



12 December 2017

Mr. Tim Monville
National Transportation Safety Board

MEMO: MPS-17-055

SUBJECT: 1C172/EM7653 Fixed Pitch Propeller Performance Estimate:
Cessna 172, N18634,
File #:(MPS: 17-12, NTSB: ERA16FA161)

NTSB requested McCauley to assist in estimating the performance of the 1C172-EM7653. Two scenarios were analyzed for performance capabilities. Table 1 lists NTSB provided flight conditions for analysis.

Elevation (ft)	603
Temperature (F)	68
Airspeed (KTAS)	47

Table 1: Provided Flight Conditions

For scenario 1, the engine RPM, absorbed horse power, and thrust were calculated for the given flight conditions from Table 1. The calculated results are recorded in Table 2.

RPM	2402
Power Absorbed (Hp)	124.07
Thrust (lb)	462.44

Table 2: Condition 1 Results

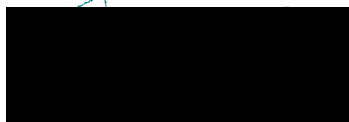


For scenario 2, McCauley calculated the required theoretical true airspeed that would allow the propeller to run at 2700 RPM using the conditions presented in Table 1.

Airspeed (KTAS)	84
RPM	2702
Power Absorbed (Hp)	139.57
Thrust (lb)	403.19

Table 3: Condition 2 Results

Respectfully,



Danny L. Ball
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