

May 12, 1995

TO ALL EXEC, EXEC 90 AND EXEC 162F BUILDERS

TAIL ROTOR BELT ADVISORY BULLETIN A-21

History: As a result of extensive testing of tail rotor belts, RotorWay International has confirmed that when a belt is properly installed and maintained, it will perform as expected for the 250 hour lifetime specified in the Maintenance Manual. In our test fixture, we have been unable to create a deliberate belt failure on properly tensioned belts.

Advisory Bulletin A-20 (dated November 28, 1994) stressed the importance of checking the condition and tension of the belts before every flight. Although this may be time consuming, these pre-flight checks are essential to the continued safe operation of your helicopter.

Action: To simplify the important task of belt inspection, we recommend the use of a "Mandatory Belt Replacement" label to monitor belt stretching, temperature strips to monitor pulley temperatures, and a newly designed tool for checking belt tension. Below are the recommended installation and maintenance procedures to be followed.

1. Belt installation: Fully loosen the nuts on the adjustment rods so that the belts are not under any tension while being installed. NEVER install a belt by rolling it into place over the edge of a pulley while under tension, as this can damage the belt internally.
2. Initial tensioning: Using a spring scale and ruler at the first bulkhead of the tail boom, tension the belts so that a deflection of 1 3/8 inches at 10 pounds of pull is measured. Do not over-tighten the belts. Once the correct initial tension has been attained, apply the belt replacement label to the upper tail rotor slider stringer on the pilot's side. Align the "NEW BELT" mark on the label with the rear edge of the bearing mounting plate. If the bearing mounting plate reaches the "REPLACE" mark during subsequent adjustments, this is an indication that the belt has stretched beyond a safe limit. WHENEVER THE BELTS HAVE STRETCHED ONE INCH OR MORE, THEY MUST BE REPLACED IMMEDIATELY, REGARDLESS OF THE NUMBER OF HOURS THEY HAVE BEEN USED.

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3. Temperature strips: Install temperature strips on the two tail rotor idler pulleys and the drive pulley on the tail rotor shaft. The heat sensitive "dots" will darken if the indicated temperature is exceeded.

Examine the temperature strips before and after each flight. If the 170° dot darkens, it is an indication that a belt may be slipping or some other problem may exist. The problem should be identified and corrected before continuing flight. If the 180° (or higher) dot darkens, the belts have been damaged from heat and MUST be replaced.

4. Belt "break-in" period: Upon installing new belts, check and adjust the tension every 15 minutes that the engine is running (idle or operating RPM) until no further adjustment is required. New belts will stretch rapidly during this time, and it is very important to prevent them from becoming too loose. A belt that is too loose could be damaged internally by rolling over the edges of the pulleys; it can also be damaged by the heat created from excessive slipping.
5. Pre- and Post-flight check: RotorWay International recommends the use of our new belt tension tool, which is faster and easier to use than the spring scale and ruler method. Belt tension should be checked before and after each flight and adjusted when necessary.
6. Cleaning: The belts and pulleys should be kept clean and free of any oil, dirt or other contamination. Use acetone and a clean cloth (the rag should be damp but not dripping with acetone).

The belt replacement label (part number E18-1200), temperature strips (part number E08-5200), and belt tension tool (part number E08-5100), along with detailed instructions, are now available from our parts department.