

of proposed rulemaking published in the **Federal Register** on September 7, 2001 (66 FR 46742).

**DATES:** Comments must be received on or before November 8, 2001. DOE is requesting 3 copies of the written comments and prepared statements for the public hearing. Oral views, data, and arguments may be presented at the public hearing in Washington, DC, beginning at 9 a.m. on October 10, 2001. DOE must receive requests to speak at the public hearing and a copy of your statements no later than 4 p.m., October 9, 2001.

**ADDRESSES:** Please submit written comments, oral statements, and requests to speak at the public hearing to: Loretta Young, Office of Advocacy, EH-8, U.S. Department of Energy, 1000 Independence Avenue, SW., Washington, D.C. 20585.

The hearing will begin at 9 a.m., in Room 1E-245 at the U.S. Department of Energy, Forrestal Building, 1000 Independence Avenue, S.W., Washington DC. You can find more information concerning public participation in this rulemaking proceeding in Section IV, "Opportunity for Public Comment," of the previously published notice of proposed rulemaking (66 FR 46742).

**FOR FURTHER INFORMATION CONTACT:** Loretta Young, Office of Advocacy, EH-8, U.S. Department of Energy, 1000 Independence Avenue, SW., Washington, DC 20585; (202) 586-2819; fax: 202-586-6010; e-mail: [loretta.young@eh.doe.gov](mailto:loretta.young@eh.doe.gov).

Issued in Washington, D.C., on September 18, 2001.

**Steven Cary,**

*Acting Assistant Secretary, Environment, Safety and Health.*

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**BILLING CODE 6450-01-P**

## DEPARTMENT OF TRANSPORTATION

### Federal Aviation Administration

#### 14 CFR Part 39

[Docket No. 2001-SW-14-AD]

RIN 2120-AA64

#### **Airworthiness Directives; Model HH-1K, TH-1F, TH-1L, UH-1A, UH-1B, UH-1E, UH-1F, UH-1H, UH-1L, UH-1P, and Southwest Florida Aviation Model SW204, SW204HP, SW205, and SW205A-1 Helicopters, Manufactured by Bell Helicopter Textron, Inc. for the Armed Forces of the United States**

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

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

**SUMMARY:** This document proposes superseding an existing airworthiness directive (AD) for Model HH-1K, TH-1F, TH-1L, UH-1A, UH-1B, UH-1E, UH-1F, UH-1H, UH-1L, and UH-1P; and Southwest Florida Aviation SW204, SW204HP, SW205, and SW205A-1 helicopters manufactured by Bell Helicopter Textron, Inc. (BHTI) for the Armed Forces of the United States. That AD currently requires establishing retirement lives for certain main rotor masts, creating a component history card or equivalent record, and identifying and replacing any unairworthy masts. That AD also contains certain requirements regarding the hub spring, conducting inspections based on the retirement index number (RIN), and sending information to the FAA. This action would contain the same requirements but would establish a retirement life for the main rotor trunnion (trunnion) based on monitoring the number of torque events and flight hours rather than flight hours only as currently required. This action would also add a note clarifying that the mast serial number (S/N) is defined by 5 or fewer digits plus various prefixes. This proposal is prompted by the determination that monitoring the number of torque events and flight hours for the trunnion is more accurate than by monitoring flight hours only to establish a retirement life. The actions specified by the proposed AD are intended to prevent failure of a mast or trunnion, separation of the main rotor system, and subsequent loss of control of the helicopter.

**DATES:** Comments must be received on or before November 20, 2001.

**ADDRESSES:** Submit comments in triplicate to the Federal Aviation Administration (FAA), Office of the

Regional Counsel, Southwest Region, Attention: Rules Docket No. 2001-SW-14-AD, 2601 Meacham Blvd., Room 663, Fort Worth, Texas 76137. You may also send comments electronically to the Rules Docket at the following address: [9-asw-adcomments@faa.gov](mailto:9-asw-adcomments@faa.gov). Comments may be inspected at that Office between 9 a.m. and 3 p.m., Monday through Friday, except Federal holidays.

**FOR FURTHER INFORMATION CONTACT:** Michael Kohner, Aviation Safety Engineer, FAA, Rotorcraft Directorate, Rotorcraft Certification Office, Fort Worth, Texas 76193-0170, telephone (817) 222-5447, fax (817) 222-5783.

#### **SUPPLEMENTARY INFORMATION:**

##### **Comments Invited**

Interested persons are invited to participate in the making of the proposed rule by submitting such written data, views, or arguments as they may desire. Communications should identify the Rules Docket number and be submitted in triplicate to the address specified above. All communications received on or before the closing date for comments will be considered before taking action on the proposed rule. The proposals contained in this document may be changed in light of the comments received.

Comments are specifically invited on the overall regulatory, economic, environmental, and energy aspects of the proposed rule. All comments submitted will be available, both before and after the closing date for comments, in the Rules Docket for examination by interested persons. A report summarizing each FAA-public contact concerned with the substance of this proposal will be filed in the Rules Docket.

Commenters wishing the FAA to acknowledge receipt of their mailed comments submitted in response to this proposal must submit a self-addressed, stamped postcard on which the following statement is made: "Comments to Docket No. 2001-SW-14-AD." The postcard will be date stamped and returned to the commenter.

##### **Availability of NPRMs**

Any person may obtain a copy of this NPRM by submitting a request to the FAA, Office of the Regional Counsel, Southwest Region, Attention: Rules Docket No. 2001-SW-14-AD, 2601 Meacham Blvd., Room 663, Fort Worth, Texas 76137.

##### **Discussion**

On November 13, 1998, the FAA issued AD 98-24-15 for BHTI Model

204B, 205A, 205A-1, 205B, and 212 helicopters, which established a retirement life for the main rotor mast (mast) and trunnion based on a RIN count. That AD required creating component history cards or equivalent records, converting accumulated factored flight hours to a baseline accumulated RIN count, establishing a system for tracking increases to the accumulated RIN, and establishing a maximum accumulated RIN for certain masts and trunnions. Analysis and reevaluation of previous fatigue testing conducted by the manufacturer of those model helicopters following an accident involving a Model 205A-1 helicopter confirmed that the remaining lives for the mast and trunnion are more accurately assessed by monitoring the number of torque events and flight hours rather than monitoring only flight hours. Since identical trunnions are installed on the surplus military helicopters of similar type design, the FAA has determined that similar procedures and limitations need to be imposed on restricted category helicopters.

AD 98-24-15, Amendment 39-10900, Docket 97-SW-20-AD (63 FR 64612, November 23, 1998), for BHTI Model 204B, 205A, 205A-1, 205B, and 212 helicopters, was superseded by Priority Letter AD 2000-08-52, Docket 2000-SW-20-AD. Priority Letter AD 2000-08-52 was superseded by AD 2000-15-52, Amendment 39-12042, Docket 2000-SW-28-AD (65 FR 77785, December 13, 2000). For similar helicopters in the restricted category, AD 2000-22-51, Amendment 39-12034 (65 FR 77263, December 11, 2000, Docket No. 2000-SW-42-AD), superseded Priority Letter AD 2000-08-53, Docket 2000-SW-08-AD, and previous AD 89-17-03, Amendment 39-6251, Docket 88-ASW-33 (54 FR 31935, August 3, 1989). AD 2000-22-51 required the calculation of the retirement life for the trunnion, part number 204-011-105-001, installed on those restricted category helicopters based on hours time-in-service (TIS) only. This document proposes to require that the service life of the trunnion on those restricted category helicopters be limited to 300,000 RIN or 15,000 hours TIS, whichever occurs first, to prevent failure of a mast or trunnion, separation of the main rotor system, and subsequent loss of control of the helicopter.

We have identified an unsafe condition that is likely to exist or develop on Model HH-1K, TH-1F, TH-1L, UH-1A, UH-1B, UH-1E, UH-1F, UH-1H, UH-1L, and UH-1P; and Southwest Florida Aviation SW204,

SW204HP, SW205, and SW205A-1 helicopters manufactured by BHTI for the Armed Forces of the United States. Therefore, the proposed AD would supersede AD 2000-22-51. The FAA has determined that the retirement life for a trunnion is more accurate if monitored by the number of torque events and flight hours rather than monitoring only flight hours. Therefore, this AD would contain the same requirements as AD 2000-22-51 for the mast but would establish a retirement life for the trunnions based on monitoring the number of torque events and flight hours. This AD would also add a note clarifying that the mast S/N is defined by 5 or fewer digits plus various prefixes.

