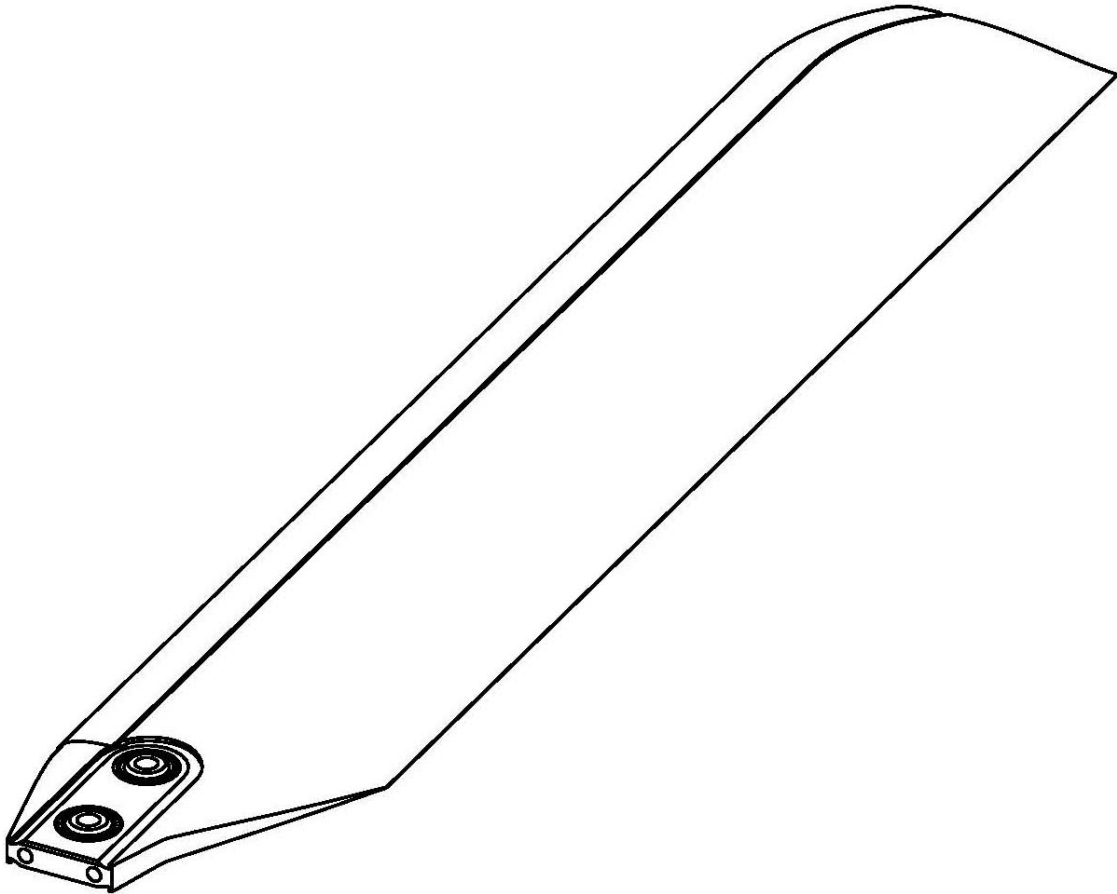




**Van Horn Aviation, L.L.C.**  
*1000 E. Vista Del Cerro Dr.*  
*Tempe, Arizona 85281*

## **INSTRUCTIONS FOR CONTINUED AIRWORTHINESS**



### **ICA MANUAL No. VMM-206L4-309**

**Tail Rotor Blade Assembly 2062200-101/-301**  
**Eligible for Installation on Model 206L4**

**REVISIONS**

REV	DATE	DESCRIPTION	APPROVED
N/C	10/30/09	Initial Release	JVH
A	6/8/10	Revised installation and rigging instructions – Page 9 only.	JVH
B	3/10/11	Replaced all references to 2062200-101 with 2062200-101/-301	JVH
C	7/19/11	Revised 5.1 to replace “inspection” with “check”.	JVH

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## **CHAPTER O - INTRODUCTION**

### **0.1 SCOPE**

This manual contains information, descriptions, and instructions essential for the continued airworthiness of the Van Horn Aviation L.L.C. 2062200-101/-301 Tail Rotor Blade Assembly.

### **0.2 ARRANGEMENT**

This manual follows the Airline Transport Association (ATA) specification 100 numbering system where practical.

### **0.3 UNITS OF MEASUREMENT**

All measurements, tolerances, and other numbers referenced in this manual will be in English units.

### **0.4 CHANGES TO THE ICA**

0.4.1 Changes to text and tables, including new material on added pages shall be indicated by a vertical bar in the outer margin extending close to the entire area of the material affected.

0.4.2 Please send any comments or corrections to Van Horn Aviation L.L.C., 1000 East Vista Del Cerro Drive, Tempe, Arizona, 85281 USA. Or call 01-480-483-4202.

