



# REVOLUTION

HELICOPTER CORP., INC.



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## Revolution Helicopter Airworthiness Directive (AD) #052296

**Effectuated Aircraft:** All Mini-500 Helicopters.

**AD Type:** Routine (Must be complied with within 30 days of receipt, or before first flight if the kit is not yet assembled)

**Subject:**

In our continuing effort to provide you with the best possible product, we are always investigating areas of the Mini-500 to improve. One of the areas we have been working to improve has been the vibration level in forward flight.

Although the current vibration levels are acceptable, pilot comfort levels can be improved and pilot fatigue can be reduced by lowering the vibration level as much as possible. This is a major challenge for any aircraft manufacture. We have recently purchased state of the art vibration analysis equipment which has allowed us to gather data that was previously unobtainable.

We have come up with 2 simple modifications that will improve vibration levels in forward flight:

The first is the addition of a small trim tab to the horizontal stabilizer. The trim tab aerodynamically forces the helicopter into an optimum pitch attitude at cruise speeds. This not only reduces airframe and cyclic vibration but moves the cyclic to a more comfortable position and nearly eliminates stick pressures. Secondly, aircraft stability is also improved.

The second modification is the addition of ballast weight to the front of the skids. We have determined that the natural frequency of the landing gear is near the 2 per rev frequency of the main rotor. By adding weight to the skids, it has the effect of tuning them to a different frequency further away from the main rotor 2 per rev. Like tightening a guitar string. This helps to stabilize the landing gear and therefore the entire helicopter.

Enclosed, please find the instructions for completing these 2 simple modifications. If you have made unauthorized modifications to your aircraft, these improvements may not accomplish the same results.

If you have any questions, please contact: Brian Thomas at (816) 637-2800.

Please sign and date this AD to acknowledge completion of the modifications and return it to us by fax at (816) 637-7936, or mail to:

Revolution Helicopter Corp.  
1905 W. Jesse James Rd.  
Excelsior Springs, Mo. 64024

Date: \_\_\_\_\_

Signature: \_\_\_\_\_

## Installation of ballast weight in skids

1. Fabricate a wooden plug approximately 1/2 inch thick and slightly smaller in diameter than the inside of the skid.
2. Locally obtain a flexible plastic tube that the navigation light wires will fit through. Drill a hole in the wooden plug and insert the tube.
3. Run the navigation light wires through the tube. Insert the plug inside the skid to just past the bend and bond in place with epoxy #E0024. Insure that you leave enough room at the end of the skid for the nav light assembly to fit ahead of the 5 pounds of lead.
4. Mix only enough epoxy resin with 5 pounds of lead shot to make the shot wet. Do not use too much resin.
5. Pack the shot into the skid. Do not get any inside the tube.
6. Reinstall the nav light assembly.
7. Recheck your weight and balance. You can now take out some ballast weight from the console. The helicopter should be level in a hover when balanced properly.

