



**Van Horn Aviation, L.L.C.**  
1510 W. Drake Drive  
Tempe, Arizona 85283

**FAA APPROVED**

**ROTORCRAFT FLIGHT MANUAL SUPPLEMENT**

**For**

**VHA TAIL ROTOR BLADES**

**Installed On**

**AST UH-1F HELICOPTERS**


**REGISTRATION No.** \_\_\_\_\_

**SERIAL No.** \_\_\_\_\_

This supplement must be attached to the T.O. 1H-1(U)F-1, TH-1F, UH-1F and UH-1P Flight Manual when the Van Horn Aviation **VHA Tail Rotor Blades** are installed in accordance with STC No. SR02051LA.

The information contained herein supplements or supersedes the information in the Flight Manual only in those areas listed herein. For limitations, procedures, and performance data not contained in this supplement, consult the Flight Manual and applicable Flight Manual Supplements.

FAA Approved:

  
\_\_\_\_\_  
Manager, Flight Test Branch, ANM-160L  
Federal Aviation Administration  
Los Angeles Aircraft Certification Office  
Transport Airplane Directorate

Date:

  
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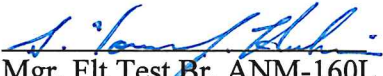
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RFM Supplement to the  
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**LOG OF PAGES**

Rev. No.	Page No.	Page Rev.	Description	FAA Approval
0	1 2 3 4 5 6	0 0 0 0 0 0	Original issue of complete supplement.	<u>/s/ Seyed-Youssef Hashemi</u> Mgr, Flt Test Br, ANM-160L FAA, Los Angeles ACO Transport Airplane Directorate  Date: <u>4/17/2008</u>
1	1* 2* 3* 4* 5* 6*	1 1 1 1 1 1	Revised supplement to incorporate Van Horn Aviation's new address.	<u>/s/ Seyed-Youssef Hashemi</u> Mgr, Flt Test Br, ANM-160L FAA, Los Angeles ACO Transport Airplane Directorate  Date: <u>07/02/2012</u>
2	1* 2* 3* 4* 5* 6*	2 2 2 2 2 2	Revised supplement to remove tail rotor part number.	 <u>S. Youssef Hashemi</u> Mgr, Flt Test Br, ANM-160L FAA, Los Angeles ACO Transport Airplane Directorate  Date: <u>March 2, 2017</u>

Revised pages marked with "\*" symbol.

**NOTE**

Revised text is indicated by a black vertical line.  
 Insert latest revision pages; dispose of superceded pages.



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STC No. SR02051LA

## TABLE OF CONTENTS

<u>TITLE</u>	<u>PAGE NO.</u>
Section I, Description.....	4
Section II, Normal Procedures.....	4
Section III, Emergency Procedures.....	5
Section IV, Auxiliary Equipment.....	5
Section V, Operating Limitations.....	5
Section VI, Flight Characteristics.....	5
Section VII, Systems Operation.....	5
Section VIII, Crew Duties.....	6
Section IX, All Weather Operation.....	6
Appendix I, Performance Data.....	6



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## **SECTION I DESCRIPTION**

### **TAIL ROTOR**

The tail rotor is a two-bladed, semi-rigid, delta hinged type employing preconing and underslinging. Each blade is connected to a common yoke by a grip and pitch change bearings. The blade and yoke assembly is mounted on the tail rotor shaft by a delta-hinge trunnion to minimize rotor flapping. Blade pitch is altered by movement of the tail rotor control pedals to control or maintain heading. This blade pitch change provides anti-torque control. Power to drive the tail rotor is supplied from a take-off on the lower aft section of the main rotor transmission.

### ***TAIL ROTOR BLADES***

The VHA 2042200-101/-103 tail rotor blade is an all composite blade employing an advanced high efficient airfoil. The blade length is the same as the existing production blade, but the chord has been increased by .80 inches. Erosion protection is provided by a full span stainless steel abrasion strip adhesively bonded to the leading edge. Stainless steel bushings are pressed into the inboard end, which react to the attachment bolt loads. The blade is constructed primarily of carbon/epoxy unidirectional tape. The grip plates, tip closure and root closure are fabricated from fiberglass/epoxy fabric. The blades are statically balanced at the factory using a brass balance weight threaded into the tip closure. The interior of the blade is filled with closed cell rigid foam.

## **SECTION II NORMAL PROCEDURES**

### **ENGINE RUNUP**

4.(a.)(4) Tail Rotor Controls – CHECK (Move pedals slowly to verify that Tail Rotor Pitch change can be make, “BOOST OFF”, and moves smoothly without vibration.

### **NOTE**

Without hydraulic boost and with the VHA 2042200-101/-103 tail rotor blades installed, a significantly higher force will be required to move the left pedal forward than to move the right pedal forward. However, little or no pedal force is required to maintain pedal position.



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## **SECTION III EMERGENCY PROCEDURES**

### **HYDRAULIC POWER SYSTEM FAILURE**

#### **NOTE**

Without hydraulic boost and with the VHA 2042200-101/-103 tail rotor blades installed, a significantly higher force will be required to move the left pedal forward than to move the right pedal forward. However, little or no pedal force is required to maintain pedal position.

## **SECTION IV AUXILIARY EQUIPMENT**

No change.

## **SECTION V OPERATING LIMITATIONS**

No change.

## **SECTION VI FLIGHT CHARACTERISTICS**

### **BOOST OFF CHARACTERISTICS**

#### **NOTE**

Without hydraulic boost and with the VHA 2042200-101/-103 tail rotor blades installed, a significantly higher force will be required to move the left pedal forward than to move the right pedal forward. However, little or no pedal force is required to maintain pedal position.

## **SECTION VII SYSTEMS OPERATION**

No change.



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## **SECTION VIII CREW DUTIES**

No change.

## **SECTION IX ALL WEATHER OPERATION**

### **BOOST-OFF OPERATIONS**

#### **NOTE**

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## **APPENDIX I PERFORMANCE DATA**

No change.