### **0.5 DISTRIBUTION**

0.5.1 The ICA will be shipped with the original purchase of a 2062200-101/-301 tail rotor blade assembly.

0.5.2 Revisions to the ICA will be distributed to original purchaser of the rotor blade.

**CHAPTER 4 – AIRWORTHINESS LIMITATIONS**

**4.1. AIRWORTHINESS LIMITATIONS SCHEDULE**

<b>Part Number</b>	<b>Part Name</b>	<b>Airworthiness Limitation</b>
2062200-101/-301	Tail Rotor Blade	5000 Hours

FAA Approved: *[Signature]*

Date: July 21, 2011

**CHAPTER 5 – INSPECTION/CHECK REQUIREMENTS**

**5.1. PRE-FLIGHT CHECK**

No.	Requirements	Airworthiness Criteria
1.	Visually check the tail rotor blades for any visible damage such as cracks, blisters, delaminations, or local contour deformation.	No defects permitted.

**5.2. 100 HOUR INSPECTION AND ANNUALLY**

No.	Inspection Requirements	Airworthiness Criteria
1.	Check the general condition of the rotor blade. Check for skin dents, scratches, or blisters. Check the trailing edge for, nicks, or delaminations.	No defects permitted.
2.	Inspect feathering bearings for excessive axial wear. .015 inches of axial play at the bearing is permitted. The equivalent tip motion is .190 inches.	Have bearing replaced by an authorized service center if limits are exceeded.
3.	Inspect the abrasion strip for wear and edge voids.	Contact Van Horn Aviation if any discrepancies found.

**5.3 300 HOUR INSPECTION**

No.	Inspection Requirements	Airworthiness Criteria
1.	Perform dynamic balance of tail rotor	Balance to .20 IPS or lower.

**5.4 SUDDEN STOPPAGE OR ACCELERATION**

No.	Inspection Requirements	Airworthiness Criteria
1.	No inspection required	Remove the rotor blades and return to Van Horn Aviation for evaluation.

**5.4 OVERSPEED – 107 PERCENT OR GREATER**

No.	Inspection Requirements	Airworthiness Criteria
1.	Inspect the tail rotor blades for any visible damage such as cracks, blisters, delaminations, or local contour deformation. If any of these conditions exist on only one blade, scrap both blades and the tail rotor hub assembly.	No defects permitted.

**5.5 OVERTORQUE**

No.	Inspection Requirements	Airworthiness Criteria
1.	No inspection is required for overtorques between 100 to 110 percent.	N/A
2.	Overtorques 110 to 120 percent, Inspect the tail rotor blades for any visible damage such as cracks, blisters, delaminations, or local contour deformation. If any of these conditions exist, remove the rotor blades and return to Van Horn Aviation for evaluation.	No defects permitted.
3.	Overtorques above 120 percent require the inspections in 2. above at the time of the overtorque and again after 25 hours of operation.	No defects permitted.

**5.5 LIGHTNING STRIKE**

No.	Inspection Requirements	Airworthiness Criteria
1.	Scrap the blades if there is any evidence of a lightning strike. Return the scraped blades to Van Horn Aviation for testing.	No defects permitted.

## CHAPTER 11 – PLACARDS AND DECALS

There are no placards or decals associated with this STC.

## CHAPTER 62 – TAIL ROTOR BLADE

### **62.1 DESCRIPTION**

The 2062200-101/-301 tail rotor blade is a composite and metallic structure incorporating the NASA developed RC(4)-10(10% thick) rotor blade airfoil. This is a highly efficient laminar flow airfoil developed to have near zero pitching moments across a broad range of airspeeds. The blade radius is approximately .10 inches shorter than the existing production tail rotor blade. The blade chord length is the same as the existing blade at 5.25 inches. The tip of the blade is rounded to reduce noise and tip drag. The root fitting is machined from titanium alloy plate. The pitch bearings incorporate both a stainless steel race and sphere, and a Teflon liner. The sphere is chrome plated. The basic blade section is fabricated using unidirectional carbon/epoxy tape with a rigid cell structural foam core. Span balance is accomplished using threaded stainless steel screws in a fiberglass/epoxy high pressure laminate tip cap. An electroformed nickel abrasion strip is added for erosion protection.