The FAA estimates that this proposed AD would affect 75 helicopters of U.S. registry. The FAA also estimates that it would take 10 work hours to replace the trunnion, 2 work hours per helicopter to create a new component history card or equivalent record for the trunnions and that the average labor rate is \$60 per work hour. Required trunnions would cost approximately \$5,300 per helicopter. Based on these figures, the total cost impact of the proposed AD on U.S. operators is estimated to be \$451,500.

The regulations proposed herein 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. Therefore, it is determined that this proposal would not have federalism implications under Executive Order 13132.

For the reasons discussed above, I certify that this 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); and (3) if promulgated, 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. A copy of the draft regulatory evaluation prepared for this action is contained in the Rules Docket. A copy of it may be obtained by contacting the Rules Docket at the location provided under the caption

#### ADDRESSES.

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

Air transportation, Aircraft, Aviation safety, Safety.

#### The Proposed Amendment

Accordingly, pursuant to the authority delegated to me by the

Administrator, the Federal Aviation Administration proposes to amend 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 removing Amendment 39-12034 (65 FR 77263, December 11, 2000), and by adding a new airworthiness directive (AD), to read as follows:

**Arrow Falcon Exporters, Inc. (previously Utah State University); Firefly Aviation Helicopter Services (previously Erickson Air-Crane Co.); Garlick Helicopters, Inc.; Hawkins and Powers Aviation, Inc.; International Helicopters, Inc.; Robinson Air Crane, Inc.; Smith Helicopters; Southern Helicopter, Inc.; Southwest Florida Aviation; Tamarack Helicopters, Inc. (previously Ranger Helicopter Services, Inc.); U.S. Helicopter, Inc.; Western International Aviation, Inc., and Williams Helicopter Corporation (previously Scott Paper Co.):** 2001-SW-14-AD. Supersedes AD 2000-22-51, Amendment 39-12034, Docket No. 2000-SW-42-AD.

*Applicability:* Model HH-1K, TH-1F, TH-1L, UH-1A, UH-1B, UH-1E, UH-1F, UH-1H, UH-1L, and UH-1P; and Southwest Florida Aviation SW204, SW204HP, SW205, and SW205A-1 helicopters, manufactured by Bell Helicopter Textron Inc. (BHTI) for the Armed Forces of the United States, with main rotor mast (mast), part number (P/N) 204-011-450-007, -105, or -109, or main rotor trunnion (trunnion), P/N 204-011-105-001, installed, certificated in any category.

**Note 1:** This AD applies to each helicopter identified in the preceding applicability provision, regardless of whether it has been otherwise modified, altered, or repaired in the area subject to the requirements of this AD. For helicopters that have been modified, altered, or repaired so that the performance of the requirements of this AD is affected, the owner/operator must request approval for an alternative method of compliance in accordance with paragraph (c) of this AD. The request should include an assessment of the effect of the modification, alteration, or repair on the unsafe condition addressed by this AD; and if the unsafe condition has not been eliminated, the request should include specific proposed actions to address it.

*Compliance:* Required as indicated, unless accomplished previously.

**Note 2:** This AD requires using new factors to recalculate the FACTORED flight hours and the accumulated Retirement Index Number (RIN) for masts installed on certain helicopter models. This AD also expands the serial number (S/N) applicability for the one-time special inspection of the mast.

To prevent failure of a mast or trunnion, separation of the main rotor system, and

subsequent loss of control of the helicopter, accomplish the following:

(a) For the mast, P/N 204-011-450-007, -105, or -109:

**Note 3:** The next higher assembly level for the affected P/N's are the 204-040-366 mast assemblies. Check the helicopter records for the appropriate P/N and assembly level.

(1) Within 10 hours time-in-service (TIS), create a component history card or equivalent record for the mast.

(2) Within 10 hours TIS, determine and record the accumulated RIN and revised hours TIS for the mast as follows:

(i) Review the helicopter maintenance records for the mast. If you do not know the helicopter model installation history or hours TIS of the mast, remove the mast from service, identify the mast as unairworthy, and replace it with an airworthy mast before further flight.

(ii) Calculate the accumulated RIN and the revised hours TIS for the mast in accordance with the instructions in Appendix 1 to this AD. For those hours TIS the mast has been installed on any other helicopter, calculate the RIN for that trunnion in accordance with the requirements for those helicopters.

(iii) Record the accumulated RIN and revised hours TIS for the mast on the component history card or equivalent record. Use the revised hours TIS as the new hours TIS for the mast.

(3) Before further flight after accomplishing the requirements of paragraph (a)(2) of this AD, remove from service any mast that has accumulated 265,000 or more RIN or 15,000 or more revised hours TIS and identify the mast as unairworthy. Replace the mast with an airworthy mast.

(4) Within 25 hours TIS, remove any hub spring installed on any affected helicopter.

**Note 4:** U.S. Army Modification Work Order (MWO) 55-1520-242-50-1 pertains to the removal of the hub spring and

replacement of any required parts. U.S. Army Safety of Flight Message UH-1-00-10 dated July 19, 2000, also pertains to the subject of this AD.

(5) Determine whether a mast with a S/N less than and including 52720, 61433 through 61444, or 61457 through 61465 (regardless of prefix), has *ever* been installed on a helicopter while operated *with* a hub spring.

**Note 5:** The mast S/N consists of 5 or less numerical digits and may be preceded by one of the following prefixes: NFS, N9, H, AC9, CP, FA, H9, N19, RH9, or NC. There may be other prefixes in addition to those listed. The prefix and S/N may or may not be separated by a dash.

(i) If a mast has *never* been installed on a helicopter while operated *with* a hub spring, before reaching 100,000 RIN, inspect the upper and lower snap ring grooves in the damper clamp splined area for:

(A) A minimum radius of 0.020 inch around the entire circumference (see Figures 1 and 2), using a 100× or higher magnification. If any snap ring groove radius is less than 0.020 inch, identify the mast as unairworthy and replace it with an airworthy mast before exceeding 100,000 RIN.

(B) A burr (see Figures 1 through 3), using a 200× or higher magnification. If a burr is found in any snap ring groove/spline intersection, identify the mast as unairworthy and replace it with an airworthy mast before exceeding 170,000 RIN.

(ii) If a mast has *ever* been installed on a helicopter while operated *with* a hub spring or if you do not know whether a hub spring has ever been installed, before reaching 100,000 RIN or 400 *unfactored* flight hours, whichever occurs first, inspect the upper and lower snap ring grooves in the damper clamp splined area for:

(A) A minimum radius of 0.020 inch around the entire circumference (see Figures

1 and 2), using a 100× or higher magnification. If any snap ring groove radius is less than 0.020 inch, identify the mast as unairworthy and replace it with an airworthy mast before further flight.

(B) A burr (see Figures 1 through 3), using a 200× or higher magnification. If a burr is found in any snap ring groove/spline intersection, identify the mast as unairworthy and replace it with an airworthy mast before further flight.

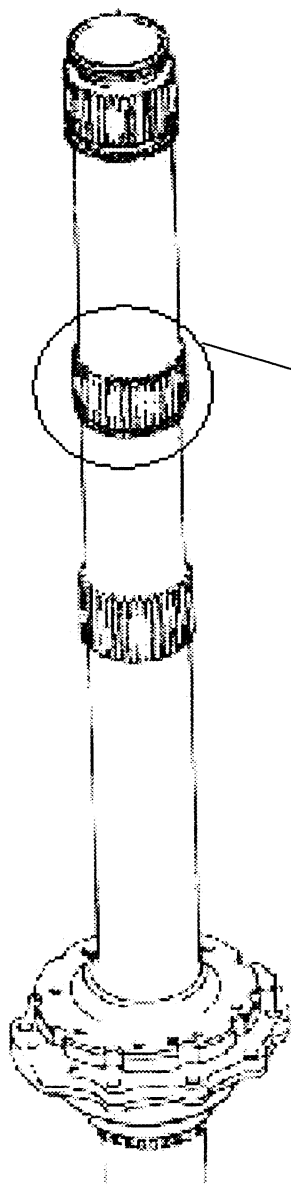
(6) After accomplishing the requirements of paragraph (a)(2) of this AD, continue to calculate the accumulated RIN for the mast by multiplying all takeoff and external load lifts by the RIN factors defined in columns (D) and (G) of Table 1 of Appendix 1 of this AD.

(7) After accomplishing the requirements of paragraph (a)(2) of this AD, continue to count the hours TIS for the mast. Any hours TIS for the mast while installed on a helicopter operated *with* a hub spring or those hours during which you do not know whether a hub spring was installed must be factored in accordance with the instructions in Appendix 1 of this AD.

(8) This AD establishes a retirement life of 265,000 accumulated RIN or 15,000 hours TIS, whichever occurs first, for mast, P/N 204-011-450-007, -105, and -109.

