

## Grant Robinson

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**From:** McConnell, DAVE P <dave.p.mcconnell@lmco.com>  
**Sent:** Monday, September 26, 2016 9:40 AM  
**To:** James O'Brien  
**Cc:** Grant Robinson; Ed Power; Daryl Dixon; Nakhon Supervisor Engineer  
**Subject:** S-76D MRB position when rotors stopped

Jim;

Per the request of Tony Boeme the following is provided.

Customer: Thai Aviation Services Limited  
Aircraft Serial Number: 761059  
Aircraft Model: S-76D  
Part Number: 76150-09300-041  
Case Number: C0039018  
Title: S-76D MRB Position At 45 Degrees

**Issue Description:**

Reference S-76D RFM Part 1, Section II

Normal Procedures – Shutdown – Step 15. CAUTION instructs the crew to apply rotor brake and position the main rotor blades 45 degrees to the longitudinal axis for continued ground operations.

TAS pilots note that unlike previous S-76 models, the D has exhaust ducts at approximately 45 degrees to the longitudinal axis, thereby placing the blades over the exhausts when the rotor is stopped.

TAS notes that the S-92 procedure stops the blades at 90 degrees to the longitudinal axis.

Please confirm that positioning S-76D main rotor blades at 45 degrees to the longitudinal axis is still considered to be the optimal location. EoM

**Resolution:**

Sikorsky previously performed testing which included blades tested in two-different configurations. The "X" condition placed the blades 45° off the nose / tail, and the "+" condition placed one blade over the nose, another over the tail, and the others perpendicular to the aircraft. Each blade orientation was tested with the aircraft nose-to-wind, left side to wind, right side to wind and tail to wind. The rotor blade surface temperatures were monitored with the results indicating the "X" condition provided lower surface temperatures across the span of the blades. Nose to the wind condition provides higher margins although any wind direction is acceptable.

Of note, a tail wind resulted in elevated blade surface temperatures; however, the results were found acceptable. Aircrews should be aware of what direction the prevailing wind is coming from to maximize the temperature margins of the blades. Ground operations with a tail wind should be minimized.

**David P. McConnell**

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