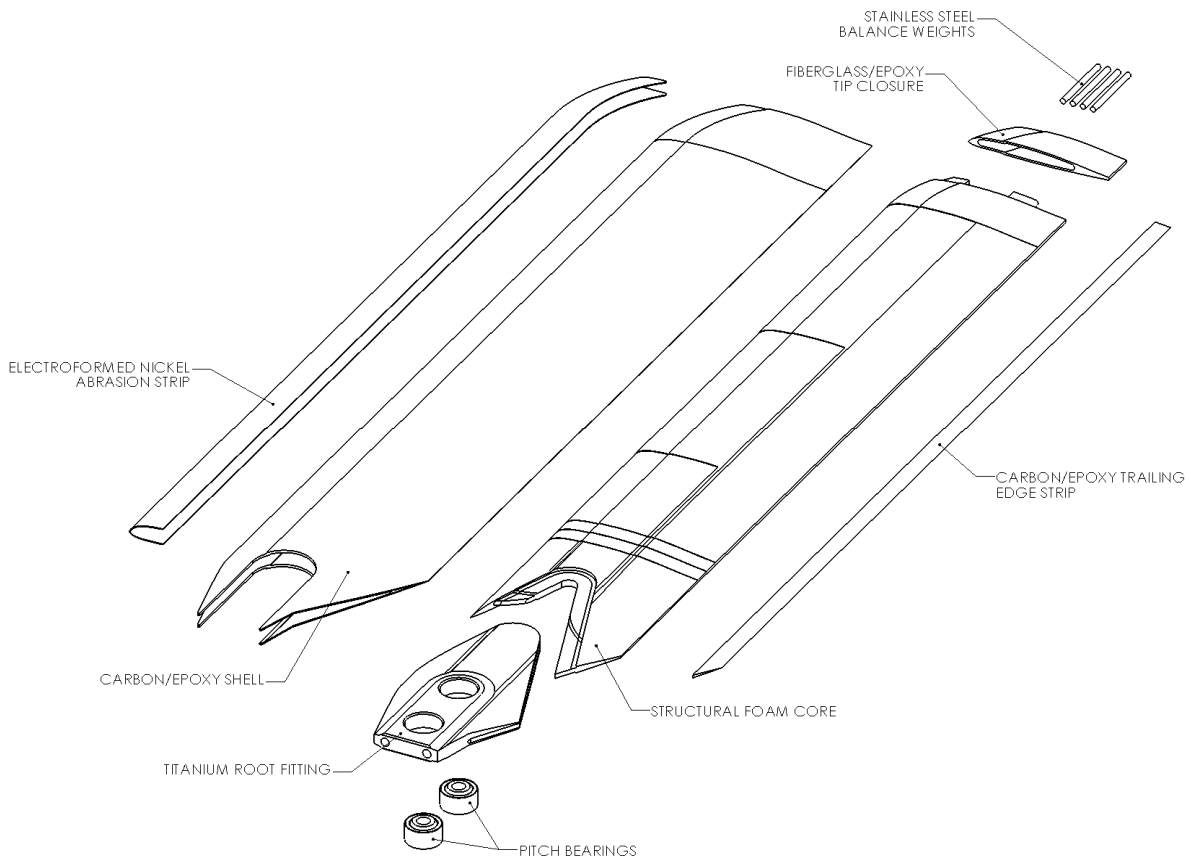


Figure 62.1.1  
Tail Rotor Blade Description

## 62.2 INSTALLATION

Install the 2062200-101/-301 tail rotor blade per the current FAA accepted maintenance manual for existing production tail rotor blade 206-016-201-131 and the instructions below.

62.2.1 A design feature of the 2062200-101/-301 tail rotor blade is reduced control forces. See section 62.3.1 for use of counterweight washers.

62.2.2 There is no pedal force requirement. Pedal friction adjustments are not required to obtain a 3 to 5 pound pedal force after the tail rotor blades are installed. Pedal forces greater than the FAA approved maintenance manual requirement of 3 to 5 pounds are permitted.

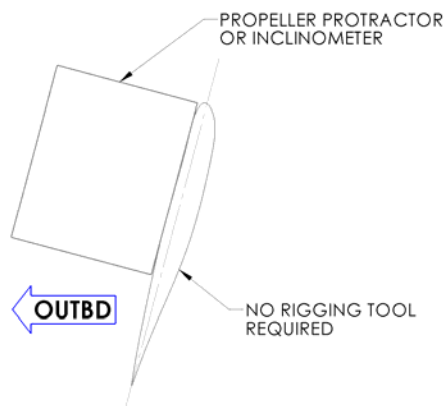
62.2.3 There is no overstaking check required after installation of VHA pitch bearings. The VHA bearings are installed differently than the existing pitch bearings. VHA pitch bearings may have higher static friction than the existing bearings, but the blades have lighter pedal forces in flight.

## 62.3 CONTROL RIGGING

Control rigging for the 2062200-101/-301 tail rotor blade is accomplished in exactly the same manner as production tail rotor blade 206-016-201-131 except as follows.

62.3.1 Counterweight washers may not be required. Begin rigging by removing all washers and the bolt and nut. If counterweights are required, use only one half of the maximum counterweight washers called out in the FAA accepted maintenance manual.

62.3.2 Blade angles are reduced by  $0.5^{\circ}$ . Subtract  $0.5^{\circ}$  degrees from the high and low blade angles in the FAA accepted maintenance manual. For example if the FAA accepted maintenance manual calls for  $23.25^{\circ}$  to  $23.75^{\circ}$ , rig the 2062200-101/-301 blades to  $22.75^{\circ}$  to  $23.25^{\circ}$ . Except for the reduced angle, rig the blades per the FAA accepted maintenance manual and the figure below.



**62.4 TRACK AND BALANCE**

Balance the 2062200-101/-301 tail rotor blades per the FAA accepted maintenance manual.

**62.5 WEIGHT AND BALANCE**

The 2062200-101/-301 tail rotor blade is approximately 0.1 lbs. lighter than the 206-016-201-131 tail rotor blade. Weigh the blades before installation and enter the data on the aircraft CHART C – BASIC WEIGHT AND BALANCE RECORD.