



Brian Rutt
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AS-CEN

Date: 12/4/2024

Subject: CEN25LA038

Contact: Michael Messex - Composite FX

The pilot had stated to Mr. Messex that during the helicopter's most recent condition inspection on 11/7/2024, he had changed the spark plugs and adjusted the fuel mixture to a leaner fuel condition. An examination of Mosquito XE, N869DJ was performed at the Composite FX factory in Trenton, Florida. Mr. Messex stated that the leaner fuel mixture set by the pilot created thermal expansion sufficient to create seizure of the piston. A possible contributing cause of overheating would be air in the water jacket of the number one cylinder as a result of the loose band clamp on the radiator fill pipe. Data recovered from the engine instruments revealed that the external water jacket thermal probes on the lower cylinder recorded a normal temperature of 262°F and the upper number one cylinder recorded 1099°F which was only 134°F degree difference between the EGT value of 1333°F indicating insufficient cooling. Both the upper and lower piston crown exhibited metal exfoliation and flaking with cylinder one being affected more than the bottom cylinder. Both piston skirts and walls showed vertical scoring on the exhaust side of the piston which indicates the piston expanded into the cylinder walls. Cylinder one showing more vertical seizure marks on the piston and the cylinder wall than in cylinder two. ///END OF STATEMENT///