

RAJAY INDUSTRIES, INC.
2600 EAST WARDLOW ROAD
LONG BEACH, CALIFORNIA 90801

FAA APPROVED

AIRPLANE FLIGHT MANUAL SUPPLEMENT

TO

MOONEY MODEL M20E (S/N'S 101 THROUGH 1308)

(S/N 670001 AND SUBSEQUENT)

M20F (ALL S/N'S)

AIRPLANE FLIGHT MANUAL

This supplement must be attached to the FAA Approved Airplane Flight Manual for the M20E & M20F models when the airplane is modified by the installation of a Rajay turbocharged engine in accordance with Supplemental Type Certificate SA1411WE.

The information contained herein supplements or supersedes the basic manual only in those areas listed herein. For limitations, procedures and performance information not contained in this supplement, consult the basic Airplane Flight Manual.

OPERATING LIMITATIONS

Powerplant Limitations--Turbocharged

	MAP "HgA	RPM	TIME	ALTITUDE
Takeoff	28.5	2700	3 min.	3,500 to 12,000
Max. Continuous	27.0	2500	No limit	3,500 to 20,000
Max. Continuous	25.0	2500	No limit	20,000 to 25,000
Do not operate turbocharger below 3,500 feet				
<u>Placards</u> (In full view of the Pilot)				

1. THIS AIRPLANE HAS NOT BEEN FAA EVALUATED FOR FLIGHTS ABOVE 25,000 FEET.
2. (a) FOR EMERGENCY DESCENT - IDLE POWER - GEAR UP - IAS 150 MPH (M20E)
(b) FOR EMERGENCY DESCENT - IDLE POWER - GEAR UP - IAS 175 MPH (M20F)
3. WIDE OPEN THROTTLE BEFORE ENGAGING TURBOCHARGER.

Airspeed Limitations (Placards in full view of the pilot)

1. MINIMUM CLIMB SPEED TURBOCHARGED MAX. CONT. POWER - 115 MPH IAS.
2. REDUCE NEVER EXCEED SPEED (V_{NE}) 5 MPH PER 1000 FT. ABOVE 22,700 FT. MSL.

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NORMAL OPERATING PROCEDURES

Before Starting Engine

1. Turbocharger control -- OFF

Engine Runup Procedure - Turbocharger Check

1. Check turbocharger operation by increasing engine speed to 2250 RPM. Push turbocharger control toward "ON" until a positive indication of boost is noted (increase in MAP on gauge). Do not exceed 28.5" MAP.

Before Takeoff

1. When taking off from high elevation airfields, the turbocharger may be utilized to obtain 28.5" MAP at 2700 RPM for 3 minutes during the takeoff. After full throttle is reached, push turbocharger control toward "ON" until 28.5" MAP is attained. (Use vernier feature of control for fine adjustment).

Mixture - FULL RICH

After Takeoff

1. Best climb power turbocharged - Max. Cont. 27" MAP - 2500 RPM
2. Mixture - Turbocharged - FULL RICH

Cruise

1. Upon reaching desired cruising altitude, set manifold pressure and RPM for desired cruise power. Adjust mixture control for proper operation. Note: On those aircraft so equipped, an exhaust gas temperature indicator may be used as an aid to mixture control in accordance with manufacturer's instructions.

Descent

1. During descent from altitudes utilizing the turbocharger reduce power as required by way of the turbocharger control until the control is fully out. Lean mixture commensurate with power reduction. When the turbocharger control is fully out, the engine is operating in its original naturally aspirated state and mixture must be managed in accordance with flight altitude.

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Before Landing Check

1. Turbocharger control - Pull "OFF"

EMERGENCY OPERATING PROCEDURES

Turbocharger Boost Failure

1. In event turbocharger boost fails during takeoff, climb or cruise, loss of power on the engine will occur. Pull turbocharger control "OFF." Lean mixture as required. The flight may be continued with the engine under normal power.

Turbocharger Oil Pressure Warning Light ON (Applicable only to: Aircraft equipped with T/C low oil pressure warning light and T/C oil filter assembly without internal diff. press. by-pass element)

1. The turbocharger oil pressure warning light ON indicates the turbocharger is receiving oil at an inadequate pressure for continued operation. Pull the turbocharger control "OFF." Lean mixture as required. The flight may be continued with the engine under normal power and continuously monitor the engine oil pressure/temperature indications for any unusual reading.

PERFORMANCE

Under turbocharged conditions, all performance is as good as or better than that shown in the basic manual for corresponding altitudes.

FAA Approved ROCCO LIPPIS (ACTING)
Chief, Aircraft Engineering Division
Western Region
Federal Aviation Administration

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REVISION APPROVAL: Rocco Lippis

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