(9) Within 10 days after completing the inspections required by paragraph (a)(5) of this AD, send the information contained on the AD compliance inspection report sample format contained in Appendix 2 to the Manager, Rotorcraft Certification Office, Federal Aviation Administration, Fort Worth, Texas, 76193-0170, USA. Reporting requirements have been approved by the Office of Management and Budget and assigned OMB control number 2120-0056.

**BILLING CODE 4910-13-P**



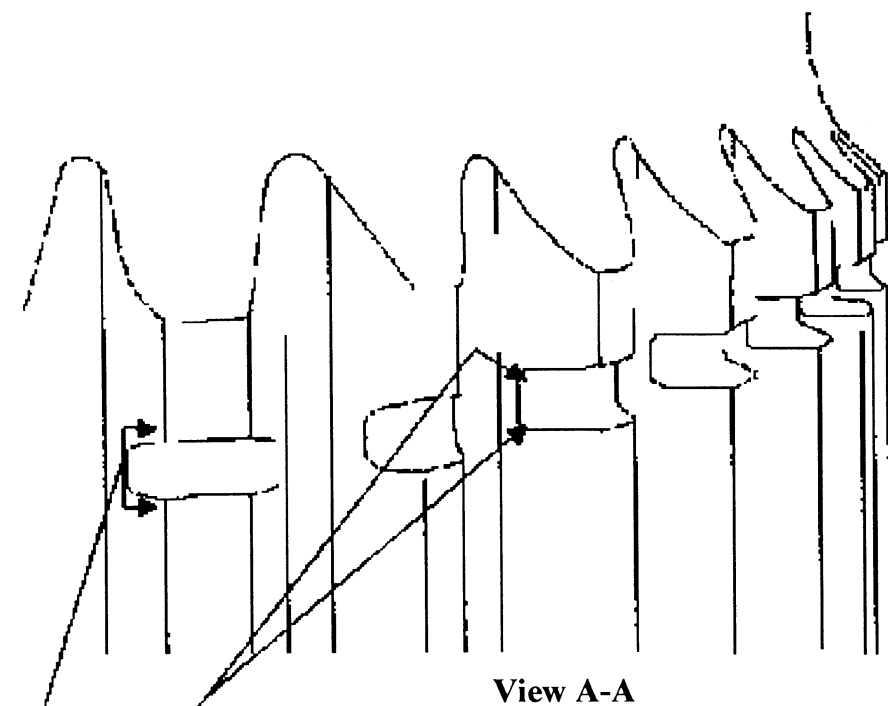
Inspect area for:

- At 100x minimum magnification  
Minimum radius of 0.020 at the  
snap ring groove/spline intersection
- At 200x minimum magnification  
Burr in the snap ring groove

See view A-A for detail

View A

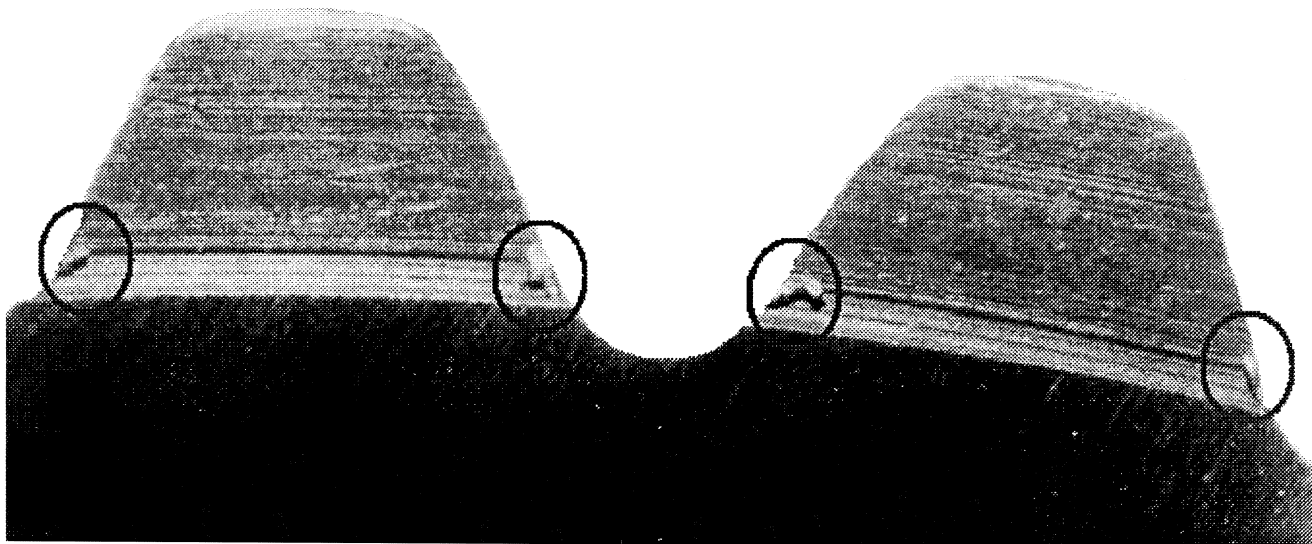
Figure 1



Inspect for minimum 0.020 radius in the snap ring groove using 100x magnification minimum (upper and lower grooves, entire circumference)

Inspect for burrs at the snap ring groove/spline intersection using 200x magnification minimum (upper and lower grooves, all places)

Figure 2  
Snap Ring Groove/Spline Intersection



### Cutaway View Looking Down from Inside Snap Ring Groove

Typical Burrs at Snap Ring Groove/Spline Intersection  
Burrs are to be Inspected at 200x Minimum Magnification

Figure 3  
Typical Burrs at Snap Ring Groove

#### BILLING CODE 4910-13-C

(b) For the trunnion, P/N 204-011-105-001:

(1) Within 10 hours TIS, create a component history card or equivalent record for the trunnion.

(2) Within 10 hours TIS, determine and record the accumulated RIN and revised hours TIS for the trunnion as follows:

(i) Review the helicopter maintenance records for the trunnion. If the helicopter model installation history or hours TIS of the trunnion are unknown, remove the trunnion from service, identify the trunnion as unairworthy, and replace it with an airworthy trunnion before further flight.

(ii) Calculate the accumulated RIN and the revised hours TIS in accordance with the instructions in Appendix 3 to this AD. For those hours TIS the trunnion has been installed on any other helicopter, calculate the RIN for that trunnion in accordance with the requirements for those helicopters.

(iii) Record the accumulated RIN and revised hours TIS for the trunnion on the component history card or equivalent record. Use the revised hours TIS as the new hours TIS for the trunnion.

(3) Before further flight after accomplishing the requirements of paragraph (b)(2) of this AD, remove from service any trunnion that has accumulated 300,000 or more RIN or 15,000 or more revised hours TIS and

identify the trunnion as unairworthy. Replace the trunnion with an airworthy trunnion.

(4) After accomplishing the requirements of paragraph (b)(2) of this AD, continue to calculate the accumulated RIN for the trunnion by multiplying all takeoff and external load lifts by the RIN factors defined in columns (D) and (G) of Table 1 of Appendix 3 to this AD.

(5) After accomplishing the requirements of paragraph (b)(2) of this AD, continue to count the hours TIS for the trunnion.

(6) This AD establishes a retirement life of 300,000 accumulated RIN or 15,000 hours TIS, whichever occurs first, for the trunnion, P/N 204-011-105-001.

(c) An alternative method of compliance or adjustment of the compliance time that provides an acceptable level of safety may be used if approved by the Manager, Rotorcraft Certification Office, FAA. Operators shall submit their requests through an FAA Principal Maintenance Inspector, who may concur or comment and then send it to the Manager, Rotorcraft Certification Office.

**Note 6:** Information concerning the existence of approved alternative methods of compliance with this AD, if any, may be obtained from the Manager, Rotorcraft Certification Office.

(d) Special flight permits may be issued in accordance with 14 CFR 21.197 and 21.199

to operate the helicopter to a location where the requirements of this AD can be accomplished.

#### Appendix 1—Instructions for Calculating the RIN and Revised Hours TIS

##### Definitions for the RIN

The overall *fatigue life* of a main rotor mast is a function of the number of cycles of torque, lift, and bending loads applied to it during the various modes of operation. The mast experiences both high cycle fatigue and low cycle fatigue during operation.

The *high cycle fatigue life* of the mast is a function of high frequency but relatively low level cyclic loads, which are primarily induced by rotor rpm. The high cycle fatigue life limit for the mast is defined in terms of hours TIS because rotor rpm is basically a constant value.

The *low cycle fatigue life* of the mast is a function of the number of less frequent but relatively high level cyclic loads experienced primarily during takeoffs and external load lifts. The low cycle fatigue life limit for the mast is expressed in terms of the accumulated RIN.

