



SERVICE DIRECTIVE BULLETIN

SERVICE DIRECTIVE BULLETIN NO. 0044

Page one

Date: August 8, 1977

Subject: Replacement and Installation of Tail Rotor Thrust Bearing Stack

Models: F-28A, 280, F-28C and 280C with 3.3" Chord Tail Rotor (Narrow Chord)

Effectivity: All aircraft with Tail Rotor Spindle Part No. 28-15202 except Serial No 01-001-76ST and above (If spindle does not have a serial number on spindle flat circular surface, this bulletin applies)

Compliance: As Noted

Reference: Enstrom Service Directive Bulletin No 0037, Revision A, and Federal Aviation Administration Airworthiness DirectiveNo 77-04-04

An in-flight failure of the tail rotor blade spindle has been reported. On inspection and disassembly of the failed components it was found that, on the tail rotor blade and retention assembly that separated, the radial thrust bearing stack had been reinstalled in the reversed position. The reversal of the radial thrust bearings, which are angular contact ball type bearings, resulted in the blade and retention assembly shifting outward from centrifugal force. The bearings are thus unable to perform their intended function and the resulting clearance permits the tail rotor to move fore and aft in the plane of rotation, putting abnormally high bending loads on the spindle resulting in its early failure.

This failure occurred approximately six hours after the above spindle was inspected per Airworthiness Directive No 77-04-04. It was also found that the tail rotor blades did not have strike tabs installed as required for compliance. It should further be noted that this helicopter had developed a cracked tail rotor guard after the last in-field tail rotor spindle inspection. Any helicopter in the field that develops cracks in the tail rotor guard or sheet metal structure for no apparent reason should have the tail rotor assembly inspected for balance, strikes, or improper bearing installation immediately.

On field inspections or bearing replacement of the tail rotor retention assembly, the Enstrom Maintenance Manual pages MM-15-1 through MM-15-5 should be referred to for disassembly and reassembly instructions. Special care should be taken to have thrust bearing stack positioned with closed side toward the hub, install retaining nut, properly torqued 40-50 foot pounds and safetied.

Compliance

Enstrom recommends that all owners that have tail rotor spindles that are affected by this Service Directive Bulletin replace their tail rotor spindle prior to the next required inspection per Enstrom Service Directive Bulletin No. 0037, Revision A, or Airworthiness Directive No. 77-04-04. This action will reduce the high number of field inspections and possible reoccurrence of the described problem.