



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

SAN JOAQUIN HELICOPTERS
UH-1B HELICOPTERS

REGISTRATION No. _____

SERIAL No. _____

This supplement must be attached to the TM 55-1520-219-10 UH-1B Operator's 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 Operator's Manual only in those areas listed herein. For limitations, procedures, and performance data not contained in this supplement, consult the Operator's Manual and applicable Flight Manual Supplements.

FAA Approved:

A handwritten signature in blue ink, appearing to read 'S. J. J. J. J.', is written over a horizontal line.

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

Date:

A handwritten date in blue ink, 'March 2, 2017', is written over a horizontal line.

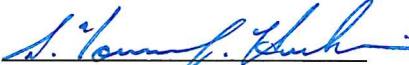
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 UH-1B Operator's Manual
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 STC No. SR02051LA

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.	/s/ <u>Seyed-Youssef Hashemi</u> Mgr, Flt Test Br, ANM-160L FAA, Los Angeles ACO Transport Airplane Directorate Date: <u>03/02/2010</u>
1	1* 2* 3* 4* 5* 6*	1 1 1 1 1 1	Revised supplement to incorporate Van Horn Aviation's new address	/s/ <u>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 Insert latest revision pages; dispose of superceded pages.



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CHAPTER 1 INTRODUCTION

No change.

CHAPTER 2 DESCRIPTION

2-92. 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 means of 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 control of torque and change of direction heading. Power to drive the tail rotor is supplied from a take-off on the lower end of the main rotor transmission.

a. *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.

CHAPTER 3 NORMAL PROCEDURES

3-29. ENGINE RUN-UP

2. Hydraulic System – Place switch in OFF position. Check controls for freedom of movement; ensure the collective pitch control is FULL DOWN; then place the switch in the ON position and position the FORCE TRIM switch ON.

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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CHAPTER 4 EMERGENCY PROCEDURES

4-61. HYDRAULIC POWER 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.

CHAPTER 5 AVIONICS

No change.

CHAPTER 6 AUXILIARY EQUIPMENT

No change.

CHAPTER 7 OPERATING LIMITATIONS

7-23. BASIC OPERATING WEIGHT.

There are no changes to the maximum weight or center-of gravity limitations shown in the TM 55-1520-219-10 UH-1B Operator's Manual. The VHA 2042200-101/-103 tail rotor blades are lighter than the existing production tail rotor blades. The empty weight change is recorded in helicopter's basic weight and balance chart.

Weight and Balance Data as specified in the TM 55-1520-219-10 UH-1B Operator's Manual and Flight Manual Supplements remain applicable.

CHAPTER 8 FLIGHT CHARACTERISTICS

No Change.



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CHAPTER 9 SYSTEMS OPERATION (Not Applicable)

No Change.

CHAPTER 10 WEATHER OPERATIONS

10-34. BOOST OUT OPERATION.

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.

CHAPTER 11 CREW DUTIES

No Change.

CHAPTER 12 WEIGHT AND BALANCE COMPUTATION

12-9. BASIC WEIGHT

There are no changes to the maximum weight or center-of gravity limitations shown in the TM 55-1520-219-10 UH-1B Operator's Manual. The VHA 2042200-101/-103 tail rotor blades are lighter than the existing production tail rotor blades. The empty weight change is recorded in helicopter's basic weight and balance chart.

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CHAPTER 13 AIRCRAFT LOADING

No Change.

CHAPTER 14 PERFORMANCE DATA

No Change.