A *load cycle* is a power cycle caused by a repeating or fluctuating load that alternates from a starting power value, goes to a higher power value, and returns to the starting power value.

The *accumulated RIN* is defined as the total number of load cycles multiplied by a *RIN factor* to account for the difference in torque levels applied to the same mast (since manufactured) when installed in different helicopter models. The level of torque applied to the mast is directly proportional to the transmission output horsepower.

The *unfactored hours TIS* is the time from the moment a helicopter leaves the surface of the earth until it touches it at the next point of landing with no factors applied.

The *FACTORED flight hours* is the *unfactored hours TIS* multiplied by a frequency of event hour factor based on the torque (horsepower) of the helicopter model in which it was installed and the usage of the helicopter.

The *revised hours TIS* is the new hours TIS for the mast as determined by following the instructions in this appendix.

An *external load lift* is defined as a lift where the load is carried, or extends, outside of the aircraft fuselage.

#### Calculation of RIN and Revised Hours TIS

There are two methods for calculating the accumulated RIN and the revised hours TIS, depending on the available service history information for the mast. In some cases, one method will be used for a portion of the mast service history, and the other method will be used for another portion of the mast service history. Both methods require knowledge of all the helicopter models in which the mast was installed.

#### Calculation of RIN and Revised Hours TIS When the Exact Number of Takeoffs and External Load Lifts Is Known (Reference Tables 1 and 3)

Table 1 of Appendix 1 is the worksheet for calculating the accumulated mast RIN when the exact number of takeoffs and external load lifts *is known*. Table 3 of Appendix 1 is the worksheet that has the frequency of event hour factors to calculate the FACTORED flight hours for the *unfactored hours TIS* for the mast while installed on a helicopter operated *with* a hub spring or the hub spring installation history *is unknown*.

The RIN factor for each external load lift is twice that specified for each takeoff because two torque events are experienced during a typical external load lift.

Using Table 1, calculate accumulated RIN as follows:

1. Enter the total number of takeoffs for the particular mast model/helicopter model combination in column (C).

2. Multiply the value entered in column (C) by the RIN factor listed in column (D), and enter the result in column (E). This is the total accumulated RIN due to takeoffs.

3. Enter the total number of external load lifts for the particular mast model/helicopter model combination in column (F).

4. Multiply the value entered in column (F) by the RIN factor listed in column (G), and enter the result in column (H). This is the accumulated RIN due to external load lifts.

5. Add the values from column (E) and column (H) and enter the result in column (I). This is the total accumulated RIN to-date for the mast for the particular mast model/helicopter model combination.

6. Add the accumulated RIN subtotals for the various mast model/helicopter combinations in column (I) and enter the result in the space provided. This is the total accumulated RIN for the mast.

Using Table 3, calculate the revised hours TIS as follows:

7. Determine the *unfactored hours TIS* for the mast while installed on a helicopter operated *with* a hub spring or the number of hours TIS for which you do not know whether a hub spring was installed for each of the particular mast model/helicopter model combinations.

8. Determine the frequency of events per hour for each of the particular mast model/helicopter model combinations dividing the combined number of takeoffs and external load lifts by the corresponding *unfactored hours TIS*.

9. Multiply the value for *unfactored hours TIS* for each of the particular mast model/helicopter model combinations by the appropriate value in column (E) of Table 3 for the frequency of event hour factor. These are the total FACTORED flight hours for the particular mast model/helicopter model combinations.

10. Add the FACTORED flight hour subtotals for each of the particular mast model/helicopter model combinations. This is the total FACTORED flight hours for the mast while installed on a helicopter operated *with* a hub spring or when you do not know whether a hub spring was installed.

11. Determine the *unfactored hours TIS* for the mast while installed on a helicopter operated *without* a hub spring.

12. Add to the total FACTORED flight hours for the mast while installed on a helicopter operated *with* a hub spring or those hours during which you do not know whether a hub spring was installed to the *unfactored hours TIS* as determined in step 11. This is the total revised hours TIS for the mast when the exact number of takeoffs and external load lifts *is known*.

#### Calculation of RIN and Revised Hours TIS When Exact Number of Takeoffs and External Load Lifts Is Unknown (Reference Tables 2, 3, and 4)

Tables 2, 3, and 4 of Appendix 1 are the worksheets for calculating the FACTORED flight hours and accumulated mast RIN when the exact number of takeoffs and external load lifts *is unknown*.

Using Tables 2, 3, and 4, calculate the accumulated mast RIN and revised hours TIS as follows:

1. Enter the *unfactored hours TIS* for the particular mast model/helicopter model combination in column (C) of Tables 2 and 3.

2. Using service history for the mast, select the appropriate frequency of event hour factor from column (E) of Tables 2 and 3 based on the total combined number of takeoffs and external load lifts per hour shown in column (D).

3. Multiply the value for *unfactored hours TIS* entered in column (C) by the appropriate value in column (E) for the frequency of event hour factor as determined in step 2. Enter the result in column (F) of Tables 2 and 3. This is the total FACTORED flight hours

for the particular mast model/helicopter model combination.

4. Enter the value for FACTORED flight hours from column (F) of Tables 2 and 3 into column (C) of Table 4.

5. Using Table 4, multiply the value for FACTORED flight hours in column (C) by the appropriate RIN conversion factor listed in column (D), by the appropriate RIN adjustment factor in column (E), and enter the result in column (F). This is the accumulated RIN to-date for the particular mast model/helicopter model combination.

6. Add the accumulated RIN subtotals for the various mast model/helicopter model combinations in column (F) of Table 4 and enter the result in the space provided. This is the total accumulated RIN for the mast.

7. Add the factored flight hour subtotals for the various mast model/helicopter model combinations as determined in steps 1 through 4. This is the total revised hours TIS for the mast when the exact number of takeoffs and external load lifts *is unknown*.

#### Sample Mast Calculation

Given the following known service history for the mast:

Mast, P/N 204-011-450'007, was first purchased as a United States military surplus part with valid historical records. The mast had accumulated 550 hours military TIS on an Army UH-1H with a hub spring installed.

The mast was first installed on a restricted category UH-1H former military helicopter for 250 hours TIS. The helicopter had a rating of 1100 takeoff horsepower (T.O. hp) at sea level standard day conditions (SLS), and the operation of the helicopter *without* a hub spring cannot be determined. The helicopter was used for fire fighting operations and the exact number of takeoffs and external load lifts is unknown. It is known, however, that the helicopter averaged less than 15 combined takeoffs and external load lifts per hour.

The mast was then removed and subsequently installed on a restricted category UH-1E former military helicopter (1100 T.O. hp SLS rating) *without* a hub spring for 450 hours TIS. It is known that the helicopter was used primarily for aerial surveying for the first 200 hours of operation. The exact number of takeoffs and external load lifts is unknown, but it is known that the helicopter averaged less than 16 takeoffs per hour, with no external load lifts. It was subsequently used for repeated heavy lift operation for the next 250 hours of operation and averaged between 25 and 31 combined takeoffs and external load lifts per hour during this period of time.

The mast was then removed and installed on another restricted category UH-1H former military helicopter (1100 T.O. hp SLS rating) for a total of 150 hours TIS with accurate records indicating that it experienced 100 takeoffs and 2,450 external load lifts. A hub spring was installed on the helicopter for the first 50 hours of operation with a calculated average of 19 combined takeoffs and external load lifts per hour (as determined from aircraft records for the first 50 hours of operation). The hub spring was subsequently removed for the remaining 100 hours TIS.

