administration**

**14 CFR Part 39**

**[Docket No. FAA-2019-0389; Product Identifier 2018-SW-035-AD]**

**RIN 2120-AA64**

**Airworthiness Directives; Sikorsky Aircraft Corporation Helicopters**

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

**ACTION:** Notice of proposed rulemaking (NPRM).

**SUMMARY:** We propose to supersede Airworthiness Directive (AD) 2018-10-07, which applies to Sikorsky Aircraft Corporation (Sikorsky) Model S-76C helicopters. AD 2018-10-07 requires inspecting the engine collective position transducer (CPT). Since we issued AD 2018-10-07, we determined that an additional part-numbered engine CPT is affected by the same unsafe condition. This proposed AD would retain the requirements of AD 2018-10-07 and expand the applicability to include the additional engine CPT. We are proposing this AD to address the unsafe condition on these products.

**DATES:** We must receive comments on this proposed AD by [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

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

For service information identified in this NPRM, contact your local Sikorsky Field Representative or Sikorsky's Service Engineering Group at Sikorsky Aircraft Corporation, 124 Quarry Road, Trumbull, CT 06611; telephone 1-800-Winged-S or 203-416-4299; email [wcs\\_cust\\_service\\_eng.gr-sik@lmco.com](mailto:wcs_cust_service_eng.gr-sik@lmco.com). Operators may also log on to the Sikorsky 360 website at <https://www.sikorsky360.com>. You may view this service information at the FAA, Office of the Regional Counsel, Southwest Region, 10101 Hillwood Pkwy, Room 6N-321, Fort Worth, TX 76177. For information on the availability of this material at the FAA, call (817) 222-5110.

### **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-2019-0389; 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 NPRM, the regulatory evaluation, any comments received, and other information. The street address for Docket Operations (phone: 800-647-5527) is listed above. Comments will be available in the AD docket shortly after receipt.

**FOR FURTHER INFORMATION CONTACT:** Nick Rediess, Aerospace Engineer, Boston ACO Branch, Compliance & Airworthiness Division, FAA, 1200 District

Avenue, Burlington, MA 01803; phone: (781) 238-7159; email:  
nicholas.rediess@faa.gov.

## **SUPPLEMENTARY INFORMATION:**

### **Comments Invited**

We invite you to send any written relevant data, views, or arguments about this proposed AD. Send your comments to an address listed under the ADDRESSES section. Include “Docket No. FAA-2019-0389; Product Identifier 2018-SW-035-AD” at the beginning of your comments. We specifically invite comments on the overall regulatory, economic, environmental, and energy aspects of this NPRM. We will consider all comments received by the closing date and may amend this NPRM because of those comments.

We will post all comments we receive, without change, to <http://www.regulations.gov>, including any personal information you provide. We will also post a report summarizing each substantive verbal contact we receive about this proposed AD.

### **Discussion**

We issued AD 2018-10-07, Amendment 39-19282 (83 FR 23355, May 21, 2018), (“AD 2018-10-07”), for Sikorsky Model S-76C helicopters with a Turbomeca, S.A., Arriel 2S1 or Arriel 2S2 engine with an engine CPT part number (P/N) 76900-01821-104 installed. AD 2018-10-07 requires initial and recurring inspections of each CPT by measuring resistance, linearity resistance movement, and differential voltage, and depending on the outcome of the inspections, replacing the CPT. AD 2018-10-07 resulted from 20 reports of One Engine Inoperative (OEI) incidents resulting from wear of an

engine CPT. We issued AD 2018-10-07 to detect wear of a CPT prior to it causing an OEI condition and possible emergency landing.

#### **Actions Since AD 2018-10-07 Was Issued**

Since AD 2018-10-07 was issued, Sikorsky has introduced CPT P/N 76900-01821-105. While this part is expected to be an improvement over CPN P/N 76900-01821-104 in regard to the frequency of the potential unsafe condition, there is not enough service history on this new part to indicate that it will eliminate the unsafe condition.

This NPRM would retain the requirements of AD 2018-10-07 and would expand the applicability to include engine CPT P/N 76900-01821-105. Inspections of engine CPT P/N 76900-01821-105 are necessary since it is subject to the same unsafe condition as P/N 76900-01821-104 due to design similarity.

#### **Related Service Information under 1 CFR part 51**

We reviewed Sikorsky S-76 Helicopter Alert Service Bulletin (ASB) 76-73-8, Revision A, dated December 4, 2015 (ASB 76-73-8A), which specifies a one-time inspection of total resistance, linearity resistant movement, excitation voltage, and differential voltage of the CPTs using CPT Test Box P/N 76700-40009-042.

We reviewed Sikorsky Maintenance Manual, SA 4047-76C-2, Temporary Revision No. 73-07, dated August 17, 2016 (TR 73-07), which specifies removing, installing, and adjusting the CPTs, and inspecting total resistance, linearity resistant movement, excitation voltage, and differential voltage of the CPTs. TR 73-07 also divides the procedures by CPT Test Box P/N by providing separate procedures for test

boxes modified by Sikorsky Special Service Instructions (SSI) No. 76-96, dated August 19, 2016, which is not incorporated by reference in this AD.

We also reviewed Sikorsky Maintenance Manual, SA 4047-76C-2, Temporary Revision No. 73-08, dated September 20, 2017 (TR 73-08), which updates the procedures in TR 73-07. TR 73-08 does not divide the procedures by CPT Test Box P/N as it eliminates the procedures for CPT Test Box P/N 76700-40009-042. TR 73-08 omits obsolete figures and it provides inspection results as pass or fail.

This service information 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.

#### **Other Related Service Information**

We reviewed Sikorsky S-76 Helicopter ASB 76-73-8, Basic Issue, dated August 21, 2015 (ASB 76-73-8). ASB 76-73-8 contains the same procedures as ASB 76-73-8A; however, ASB 76-73-8A updates Sikorsky's contact information for submitting a purchase order.

We also reviewed Sikorsky SA 4047-76C-2-1, Temporary Revision No. 5-181, dated August 21, 2015 (TR 5-181); Task 5-20-00 of Sikorsky Airworthiness Limitations and Inspection Requirements, Publication No. SA 4047-76C-2-1, Revision 24, dated December 15, 2015 (Task 5-20-00); and Section 73-22-04 of Chapter 73 Engine Fuel and Control, of Sikorsky Maintenance Manual, SA 4047-76C-2, Revision 31, dated December 15, 2015 (Section 73-22-04). TR 5-181 specifies adding CPT inspections referenced in Section 73-22-04 to the 300-hour inspection checklist contained in Task 5-20-00.

We reviewed Sikorsky Safety Advisory No. SSA-S76-11-0002, dated May 17, 2011. This service information provides precautionary instructions to minimize hazardous situations that might result from an unreliable CPT.

We also reviewed Sikorsky SSI No. 76-96, dated August 19, 2016, which contains procedures to modify CPT Test Box P/N 76700-40009-042 and re-identify it as P/N 76700-40009-043. This one-time modification reduces the instructions to inspect the CPT and improves the inspection accuracy.

We reviewed Sikorsky SSI No. 76-87, dated July 24, 2015, and SSI No. 76-87A, Revision A, dated August 21, 2015. These SSIs specify a one-time inspection of total resistance, linearity resistant movement, excitation voltage, and differential voltage of the CPTs using CPT Test Box P/N 76700-40009-042.

#### **FAA's Determination**

We are proposing this AD because we 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.

#### **Proposed AD Requirements**

This proposed AD would retain all of the requirements of AD 2018-10-07, but would add engine CPT P/N 76900-01821-105 to the applicability.

#### **Differences Between this Proposed AD and the Service Information**

Sikorsky ASB 76-73-8A, TR 73-07, and TR 73-08 specify using and returning Sikorsky's CPT data sheet and any failed CPT to Sikorsky. This proposed AD would not.

### **Interim Action**

We consider this proposed AD to be an interim action. The design approval holder is currently developing a modification that will address the unsafe condition identified in this proposed AD. Once this modification is developed, approved, and available, we might consider additional rulemaking.

### **Costs of Compliance**

We estimate that this proposed AD affects 115 helicopters of U.S. registry. We estimate the following costs to comply with this proposed AD. Labor costs are estimated at \$85 per work-hour.

The inspections would take about 3.75 work-hours for an estimated cost of \$319 per helicopter and \$36,685 for the U.S. fleet per inspection cycle. Replacing a CPT would take about 6 work-hours and parts would cost \$3,072 for an estimated replacement cost of \$3,582.

### **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 have determined that this proposed AD would not have federalism implications under Executive Order 13132. This proposed AD would 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 the proposed regulation:

- (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),
- (3) Will not affect intrastate aviation in Alaska, and
- (4) 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.

### **The Proposed Amendment**

Accordingly, under the authority delegated to me by the Administrator, the FAA proposes to amend 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 removing Airworthiness Directive (AD) 2018-10-07, Amendment 39-19282 (83 FR 23355, May 21, 2018), and adding the following new AD:

**Sikorsky Aircraft Corporation:** Docket No. FAA-2019-0389; Product Identifier 2018-SW-035-AD.

**(a) Comments Due Date**

The FAA must receive comments on this AD action by [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

**(b) Affected ADs**

This AD replaces AD 2018-10-07, Amendment 39-19282 (83 FR 23355, May 21, 2018).

**(c) Applicability**

This AD applies to Sikorsky Aircraft Corporation Model S-76C helicopters, certificated in any category, with a Turbomeca, S.A., Arriel 2S1 or Arriel 2S2 engine with an engine collective position transducer (CPT) part number (P/N) 76900-01821-104 or 76900-01821-105 installed.

**(d) Subject**

Joint Aircraft System Component (JASC): 7300, Engine Fuel and Control.

**(e) Unsafe Condition**

This AD was prompted by reports of wear of the CPT that has resulted in several One Engine Inoperative (OEI) incidents. We are issuing this AD to prevent failure of a CPT. The unsafe condition, if not addressed, could result in a reduction in power to one

engine resulting in an annunciated momentary OEI condition and subsequent emergency landing.

**(f) Compliance**

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

**(g) Required Actions**

(1) Within 130 hours time-in-service (TIS):

(i) Measure resistance of each engine CPT and replace the CPT if the measured resistance is not within tolerance by following the Accomplishment Instructions, paragraphs 3.C.(1) through 3.C.(8)(b), of Sikorsky S-76 Helicopter Alert Service Bulletin ASB 76-73-8, Revision A, dated December 4, 2015 (ASB 76-73-8A), if using Test Box P/N 76700-40009-042 or by following paragraph 3.B.(11) of Sikorsky Maintenance Manual, SA 4047-76C-2, Temporary Revision No. 73-08, dated September 20, 2017 (TR 73-08), if using Test Box P/N 76700-40009-043. You are not required to use Sikorsky's CPT data sheet or submit a data sheet to Sikorsky.

(ii) Measure the linearity resistance movement of each engine CPT and replace the CPT if there is a linear abnormality or change in resistance that is not within tolerance by following the Accomplishment Instructions, paragraphs 3.D.(1) through 3.D.(14)(b), of ASB 76-73-8A, if using Test Box P/N 76700-40009-042 or by following paragraph 3.B.(12) of TR 73-08, if using Test Box P/N 76700-40009-043. You are not required to use Sikorsky's CPT data sheet or submit a data sheet to Sikorsky.

(iii) Measure the differential voltage of each engine CPT and replace the CPT if the measured voltage is not within tolerance by following the Accomplishment Instructions, paragraphs 3.E. through 3.G.(1) of ASB 76-73-8A, if using Test Box P/N

76700-40009-042 or by following paragraph 3.B.(13) of TR 73-08, if using Test Box P/N 76700-40009-043. You are not required to use Sikorsky's CPT data sheet or submit a data sheet to Sikorsky.

