Cessna R182 N2739C Leaning Procedures

Engine Start & Warm Up

1. Use minimum prime required to start engine.
2. Use/Maintain engine/idle speeds between 1000 and 1200 RPM after starting and during the initial warm-up period.
3. Mixture lean 1/2 inch to 1 inch (or Peak RPM)

Taxi

1. Avoid rapid engine speed changes
2. Throttle - Use the minimum power setting required for taxi (no less than 1000 rpm if temperatures not in normal operating range)
3. Avoid prolonged closed throttle idle engine speed operation (when possible)

Run Up Magneto Check

1. Mixture Full Rich –
    a. 1700 RPM L & R Magneto Check
    b. 125 Max Drop, 50 Differential
2. Failed initial Magneto check;
    a. Gradually increase throttle to cruise rpm (eg. 2200 rpm)
    b. Lean mixture as far as possible – smooth engine
    c. Maintain smooth engine operation 20-60 seconds.
    d. Gradually close throttle for 1700 rpm
    e. Mixture Full Rich
    f. Recheck Right & Left magneto.
    g. **If after 2 attempts plugs remain fouled and failed magneto check per POH, return to the ramp and report to maintenance.**
    h. Reduce power to 1000-1200 RPM
    i. Lean ½ inch to 1 inch for Taxi

Take Off

1. Mixture Full Rich (lean for high density altitude if required - rich of peak EGT until smooth engine)
2. Smoothly Increase Throttle to Max Power

Climb

1. Mixture Full Rich
    a. During Climb at higher altitudes, if engine roughness or reduced power occurs, adjust mixture enough to obtain smooth engine operation.

Cruise

1. Lean for 50 degrees rich of peak EGT per POH.
2. For best Economy Lean to peak EGT

Descent and Reduced Power Flight

2. Manually Lean or leave mixture at cruise position prior to landing. If engine roughness or reduced power occurs, adjust mixture enough to obtain smooth engine operation.

Landing

1. During Landing Sequence – Mixture Full Rich unless landing at high elevation fields
2. After landing, maintain 1000-1200 rpm, allow temperatures to stabilize
3. Lean ½ inch to 1 inch for Taxi

Missed Approach

1. Mixture Full Rich
2. Throttle Full Power

Shut Down

1. Throttle idle speed 1000-1200 rpm until operating temperatures stabilize
2. Increase throttle to 1800 RPM for 20-60 seconds
3. Reduce Power to 1000 rpm
4. Shut Down Immediately (REMMM)
    a. Radios
    b. Electrical
    c. Mixture – Slowly Retard
    d. Magnetos
    e. Master

Take Off from High Density Altitude Airports

1. Lean for Peak Power (During takeoff from high-elevation airports or during climb at higher altitudes, roughness or reduction of power may occur at full-rich mixture. In such a case, the mixture may be adjusted only enough to obtain smooth engine operation. Careful observation of temperature instruments should be practiced)

General Guidelines

a. Operate the engine at maximum power mixture for performance cruise powers and at best economy mixture for economy cruise power.

b. When leaning the mixture under some conditions, engine roughness may occur before peak EGT is reached. In this case, use the EGT corresponding to the onset of roughness as the reference point of peak EGT.

c. Peak EGT provides best fuel economy. This results in approximately 6% greater range than shown in the POH and is accompanied by approximately 3 knots decrease in speed.

d. Always return mixture to full rich before increasing power settings.

e. Whenever mixture is adjusted, rich or lean, it should be done slowly.

f. Rapid engine cool down from low power altitude changes, low power landing approach and/or engine shut-down too soon after landing or ground runs should be avoided.

g. Without exception, observe the red line temperature limits during take-off, climb and high performance cruise power operation.

h. At all times, caution must be taken not to shock cool the cylinders. The maximum recommended temperature change should not exceed 50°F per minute.

i. Any change in altitude, power or carburetor heat will require a change in the recommended lean mixture and a recheck of the EGT setting.

j. Open cowl flaps as required to maintain cylinder head temperature at approximately two-thirds of the normal operating range (green arc)