Calculate the FACTORED flight hours and total accumulated RIN for the mast as follows:

*FACTORED Flight Hours and Accumulated RIN While Installed in U.S. Military Model UH-1H*

Calculate FACTORED flight hours from Table 3 as follows:

FACTORED Flight Hours

$$\begin{aligned} &= (\text{unfactored hours TIS}) \times (\text{frequency of event hour factor}) \\ &= (\text{column C}) \times (\text{column E}) \\ &= (550) \times (10) \\ &= 5,500 \text{ hours} \end{aligned}$$

Then using Table 4, calculate the accumulated RIN as follows:

Accumulated RIN

$$\begin{aligned} &= (\text{FACTORED flight hours}) \times (\text{RIN conversion factor}) \times (\text{RIN adjustment factor}) \\ &= (\text{column C}) \times (\text{column D}) \times (\text{column E}) \\ &= (5,500) \times (20) \times (1) \\ &= 110,000 \text{ RIN} \end{aligned}$$

*FACTORED Flight Hours and Accumulated RIN While Installed in Restricted Category Model UH-1H*

Calculate FACTORED flight hours from Table 3 as follows:

FACTORED Flight Hours

$$\begin{aligned} &= (\text{unfactored hours TIS}) \times (\text{frequency of event hour factor}) \\ &= (\text{column C}) \times (\text{column E}) \\ &= (250) \times (14) \\ &= 3,500 \text{ hours} \end{aligned}$$

Then using Table 4, calculate the accumulated RIN as follows:

Accumulated RIN

$$\begin{aligned} &= (\text{FACTORED flight hours}) \times (\text{RIN conversion factor}) \times (\text{RIN adjustment factor}) \\ &= (\text{column C}) \times (\text{column D}) \times (\text{column E}) \\ &= (3,500) \times (20) \times (1) \\ &= 70,000 \text{ RIN} \end{aligned}$$

*FACTORED Flight Hours and Accumulated RIN While Installed in Restricted Category Model UH-1E*

Calculate FACTORED flight hours from Table 2 as follows:

FACTORED Flight Hours (for first 200 hrs.)

$$\begin{aligned} &= (\text{unfactored hours TIS}) \times (\text{frequency of event hour factor}) \\ &= (\text{column C}) \times (\text{column E}) \\ &= (200) \times (5) \\ &= 1,000 \text{ hours} \end{aligned}$$

FACTORED Flight Hours (for next 250 hrs.)

$$\begin{aligned} &= (\text{unfactored hours TIS}) \times (\text{frequency of event hour factor}) \\ &= (\text{column C}) \times (\text{column E}) \\ &= (250) \times (10) \\ &= 2,500 \text{ hours} \end{aligned}$$

Then using Table 4, calculate the accumulated RIN as follows:

Accumulated RIN

$$\begin{aligned} &= (\text{FACTORED flight hours}) \times (\text{RIN conversion factor}) \times (\text{RIN adjustment factor}) \\ &= (\text{column C}) \times (\text{column D}) \times (\text{column E}) \\ &= (1,000) \times (20) \times (1) + (2,500) \times (20) \times (1) \\ &= 20,000 + 50,000 \\ &= 70,000 \text{ RIN} \end{aligned}$$

*FACTORED Flight Hours and Accumulated RIN While Installed in Another Restricted Category Model UH-1H*

Calculate the accumulated RIN from Table 1 and the given number of takeoffs and external load lifts as follows:

Accumulated RIN

$$\begin{aligned} &= (\text{number of takeoffs} \times \text{RIN factor per takeoff}) + (\text{number of external load lifts} \times \text{RIN factor per external load lifts}) \\ &= (\text{column C}) \times (\text{column D}) + (\text{column F}) \times (\text{column G}) \\ &= (100) \times (3) + (2,450) \times (6) \\ &= 15,000 \text{ RIN} \end{aligned}$$

Calculate the FACTORED flight hours for the mast while installed on a helicopter operated *with* a hub spring or when you do not know whether a hub spring was installed using the frequency of event hour factors from Table 3 as follows:

FACTORED Flight Hours (w/hub spring)

$$\begin{aligned} &= (\text{unfactored hours TIS}) \times (\text{frequency of event hour factor}) \\ &= (\text{column C}) \times (\text{column E}) \\ &= (50) \times (16) \\ &= 800 \text{ hours} \end{aligned}$$

Unfactored Hours TIS (w/o hub spring)

$$\begin{aligned} &= (\text{unfactored hours TIS}) \\ &= 100 \text{ hours} \end{aligned}$$

Note that the FACTORED flight hours are not used in the accumulated RIN calculations

when the number of takeoffs and external load lifts *is known*.

*Calculate the Total Accumulated RIN and Revised Hours TIS as follows*

The total accumulated RIN to-date for the mast is the sum of the subtotals from Tables 1 and 4.

Total Accumulated RIN

$$\begin{aligned} &= 110,000 + 70,000 + 70,000 + 15,000 \\ &= 265,000 \end{aligned}$$

The total FACTORED flight hours for the mast is the sum of the subtotals from Tables 2 and 3 and the total FACTORED flight hours as determined in the preceding step 12 when the exact number of takeoff and external load lifts *is known*.

Total FACTORED Flight Hours

$$\begin{aligned} &= 5,500 + 3,500 + 1,000 + 2,500 + 800 \\ &= 13,300 \text{ hours} \end{aligned}$$

The revised hours TIS to-date for the mast is the sum of the total FACTORED flight hours and the additional *unfactored* hours TIS for the mast while installed on a helicopter operated without a hub spring and the exact number of takeoffs and external load lifts *is known*.

Revised Hours TIS

$$\begin{aligned} &= 5,500 + 3,500 + 1,000 + 2,500 + 800 + 100 \\ &= 13,300 + 100 \\ &= 13,400 \text{ hours} \end{aligned}$$

Both the total accumulated RIN and the revised hours TIS need to be determined and checked for exceeding the allowable life limits for the mast. Also, note that the recalculated total accumulated RIN for this sample mast would be 265,000 RIN. Therefore, this mast would be removed from service.

The values for the sample problem are shown in Tables 1–4 for illustration purposes only. The FACTORED flight hours TIS shown in the brackets in Table 3 are calculated for the mast while installed on a helicopter operated *with* a hub spring or when you do not know whether a hub spring was installed and the exact number of takeoffs and external load lifts *is known*. These FACTORED flight hours are not used in the accumulated RIN calculations.

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Mast RIN Calculation Based on Takeoffs and External Load Lifts

Mast A/C Model Installation	Mast P/N 204-011-450	Number Of Takeoffs	RIN Factor Per Takeoff	Total Takeoff RIN = (C) x (D)	Number of External Load Lifts	RIN Factor Per External Load Lift	Total External Load Lift RIN = (F) x (G)	Accumulated RIN = (E) + (H)
(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)
Restricted Category TIS (<=700 T.O. hp SLS)	204-011-450-007		0.25			0.5		
	204-011-450-105		0.25			0.5		
	204-011-450-109		0.25			0.5		
Restricted Category TIS (700<T.O. hp SLS <=1000)	204-011-450-007		1.5			3		
	204-011-450-105		1.5			3		
	204-011-450-109		1.5			3		
Restricted Category TIS (1000<T.O. hp SLS <=1100)	204-011-450-007	100	3	300	2,450	6	14,700	15,000
	204-011-450-105		3			6		
	204-011-450-109		3			6		
Restricted Category TIS (1100<T.O. hp SLS <=1290)	204-011-450-007		6			12		
	204-011-450-105		6			12		
	204-011-450-109		6			12		
Restricted Category TIS (>1290 T.O. hp SLS)	204-011-450-007		Contact FAA*			Contact FAA*		Contact FAA*
	204-011-450-105		Contact FAA*			Contact FAA*		Contact FAA*
	204-011-450-109		Contact FAA*			Contact FAA*		Contact FAA*
<b>Total RIN=</b>								<b>15,000</b>

\*Contact FAA at (817) 222-5447

Appendix 1 - Table 1

Calculation of Mast FACTORED Flight Hours (Without a Hub Spring Installed)

Mast A/C Model Installation	Mast P/N 204-011-450 (without a hub spring installed)	Unfactored Hours TIS on Model	Frequency Of Events Per Hour	Frequency of Event Hour Factor	FACTORED Flight Hours On Model
(A)	(B)	(C)	(D)	(E)	(F) = (C) x (E)
Restricted Category TIS (≤700 T.O. hp SLS)	204-011-450-007, -105, or -109		1.0-37.00	1.00	
			37.01-46.00	1.25	
			46.01-55.00	1.50	
			55.01-63.00	1.75	
			Greater than 63.00	Contact FAA*	
			Unknown	1.75	
Restricted Category TIS (700<T.O. hp SLS ≤1000)	204-011-450-007, -105, or -109		1.0-7.00	1.00	
			7.01-13.00	2.00	
			13.01-18.00	3.00	
			18.01-30.00	5.00	
			30.01-41.00	7.00	
			41.01-52.00	9.00	
			52.01-63.00	11.00	
			Greater than 63.00	Contact FAA*	
			Unknown	11.00	
Restricted Category TIS (1000<T.O. hp SLS ≤1100)	204-011-450-007, -105, or -109		1.0-5.00	1.00	
			5.01-7.00	2.00	
			7.01-10.00	3.00	
		<b>200</b>	10.01-16.00	5.00	<b>1,000</b>
			16.01-24.00	7.50	
		<b>250</b>	24.01-31.00	10.00	<b>2,500</b>
			31.01-46.00	15.00	
			46.01-61.00	20.00	
			Greater than 61.00	Contact FAA*	
Restricted Category TIS (1100<T.O. hp SLS ≤1290)	204-011-450-007, -105, or -109		1.0-5.00	2.10	
			5.01-7.00	4.00	
			7.01-10.00	6.00	
			10.01-15.00	9.00	
			15.01-19.00	12.00	
			19.01-25.00	16.00	
			25.01-31.00	20.00	
			31.01-46.00	30.00	
			46.01-60.00	40.00	
			Greater than 60.00	Contact FAA*	
Military TIS (≤700 T.O. hp SLS)	204-011-450-007, -105, or -109				
			All	1.00	
			All	2.00	
			All	3.50	
			All	7.00	
			All	Contact FAA*	
(≤1000 T.O. hp SLS)					
(≤1100 T.O. hp SLS)					
(≤1290 T.O. hp SLS)					
(>1290 T.O. hp SLS)					

