

Attachment 2 - Fixed Pitch Prop Break-in Checklist

Engine/Cylinder Break-In Checklist

(Reference: CAP Engine Break-In Instructions)

I have fully read and understand the provided CAP Engine/Cylinder break in instructions.

| | |
|------------|-----------|
| Name: | CAP ID: |
| Phone #: | Email: |
| Tail #: | Date: |
| Mission #: | Sortie #: |

| Tach | Hobbs |
|-------|-------|
| Stop | Stop |
| Start | Start |
| Total | Total |

Pre Flight preparations:

DENSITY ALTITUDE (DA) PLANNING

Determine and record the expected settings you will be using at the expected cruise altitude you are planning. Write these figures here. (Indicated Altitude (IA), Throttle (RPM)) Adjust as necessary once at altitude, consult POH for accuracy)

| | Planned DA | Equivalent IA | Required RPM |
|-----------|------------|---------------|--------------|
| 75% power | | | |
| 65% power | | | |

- * Maximum 7000 DA is based on the engines ability to produce at minimum 75 % power. (lower DA is preferred if obstacle clearance assured)

| | |
|--|--|
| