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## **DEPARTMENT OF TRANSPORTATION**

### **Federal Aviation Administration**

#### **14 CFR Part 39**

**[Docket No. FAA-2006-25824; Directorate Identifier 2004-SW-23-AD; Amendment 39-14876;  
AD 2007-01-05]  
RIN 2120-AA64**

#### **Airworthiness Directives; Sikorsky Aircraft Corporation Model S-61L, N, R, and NM Helicopters**

**AGENCY:** Federal Aviation Administration, DOT.

**ACTION:** Final rule.

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**SUMMARY:** This amendment adopts a new airworthiness directive (AD) for the specified Sikorsky Aircraft Corporation (Sikorsky) model helicopters that requires, within a specified time, creating a component history card or equivalent record. The AD also requires recording the hours time-in-service (TIS) and the external lift cycles (lift cycles) for each main gearbox input left and right freewheel unit (IFWU) assembly. Also, the AD requires calculating a moving average of lift cycles per hour TIS at specified intervals on each IFWU assembly. The moving average is used to determine if an IFWU assembly is used in repetitive external lift (REL) or non-REL helicopter operations. If an IFWU assembly is used in REL operations, this AD requires a visual and dimensional inspection of the IFWU assembly at specified intervals. This AD also requires recording certain information and replacing each part that is beyond the wear limits or that exhibits visual surface distress with an airworthy part. In addition, this AD requires permanently marking the REL IFWU camshafts and gear housings with the letters "REL" on the surface of these parts. This amendment is prompted by an accident in which the left and right IFWU assembly on a helicopter slipped or disengaged resulting in both engines over speeding, engine shutdowns, and loss of engine power to the transmissions. The actions specified by this AD are intended to prevent slipping in the IFWU assembly, loss of engine power to the transmissions, and subsequent loss of control of the helicopter.

**DATES:** Effective February 14, 2007.

The incorporation by reference of certain publications listed in the regulations is approved by the Director of the Federal Register as of February 14, 2007.

**ADDRESSES:** You may get the service information identified in this AD from Sikorsky Aircraft Corporation, Attn: Manager, Commercial Tech Support, 6900 Main Street, Stratford, Connecticut 06614, phone (203) 386-3001, fax (203) 386-5983.

## Examining the Docket

You may examine the docket that contains this AD, any comments, and other information on the Internet at <http://dms.dot.gov>, or at the Docket Management System (DMS), U.S. Department of Transportation, 400 Seventh Street, SW., Room PL-401, on the plaza level of the Nassif Building, Washington, DC.

**FOR FURTHER INFORMATION CONTACT:** Kirk Gustafson, Aviation Safety Engineer, Boston Aircraft Certification Office, Engine and Propeller Directorate, FAA, 12 New England Executive Park, Burlington, MA 01803, telephone (781) 238-7190, fax (781) 238-7170.

**SUPPLEMENTARY INFORMATION:** A proposal to amend 14 CFR part 39 to include an AD for the specified model helicopters was published in the Federal Register on September 15, 2006 (71 FR 54443). That action proposed to require, within a specified time, creating a component history card or equivalent record and counting and recording the hours TIS and the lift cycles for each IFWU assembly. A lift cycle is defined as an external load lift and subsequent release of that load. Also, the AD proposed calculating a moving average of lift cycles per hour TIS at specified intervals on the IFWU assembly. The moving average would determine if an IFWU assembly is designated as an REL or non-REL IFWU assembly. Once an IFWU assembly is designated as an REL IFWU assembly, the moving average would no longer need to be calculated for that IFWU assembly. For an IFWU assembly designated as an REL IFWU assembly, the AD proposed a repetitive visual and dimensional inspection of the IFWU assembly at 500 hours TIS or 7500 lift cycles whichever occurs first. The AD proposed recording inspection information, providing a copy of the information to the FAA, and replacing each part that is beyond the wear or surface distress limits with an airworthy part. In addition, the AD proposed permanently marking the IFWU camshaft and gear housing with the letters "REL" on the surface of these parts.

Sikorsky has issued Alert Service Bulletin No. 61B35-67B, Revision B, dated August 11, 2003 (ASB). The ASB specifies implementing a moving average procedure for determining REL status. Tracking lift cycles and the moving average procedure is contained in Sikorsky All Operators Letter CCS-61-AOL-04-0005. Further, the ASB describes procedures for establishing an inspection interval for REL and non-REL operations, which are defined in section 1.B. of the ASB. The ASB defines operations as REL when the average number of lift cycles exceeds 6 per flight hour during any 250 flight-hour period based on a moving average calculated at intervals not to exceed 50 hours of operations. The ASB defines operations as non-REL when the number of moving average lift cycles per hour is 6 or less.