\*Contact FAA at (817) 222-5447

## Calculation of Mast FACTORED Flight Hours (With a Hub Spring Installed)

Mast A/C Model Installation	Mast P/N 204-011-450 (with a hub spring or for which you do not know whether a hub spring was installed)	Unfactored Hours TIS on Model	Frequency Of Events Per Hour	Frequency of Event Hour Factor	FACTORED Flight Hours On Model
(A)	(B)	(C)	(D)	(E)	(F) = (C) x (E)
Restricted Category TIS ( $\leq 700$ T.O. hp SLS)	204-011-450-007, -105, or -109		1.0-6.00	10.00	
			6.01-12.00	10.25	
			12.01-21.00	10.50	
			21.01-39.00	11.00	
			39.01-63.00	11.75	
			Greater than 63.00 Unknown	Contact FAA* 11.75	
Restricted Category TIS (700 < T.O. hp SLS $\leq 1000$ )	204-011-450-007, -105, or -109		1.0-6.00	10.00	
			6.01-15.00	12.00	
			15.01-26.00	14.00	
			26.01-37.00	16.00	
			37.01-49.00	18.00	
			49.01-63.00 Greater than 63.00 Unknown	21.00 Contact FAA* 21.00	
Restricted Category TIS (1000 < T.O. hp SLS $\leq 1100$ )	204-011-450-007, -105, or -109		1.0-6.00	10.00	
			6.01-9.00	12.00	
		<b>250</b>	9.01-15.00	14.00	<b>3,500</b>
		<b>&lt;50&gt;</b>	15.01-21.00	16.00	<b>&lt;800&gt;</b>
			21.01-33.00	20.00	
			33.01-45.00 45.01-61.00 Greater than 61.00 Unknown	24.00 30.00 Contact FAA* 30.00	
Restricted Category TIS (1100 < T.O. hp SLS $\leq 1290$ )	204-011-450-007, -105, or -109		1.0-6.00	10.00	
			6.01-11.00	15.00	
			11.01-18.00	20.00	
			18.01-26.00	25.00	
			26.01-33.00	30.00	
			33.01-40.00 40.01-48.00 48.01-60.00 Greater than 60.00 Unknown	35.00 40.00 50.00 Contact FAA* 50.00	
Military TIS ( $\leq 1290$ hp T.O. SLS)	204-011-450-007, -105,	<b>550</b>	All	10.00	<b>5,500</b>
( $> 1290$ hp T.O. SLS)	or -109		All	Contact FAA*	

\*Contact FAA at (817) 222-5447

Mast RIN Calculation Based on Hours TIS

Mast A/C Model Installation	Mast P/N 204-011-450	FACTORED Flight Hours On Model	RIN Conversion Factor	RIN Adjustment Per AD 2000-15-52	Accumulated RIN
(A)	(B)	(C) (From Table 2 of Appendix I)	(D)	(E)	(F) =(C) x (D) x (E)
Restricted Category or Military TIS with (<=1290 T.O. hp SLS)	204-011-450-007	12,500	20	1	250,000
	204-011-450-105		20	1	
	204-011-450-109		20	1	
Restricted Category or Military TIS with (>1290 T.O. hp SLS)	204-011-450-007	Contact FAA*	Contact FAA*	Contact FAA*	Contact FAA*
	204-011-450-105				
	204-011-450-109				
Total RIN =					250,000

\*Contact FAA at (817) 222-5447

Appendix 1 - Table 4

Subtotals for the FACTORED Flight Hours and Accumulated RIN For Table 4 of the Sample Mast Calculation:

FACTORED Flight Hours	Accumulated RIN
5,500 X 20 =	110,000
3,500 X 20 =	70,000
3,500 X 20 =	70,000
12,500	250,000

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## Appendix 2—AD Compliance Inspection Report (Sample Format) P/N 204-011-450-007/-105/-109 Main Rotor Mast

Provide the following information and mail or fax it to: Manager, Rotorcraft Certification Office, Federal Aviation Administration, Fort Worth, Texas, 76193-0170, USA; Fax: 817-222-5783.

Aircraft Registration No: \_\_\_\_\_.

Helicopter Model: \_\_\_\_\_.

Helicopter S/N: \_\_\_\_\_.

Mast P/N: \_\_\_\_\_.

Mast S/N: \_\_\_\_\_.

Mast RIN: \_\_\_\_\_.

Mast Total TIS: \_\_\_\_\_.

### Inspection Results

Were any radii during inspection of this mast determined to be less than 0.020 inch? If yes, what was the dimension measured?

Was a burr found in the inspected snap ring grooves?

Were cracks noted during the inspection?

Who performed this inspection?

Provide any other comments?

## Appendix 3—Instructions for Calculating Trunnion the RIN and Revised Hours TIS

### Definitions for the RIN

The overall *fatigue life* of a main rotor trunnion is a function of the number of cycles of torque, lift, and bending loads applied to it during the various modes of operation. The trunnion experiences both high cycle fatigue and low cycle fatigue during operation.

The *high cycle fatigue life* of the trunnion is a function of high frequency but relatively low level cyclic loads, which are primarily induced by rotor rpm. The high cycle fatigue life limit for the trunnion is defined in terms of hours TIS because rotor rpm is basically a constant value.

The *low cycle fatigue life* of the trunnion is a function of the number of less frequent but relatively high level cyclic loads experienced primarily during takeoffs and external load lifts. The low cycle fatigue life limit for the trunnion is expressed in terms of the accumulated RIN.

A *load cycle* is a power cycle caused by a repeating or fluctuating load that alternates from a starting power value, goes to a higher power value, and returns to the starting power value.

The *accumulated RIN* is defined as the total number of load cycles multiplied by a RIN factor to account for the difference in torque levels applied to the same trunnion (since manufactured) when installed in different helicopter models. The level of torque applied to the trunnion is directly proportional to the transmission output horsepower.

The *unfactored hours TIS* is the time from the moment a helicopter leaves the surface of the earth until it touches it at the next point of landing with no factors applied.

The *FACTORED flight hours* is the *unfactored hours TIS* multiplied by a frequency of event hour factor based on the

torque (horsepower) of the helicopter model in which it was installed and the usage of the helicopter.

The *revised hours TIS* is the new hours TIS for the trunnion as determined by following the instructions in this appendix.

An *external load lift* is defined as a lift where the load is carried, or extends, outside of the aircraft fuselage.

### Calculation of RIN and Revised Hours TIS

There are two methods for calculating the accumulated RIN and the revised hours TIS, depending on the available service history information for the trunnion. In some cases, one method will be used for a portion of the trunnion service history, and the other method will be used for another portion of the trunnion service history. Both methods require knowledge of all the helicopter models in which the trunnion was installed.

Calculation of RIN and Revised Hours TIS When the Exact Number of Takeoffs and External Load Lifts Is *Known* (Reference Table 1)

Table 1 of Appendix 3 is the worksheet for calculating the accumulated trunnion RIN when the exact number of takeoffs and external load lifts is *known*.

The RIN factor for each external load lift is twice that specified for each takeoff because two torque events are experienced during a typical external load lift.

Using Table 1, calculate the accumulated RIN as follows:

1. Enter the total number of takeoffs for the particular trunnion model/helicopter model combination in column (C).

2. Multiply the value entered in column (C) by the RIN factor listed in column (D), and enter the result in column (E). This is the total accumulated RIN due to takeoffs.

3. Enter the total number of external load lifts for the particular trunnion model/helicopter model combination in column (F).

4. Multiply the value entered in column (F) by the RIN factor listed in column (G), and enter the result in column (H). This is the accumulated RIN due to external load lifts.

5. Add the values from column (E) and column (H) and enter the result in column (I). This is the total accumulated RIN to-date for the trunnion for the particular trunnion model/helicopter model combination.

6. Add the accumulated RIN subtotals for the various trunnion model/helicopter combinations in column (I) and enter the result in the space provided. This is the total accumulated RIN for the trunnion.

