



MEMORANDUM

Daniel P. Boggs
Air Safety Investigator
National Transportation Safety Board
Office of Aviation Safety - Eastern Region

ERA20LA045

YAK52, N52CY

Mr. Gerhardt,

I inspected the engine on N52CY per your request. Details are as follows.

The rocker arm covers were removed and very black, thick, oil came out of the rocker arms. It does not appear that the oil has been changed in a very long time or this could be an indication that the piston rings are bad and compression blow-by was getting into the oil. The spark plugs were removed and appeared dark in color. One propeller blade was fractured in half. Appears to be impact damage. I tried to rotate the propeller, but the engine was seized up. I used a lighted boroscope to look inside each cylinder at the piston and valves. It was noticed that each cylinder was very dark in color and oil soaked, almost to a point where the boroscope had a hard time seeing the valves. It was noticed on cylinder #5, the exhaust valve was damaged. It looked like the bushing or valve seat dropped into the cylinder. Metal pieces were found inside the cylinder, but it could not determine exactly where they came from without a complete teardown of the engine. All other components looked normal and no other anomalies noted.

Dan Boggs
Air Safety Investigator
NTSB