Interested persons have been afforded an opportunity to participate in the making of this amendment. Due consideration has been given to the comments received. Sikorsky states there are three typographical errors in the NPRM. Under the heading "Discussion," paragraph 3, Alert Service Bulletin No. 61835-67B should be 61B35-67B, and All Operators Letter CCS-61AOL-04-0005 should be CCS-61-AOL-04-0005. Also, in the Compliance Section, within the last sentence in paragraph (d) "with oil" should read "and oil." The FAA agrees that the three typographical errors should be corrected in this AD.

After careful review of the available data, including the comments noted above, the FAA has determined that air safety and the public interest require adopting the rule with the changes described previously. We have determined that these changes will neither increase the economic burden on any operator nor increase the scope of the AD.

We estimate that this AD will affect 21 helicopters of U.S. registry and will take about:

- 4 work hours to measure and record the inspected dimensions;
- 1 work hour to mark the REL parts;
- 3 work hours per year per helicopter to do the cycle counting, recording the lift cycle count, and inspecting each IFWU assembly;

- Cost about \$80 per work hour; and
- Cost about \$600 to replace the IFWU rollers and \$980 per helicopter to replace the IFWU Oilite bushings at each overhaul.

Based on these figures, the estimated total cost impact of the AD on U.S. operators will be \$46,620, assuming you replace the IFWU rollers and Oilite bushings on every helicopter and every IFWU assembly is determined to be an REL IFWU assembly based on the first lift cycle calculation.

## **Regulatory Findings**

We have 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 the 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); 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 an economic evaluation of the estimated costs to comply with this AD. See the DMS to examine the economic evaluation.

## **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.

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

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

## **Adoption of the Amendment**

Accordingly, pursuant to the authority delegated to me by the Administrator, the Federal Aviation Administration amends part 39 of the Federal Aviation Regulations (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. Section 39.13 is amended by adding a new airworthiness directive to read as follows:



**2007-01-05 Sikorsky Aircraft Corporation:** Amendment 39-14876. Docket No. FAA-2006-25824; Directorate Identifier 2004-SW-23-AD.

### **Applicability**

Model S-61L, N, R, and NM helicopters, certificated in any category.

### **Compliance**

Required as indicated.

To prevent slipping of the main gearbox input freewheel unit (IFWU) assembly, loss of engine power, and subsequent loss of control of the helicopter, do the following:

(a) Within 10 hours time-in-service (TIS), (1) Create an external lift component history card or equivalent record for each IFWU assembly, part number (P/N) 61074-35000-041 through 61074-35000-063, unless accomplished previously, and

(2) Count and, at the end of each days operations, record the number of external lift cycles (lift cycles) performed and the hours TIS. A “lift cycle” is defined as the lifting of an external load and subsequent release of the load.

(b) Determine whether the IFWU assembly is an REL or non-REL IFWU assembly by using a 250-hour TIS moving average as follows:

(1) Upon reaching 250 hours TIS after the effective date of this AD, calculate the first moving average of lift cycles by following the instructions in Section I of Appendix I of this AD.

(i) If the calculation under paragraph (b)(1) of this AD results in more than 6 lift cycles per hour TIS, the IFWU assembly is an REL IFWU assembly.

(ii) If the calculation under paragraph (b)(1) of this AD results in 6 or less lift cycles per hour TIS, the IFWU assembly is a Non-REL IFWU assembly.

(2) If you determine the IFWU assembly is a Non-REL IFWU assembly based on the first calculation of the 250-hour TIS moving average for lift cycles, thereafter at intervals of 50 hour TIS, recalculate the average lift cycles per hour TIS by following the instructions in Section II of Appendix 1 of this AD.

(i) If the calculation under paragraph (b)(2) of this AD results in more than 6 lift cycles per hour TIS, the IFWU assembly is an REL IFWU assembly.

(ii) If the calculation under paragraph (b)(2) of this AD results in 6 or less lift cycles per hour TIS, the IFWU assembly is a Non-REL IFWU assembly.

(3) Once an IFWU assembly is determined to be an REL IFWU assembly, it remains an REL IFWU assembly for the rest of its service life and is subject to the AD inspection requirements for REL IFWU assemblies.

(4) Once an IFWU assembly is determined to be an REL IFWU assembly, you no longer need to perform the 250-hour TIS moving average calculation, but you must continue to count and record the lift cycles.

**Note 1:** Sikorsky Aircraft Corporation issued an All Operators Letter (AOL) CCS-61-AOL-04-0005, dated May 18, 2004, with an example and additional information about tracking cycles and the moving average procedure. You can obtain this AOL from the manufacturer at the address stated in the ADDRESSES portion of this AD.