Calculation of RIN and Revised Hours TIS When Exact Number of Takeoffs and External Load Lifts Is *Unknown* (Reference Tables 2 and 3)

Tables 2 and 3 of Appendix 3 are the worksheets for calculating the FACTORED flight hours and accumulated trunnion RIN when the exact number of takeoffs and external load lifts is *unknown*.

Using Tables 2 and 3, calculate the accumulated trunnion RIN and revised hours TIS as follows:

1. Enter the *unfactored hours TIS* for the particular trunnion model/helicopter model combination in column (C) of Table 2.

2. Using service history for the trunnion, select the appropriate frequency of event

hour factor from column (E) of Table 2 based on the total combined number of takeoffs and external load lifts per hour shown in column (D).

3. Multiply the value for *unfactored hours TIS* entered in column (C) by the appropriate value in column (E) for the frequency of event hour factor as determined in step 2. Enter the result in column (F) of Table 2. This is the total FACTORED flight hours for the particular trunnion model/helicopter model combination.

4. Enter the value for FACTORED flight hours from column (F) of Table 2 into column (C) of Table 3.

5. Using Table 3, multiply the value for FACTORED flight hours in column (C) by the appropriate RIN conversion factor listed in column (D), by the appropriate RIN adjustment factor in column (E), and enter the result in column (F). This is the accumulated RIN to-date for the particular trunnion model/helicopter model combination.

6. Add the accumulated RIN subtotals for the various trunnion model/helicopter model combinations in column (F) of Table 3 and enter the result in the space provided. This is the total accumulated RIN for the trunnion.

7. Add the factored flight hour subtotals for the various trunnion model/helicopter model combinations as determined in steps 1 through 4. This is the total revised hours TIS for the trunnion when the exact number of takeoffs and external load lifts is *unknown*.

### Sample Trunnion Calculation

Given the following known service history for the trunnion:

Trunnion, P/N 204-011-105-001, was first purchased as a United States military surplus part with valid historical records. The trunnion had accumulated 550 hours military TIS on an Army UH-1H.

The trunnion was first installed on a restricted category UH-1H former military helicopter (1100 T.O. hp SLS rating) for 450 hours TIS. It is known that the helicopter was used primarily for aerial surveying for the first 200 hours of operation. The exact number of takeoffs and external load lifts is unknown, but it is known that the helicopter averaged less than 16 takeoffs per hour with no external load lifts. It was subsequently used for repeated heavy lift operation for the next 250 hours of operation and averaged between 25 and 31 combined takeoffs and external load lifts per hour during this period of time.

The trunnion was then removed and subsequently installed on a restricted category UH-1E former military helicopter (1100 T.O. hp SLS rating) for a total of 150 hours TIS with accurate records indicating that it experienced 100 takeoffs and 2,450 external load lifts.

Calculate the FACTORED flight hours and total accumulated RIN for the trunnion as follows:

*FACTORED Flight Hours and Accumulated RIN While Installed in U.S. Military Model UH-1H:*

Calculate FACTORED flight hours from Table 2 as follows:  
FACTORED Flight Hours

$$\begin{aligned}
 &= (\text{unfactored hours TIS}) \times (\text{frequency of event hour factor}) \\
 &= (\text{column C}) \times (\text{column E}) \\
 &= (550) \times (1) \\
 &= 550 \text{ hours}
 \end{aligned}$$

Then using Table 3, calculate the accumulated RIN as follows:

$$\begin{aligned}
 \text{Accumulated RIN} &= (\text{FACTORED flight hours}) \times (\text{RIN conversion factor}) \times (\text{RIN adjustment factor}) \\
 &= (\text{column C}) \times (\text{column D}) \times (\text{column E}) \\
 &= (550) \times (20) \times (1) \\
 &= 11,000 \text{ RIN}
 \end{aligned}$$

*FACTORED Flight Hours and Accumulated RIN While Installed in Restricted Category Model UH-1H*

Calculate FACTORED flight hours from Table 2 as follows:

$$\begin{aligned}
 \text{FACTORED Flight Hours (for first 200 hours)} &= (\text{unfactored hours TIS}) \times (\text{frequency of event hour factor}) \\
 &= (\text{column C}) \times (\text{column E}) \\
 &= (200) \times (1) \\
 &= 200 \text{ hours}
 \end{aligned}$$

$$\begin{aligned}
 \text{FACTORED Flight Hours (for next 250 hours)} &= (\text{unfactored hours TIS}) \times (\text{frequency of event hour factor}) \\
 &= (\text{column C}) \times (\text{column E}) \\
 &= (250) \times (2) \\
 &= 500 \text{ hours}
 \end{aligned}$$

Then using Table 3, calculate the accumulated RIN as follows:

$$\begin{aligned}
 \text{Accumulated RIN} &= (\text{FACTORED flight hours}) \times (\text{RIN conversion factor}) \times (\text{RIN adjustment factor}) \\
 &= (\text{column C}) \times (\text{column D}) \times (\text{column E}) \\
 &= (200) \times (20) \times (1) + (500) \times (20) \times (1) \\
 &= 4,000 + 10,000 \\
 &= 14,000 \text{ RIN}
 \end{aligned}$$

*FACTORED Flight Hours and Accumulated RIN While Installed in Restricted Category Model UH-1E*

Calculate the accumulated RIN from Table 1 and the given number of takeoffs and external load lifts as follows:

$$\begin{aligned}
 \text{Accumulated RIN} &= (\text{number of takeoffs} \times \text{RIN factor per takeoff}) + (\text{number of external load lifts} \times \text{RIN factor per external load lifts}) \\
 &= (\text{column C}) \times (\text{column D}) + (\text{column F}) \times (\text{column G}) \\
 &= (100) \times (1.5) + (2,450) \times (3) \\
 &= 7,500 \text{ RIN}
 \end{aligned}$$

*Calculate the Total Accumulated RIN and Revised Hours TIS as follows*

The total accumulated RIN to-date for the trunnion is the sum of the subtotals from Tables 1 and 3.

Total Accumulated RIN

$$\begin{aligned}
 &= 11,000 + 14,000 + 7,500 \\
 &= 32,500
 \end{aligned}$$

The total FACTORED flight hours for the trunnion is the sum of the subtotals from Table 2.

$$\begin{aligned}
 \text{Total FACTORED Flight Hours} &= 550 + 200 + 500 \\
 &= 1,250 \text{ hours}
 \end{aligned}$$

The revised hours TIS to-date for the trunnion is the sum of the total FACTORED flight hours and the additional *unfactored hours* TIS for the trunnion when the exact number of takeoff and external load lifts is known.

$$\begin{aligned}
 \text{Revised Hours TIS} &= 550 + 200 + 500 + 150 \\
 &= 1,250 + 150 \\
 &= 1,400 \text{ hours}
 \end{aligned}$$

Both the total accumulated RIN and the revised hours TIS need to be determined and checked for exceeding the allowable life limits for the trunnion.

The values for the sample problem are shown in Tables 1-3 for illustration purposes only.

**BILLING CODE 4910-13-P**

Trunion RIN Calculation Based on Takeoffs and External Load Lifts

Trunion A/C Model Installation	Trunion P/N 204-011-105	Number Of Takeoffs	RIN Factor Per Takeoff	Total Takeoff RIN	Number of External Load Lifts	RIN Factor Per External Load Lift	Total External Load Lift RIN	Accumulated RIN
(A)	(B)	(C)	(D)	(E) = (C) x (D)	(F)	(G)	(H) = (F) x (G)	(I) = (E) + (H)
Restricted Category TIS (<700 T.O. hp SLS)	204-011-105-001		0.25			0.5		
Restricted Category TIS (700<T.O. hp SLS ≤1000)	204-011-105-001		1			2		
Restricted Category TIS (1000<T.O. hp SLS ≤1100)	204-011-105-001	100	1.5	150	2,450	3	7,350	7,500
Restricted Category TIS (1100<T.O. hp SLS ≤1290)	204-011-105-001		5			10		
Restricted Category TIS (>1290 T.O. hp SLS)	204-011-105-001		Contact FAA*			Contact FAA*		Contact FAA*
<b>Total RIN=</b>								<b>7,500</b>

