

Rocket Engineering

Short Take Off ... Quick Climb ... Fast Cruise Speed

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Rocket Conversion

The conversion includes (everything removed firewall forward):

All New:	New/Rebuilt (exchange):
4 additional firewall attachments	TSIO-520-NB engine
New intercoolers	Alternator
New induction tubing	Starter
New NACA air inlet	Vacuum pump
New airbox/alternate air	Prop governor
New baffling	Magnetos
New exhaust system	Fuel controller
New heat exchanger	Automatic wastegate
New heat shields	Fuel pump
New fuel and oil hoses	New 3-bladed propeller (exchange)
New dual 35 amp battereis	

Engine & Turbocharger

A Continental TSIO-520-NB and TH08 turbocharger, as certified.

Engine's History

This engine was originally installed in the Cessna 340 and 414, and has been in service since 1969 is over 2,500 airplanes.

Propeller

A McCauley 3-bladed, full feathering propeller is utilized as it was on the Cessna 340.

Relocated Battery

Conversion includes a new battery box located 54 in. aft of the original, holding two 35 amp batteries supported on a new battery shelf.

Weight & CG

The takeoff weight is 3,200 lbs. The conversion adds 208 lbs. to the empty weight, moving the CG forward .3".

Cowling Change

Both cowls are shortened one inch for propeller clearance. A larger oil door

is added to the top cowl, while a small blister is added to the lower front left. A NACA inlet is added to the lower left and a fixed cowl flap augments is added to the bottom of the lower cowl.

Airframe vs. Power

The airplane still operates within the original flight envelope, but at the top of the green arc.

Stall speed

The stall speed increases from 60 kts to 61 kts - Only one knot. This is due to the increased gross weight.

The Conversion

The 305 Rocket is a Mooney M20K (231/252) with a Continental TSIO-520-NB engine and a McCauley 3-bladed propeller installed.

The Name

The 305 Rocket is named for the new 305 hp engine that climbs and performs like a rocket.

Certification

The 305 Rocket STC represented a 2½ year certification effort, including 1,000 flight test hours. The 305 Rocket passed all FAA flight test requirements including spin tests, flutter tests, load tests, cooling tests and noise tests.

Service Ceiling

The service ceiling remains at 24,000 ft. However, at that altitude, the Rocket's climb rate is still 1,000 ft/min.

Top Cruise Speed and Fuel Burn

At 24,000 ft, the cruise speed is 228 kts true and the fuel burn is 22.0 gal/hr.

Gross Weight Increase

The 305 Rocket takeoff weight has now been certified 3,200 lbs. gross weight.