(2) Thereafter, at intervals not to exceed 300 hours TIS:

(i) If using Test Box P/N 76700-40009-042:

(A) Measure resistance of each engine CPT and replace the CPT if the resistance is not within tolerance by following paragraph 4.B.(11) of Sikorsky Maintenance Manual, SA 4047-76C-2, Temporary Revision No. 73-07, dated August 17, 2016 (TR 73-07), except you are not required to use Sikorsky's CPT data sheet or return a failed CPT to Sikorsky.

(B) Measure the linearity resistance movement of each engine CPT and replace the CPT if the movement exceeds tolerance by following paragraphs 4.B.(12)(a) through 4.B.(13)(f) of TR 73-07, except you are not required to use Sikorsky's CPT data sheet or return a failed CPT to Sikorsky.

(C) Measure the differential voltage of each CPT by following paragraphs 4.B.(14) through 4.B.(15)(h) of TR 73-07, except you are not required to use Sikorsky's CPT data sheet. If the maximum voltage is greater than 100 millivolts or the minimum voltage is less than -100 millivolts, replace the CPT.

(ii) For helicopters using Test Box P/N 76700-40009-043:

(A) Measure resistance of each engine CPT and replace the CPT if the resistance is not within tolerance by following paragraph 5.B.(11) of TR 73-07 or paragraph 3.B.(11) of TR 73-08, except you are not required to use Sikorsky's CPT data sheet or return a failed CPT to Sikorsky.

(B) Measure the resistance linearity of each engine CPT and replace the CPT if the resistance is not within tolerance by following paragraph 5.B.(12) of TR 73-07 or paragraph 3.B.(12) of TR 73-08, except you are not required to use Sikorsky's CPT data sheet or return a failed CPT to Sikorsky.

(C) Measure the differential voltage of each engine CPT and replace the CPT if the resistance is not within tolerance by following paragraphs 5.B.(13)(a) through 5.B.(13)(k) of TR 73-07 or paragraph 3.B.(13) of TR 73-08, except you are not required to use Sikorsky's CPT data sheet or return a failed CPT to Sikorsky.

**(h) Credit for Previous Actions**

Actions accomplished before the effective date of this AD in accordance with the procedures specified in Sikorsky S-76 Helicopter Alert Service Bulletin ASB 76-73-8, Basic Issue, dated August 21, 2015; Sikorsky Special Service Instruction SSI No. 76-87, dated July 24, 2015; or Sikorsky Special Service Instruction SSI No. 76-87, Revision A, dated August 21, 2015, are considered acceptable for compliance with the corresponding actions specified in paragraph (g)(1) of this AD.

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

(1) The Manager, Boston 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 the attention of the person identified in paragraph (j) of this AD.

(2) 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.

**(j) Related Information**

(1) For more information about this AD, contact Nick Rediess, Aerospace Engineer, Boston ACO Branch, Compliance & Airworthiness Division, FAA, 1200 District Avenue, Burlington, MA 01803; phone: (781) 238-7159; email: nicholas.rediess@faa.gov.

(2) For service information identified in this AD, contact your local Sikorsky Field Representative or Sikorsky's Service Engineering Group at Sikorsky Aircraft Corporation, 124 Quarry Road, Trumbull, CT 06611; telephone 1-800-Winged-S or 203-416-4299; email wcs\_cust\_service\_eng.gr-sik@lmco.com. Operators may also log on to the Sikorsky 360 website at <https://www.sikorsky360.com>. You may view this referenced service information at the FAA, Office of the Regional Counsel, Southwest Region, 10101 Hillwood Pkwy, Room 6N-321, Fort Worth, TX 76177. For information on the availability of this material at the FAA, call (817) 222-5110.

Issued in Fort Worth, Texas, on May 15, 2019.

Helene Gandy,

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

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