\*Contact FAA at (817) 222-5447

Appendix 3 - Table 1

**Calculation of Trunnion FACTORED Flight Hours**

<b>Trunnion A/C Model Installation</b>	<b>Trunnion P/N 204-011-105</b>	<b>Unfactored Hours TIS on Model</b>	<b>Frequency Of Events Per Hour</b>	<b>Frequency of Event Hour Factor</b>	<b>FACTORED Flight Hours On Model</b>
<b>(A)</b>	<b>(B)</b>	<b>(C)</b>	<b>(D)</b>	<b>(E)</b>	<b>(F) = (C) x (E)</b>
Restricted Category TIS (≤1000 T.O. hp SLS))	204-011-105-001		1.0-40.00	1.00	
			Greater than 40.00	Contact FAA*	
			Unknown	1.00	
Restricted Category TIS (1000<T.O. hp SLS ≤1100)	204-011-105-001	<b>200</b>	1.0-20.00	1.00	<b>200</b>
		<b>250</b>	20.01-44.00	2.00	<b>500</b>
			44.01-69.00	3.00	
			Greater than 69.00	Contact FAA*	
			Unknown	3.00	
Restricted Category TIS (1100<T.O. hp SLS ≤1290)	204-011-105-001		1.0-5.00	1.00	
			5.01-8.00	1.50	
			8.01-12.00	2.00	
			12.01-18.00	3.00	
			18.01-32.00	5.00	
			32.01-48.00	7.00	
			48.01-62.00	9.00	
			Greater than 62.00	Contact FAA*	
	Unknown	9.00			
Military TIS (≤1100 T.O. hp SLS) (≤1290 T.O. hp SLS) (>1290 T.O. hp SLS)	204-011-105-001				
		<b>550</b>	All	1.00	<b>550</b>
			All	2.00	
			All	Contact FAA*	

\*Contact FAA at (817) 222-5447

Appendix 3 - Table 2



Trunnon RIN Calculation Based on Hours TIS

Trunnon A/C Model Installation	Trunnon P/N 204-011-105	FACTORED Flight Hours On Model	RIN Conversion Factor	RIN Adjustment Per AD 2000-15-52	Accumulated RIN
(A)	(B)	(C) (From Table 2 of Appendix D)	(D)	(E)	(F) =(C) x (D) x (E)
Restricted Category or Military TIS with ( $\leq 1000$ T.O. hp SLS)	204-011-105-001		20	1.0	
Restricted Category or Military TIS with ( $1000 < \text{T.O. hp SLS} \leq 1100$ )	204-011-105-001	1,250	20	1.0	25,000
Restricted Category or Military TIS with ( $1100 < \text{T.O. hp SLS} \leq 1290$ )	204-011-105-001		20	1.0	
Restricted Category or Military TIS with ( $> 1290$ T.O. hp SLS)	204-011-105-001	Contact FAA	Contact FAA	Contact FAA	Contact FAA
<b>Total RIN =</b>					<b>25,000</b>

Contact FAA at (817) 222-5447

Appendix 3 - Table 3

Subtotals for the FACTORED Flight Hours and Accumulated RIN For Table 3 of the Sample Trunnon Calculation:

FACTORED Flight Hours	Accumulated RIN
550 X 20 =	11,000
200 X 20 =	4,000
500 X 20 =	10,000
<b>1,250</b>	<b>25,000</b>

Issued in Fort Worth, Texas, on September 12, 2001.

**Eric Bries,**

*Acting Manager, Rotorcraft Directorate,  
Aircraft Certification Service.*

[FR Doc. 01-23415 Filed 9-20-01; 8:45 am]

**BILLING CODE 4910-13-C**

## LIBRARY OF CONGRESS

### Copyright Office

#### 37 CFR Part 260

[Docket No. 96-5 CARP DSTR]

#### Determination of Reasonable Rates and Terms for the Digital Performance of Sound Recordings

**AGENCY:** Copyright Office, Library of Congress.

**ACTION:** Proposed rule; extension of comment period.

**SUMMARY:** The Copyright Office is extending the period to file comments to proposed regulations that will govern the RIAA collective when it functions as the designated agent receiving royalty payments and statements of accounts from nonexempt, subscription digital transmission services which make digital transmissions of sound recordings under the provisions of section 114 of the Copyright Act.

**DATES:** Comments and Notices of Intent to Participate in a Copyright Arbitration Royalty Panel Proceeding are due no later than September 28, 2001.

**ADDRESSES:** An original and five copies of any comment and Notice of Intent to Participate shall be delivered to: Office of the General Counsel, Copyright Office, James Madison Building, Room LM-403, First and Independence Avenue, SE., Washington, DC; or mailed to: Copyright Arbitration Royalty Panel (CARP), P.O. Box 70977, Southwest Station, Washington, DC 20024-0977.

**FOR FURTHER INFORMATION CONTACT:** David O. Carson, General Counsel, or Tanya M. Sandros, Senior Attorney, Copyright Arbitration Royalty Panel, P.O. Box 70977, Southwest Station, Washington, DC 20024. Telephone: (202) 707-8380. Telefax: (202) 252-3423.

**SUPPLEMENTARY INFORMATION:** On July 23, 2001, the Copyright Office published a notice of proposed rulemaking seeking comments on proposed regulations that will govern the RIAA collective when it functions as the designated agent receiving royalty payments and statements of accounts from nonexempt, subscription digital transmission

services which make digital transmissions of sound recordings under the provisions of section 114 of the Copyright Act. 66 FR 38226 (July 23, 2001). Comments on the proposed terms and Notices of Intent to Participate in a Copyright Arbitration Royalty Panel Proceeding, the purpose of which would be to adopt terms governing the RIAA collective in its handling of royalty fees collected from the subscription services, were due on August 22, 2001.

On August 22, 2001, The American Federation of Musicians of the United States and Canada ("AFM") and The American Federation of Television and Radio Artists ("AFTRA") filed a request for an extension of the filing date for comments until September 19, 2001. The Office granted this request and extended the deadline for filing comments to September 19, 2001, 66 FR 46250 (September 4, 2001).

On September 14, 2001, AFM and AFTRA requested a further extension of the filing date for comments in light of the events of September 11, 2001, and stated that the RIAA joined in the request. The Office is granting this request and is extending the filing date for comments until September 28, 2001. There will be no further extensions of the filing date for comments in this proceeding.

Dated: September 18, 2001.

**David O. Carson,**

*General Counsel.*

[FR Doc. 01-23687 Filed 9-20-01; 8:45 am]

**BILLING CODE 1410-33-P**

## ENVIRONMENTAL PROTECTION AGENCY

#### 40 CFR Part 52

[CO-001-0060b; MT-001-0032b; FRL-7055-5]

#### Approval and Promulgation of Air Quality Implementation Plans for Colorado and Montana: Transportation Conformity

**AGENCY:** Environmental Protection Agency (EPA).

**ACTION:** Proposed rule.

**SUMMARY:** EPA is proposing to take direct final action to approve revisions to the Colorado and Montana State Implementation Plans (SIPs) that incorporate consultation procedures for transportation conformity. The conformity rules assure that in air quality nonattainment or maintenance areas, projected emissions from transportation plans and projects stay within the motor vehicle emissions

ceiling in the SIP. The transportation conformity SIP revisions enable the States to implement and enforce transportation conformity consultation procedures at the State level per regulations for Conformity to State or Federal Implementation Plans of Transportation Plans, Programs, and Projects Developed, Funded or Approved Under Title 23 U.S.C. or the Federal Transit Laws. Our approval action would streamline the conformity process and allow direct consultation among agencies at the local levels. EPA is taking this action under section 110(k) and 176 of the Clean Air Act (Act).

In the "Rules and Regulations" section of this **Federal Register**, EPA is approving the State's SIP revisions as a direct final rule without prior proposal because the Agency views these as non controversial revisions and anticipates no adverse comments. A detailed rationale for the approval is set forth in the preamble to the direct final rule. If EPA receives no adverse comments, EPA will not take further action on this proposed rule. If EPA receives adverse comments, EPA will withdraw the direct final rule and it will not take effect. EPA will address all public comments in a subsequent final rule based on this proposed rule. EPA will not institute a second comment period on this action. Any parties interested in commenting on this action should do so at this time.

**DATES:** Comments must be received in writing on or before October 22, 2001.

**ADDRESSES:** Written comments may be mailed to: Richard R. Long, Director, Air and Radiation Program, Mailcode 8P-AR, United States Environmental Protection Agency, Region VIII, 999 18th Street, Suite 300, Denver, Colorado 80202-2466.

Copies of the documents relevant to this action are available for public inspection during normal business hours at the following offices: United States Environmental Protection Agency, Region VIII, Air and Radiation Program, 999 18th Street, Suite 300, Denver, Colorado 80202-2466; and, United States Environmental Protection Agency, Air and Radiation Docket and Information Center, 401 M Street, SW., Washington, DC 20460.

Copies of the State documents relevant to this action are available for public inspection at: Colorado Department of Public Health and Environment, 4300 Cherry Creek Dr. S., Denver, Colorado 80246-1530. Montana Department of Environmental Quality, Planning, Prevention and Assistance