(c) For each REL IFWU assembly, at intervals not to exceed 500 hours TIS or 7500 lift cycles, whichever occurs first, since the last IFWU assembly inspection:

(1) Inspect for wear, surface distress, and endplay by following paragraphs B.(1) through B.(6) of the Accomplishment Instructions of Sikorsky Aircraft Corporation Alert Service Bulletin No. 61B35-67B, Revision B, dated August 11, 2003 (ASB). Record all the information specified in Figures 1 through 3 attached to the ASB. You may record this information on any suitable maintenance record, or you may use the Sikorsky evaluation forms provided in the ASB. This AD does not require you to contact Sikorsky.

(2) Replace any IFWU assembly part whose average wear, wear marks, surface distress, or endplay exceeds the limits stated in paragraph B.(1) through B.(6) of the Accomplishment Instructions of the ASB with an airworthy IFWU assembly part.

**Note 2:** Sikorsky S-61 Overhaul Manual, Number SA 4045-83, Revision 20, dated August 15, 2003, as revised by Temporary Revisions 65-193, -194, -195, and -196, contains the overhaul procedures for the IFWU assembly.

(d) For each REL IFWU assembly, permanently mark IFWU camshafts, P/N S6135-20611, S6135-20614 and S6137-23075, and IFWU gear housings, P/N S6135-20695 and S6137-23057, with the letters "REL". Mark the camshafts by applying etching ink on the surface of the part that is 0.5 inch square with the depth of the letters not to exceed 0.001 inch. After etching, neutralize the etched surface and oil to prevent corrosion.

(e) For the next 24 months and within 10 days after completing the requirements of paragraph (c)(1) of this AD, provide a copy of the recorded information to the Manager of the Boston Aircraft Certification Office, Engine and Propeller Directorate, FAA, 12 New England Executive Park, Burlington, MA 01803.

**Note 3:** In the ASB, Sikorsky requests copies of the completed inspection forms, Figures 1 through 3 to their ASB. This AD does not require you to provide these forms to Sikorsky.

(f) Information collection requirements contained in this AD have been approved by the Office of Management and Budget (OMB) under the provisions of the Paperwork Reduction Act of 1980 (44 U.S.C. 3501 et seq.) and have been assigned OMB Control Number 2120-0056.

(g) To request a different method of compliance or a different compliance time for this AD, follow the procedures in 14 CFR 39.19. Contact the Manager, Boston Aircraft Certification Office, Engine and Propeller Directorate, FAA, ATTN: Kirk Gustafson, Aviation Safety Engineer, 12 New England Executive Park, Burlington, MA 01803, telephone (781) 238-7190, fax (781) 238-7170, for information about previously approved alternative methods of compliance.

(h) The inspections shall be done by following the specified portions of Sikorsky Aircraft Corporation Alert Service Bulletin No. 61B35-67B, Revision B, dated August 11, 2003. The Director of the Federal Register approved this incorporation by reference in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. Copies may be obtained from Sikorsky Aircraft Corporation, Attn: Manager, Commercial Tech Support, 6900 Main Street, Stratford, Connecticut 06614, phone (203) 386-3001, fax (203) 386-5983. Copies may be inspected 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](http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html).

(i) This amendment becomes effective on February 14, 2007.



## **Appendix I**

**Section I:** The first moving average of lift cycles per hour TIS.

The first moving average calculation is performed on the IFWU assembly when the external lift component history card record reflects that the IFWU assembly has reached its first 250 hours TIS. To perform the calculation, divide the total number of lift cycles performed during the first 250 hours TIS by 250. The result will be the first moving average calculation of lift cycles per hour TIS.

**Section II:** Subsequent moving average of lift cycles per hour TIS.

Subsequent moving average calculations are performed on the IFWU assembly at intervals of 50 hour TIS after the first moving average calculation. Subtract the total number of lift cycles performed during the first 50-hour TIS interval used in the previous moving average calculation from the total number of lift cycles performed on the IFWU assembly during the previous 300 hours TIS. Divide this result by 250. The result will be the next or subsequent moving average calculation of lift cycles per hour TIS.

**Section III:** Sample calculation for subsequent 50 hour TIS intervals.

Assume the total number of lift cycles for the first 50 hour TIS interval used in the previous moving average calculation = 450 lift cycles and the total number of lift cycles for the previous 300 hours TIS = 2700 lift cycles. The subsequent moving average of lift cycles per hour TIS =  $(2700-450)$  divided by 250 = 9 lift cycles per hour TIS.

Issued in Fort Worth, Texas, on December 26, 2006.

David A. Downey,

Manager, Rotorcraft Directorate, Aircraft Certification Service.

[FR Doc. E7-40 Filed 1-9-07; 8:45 am]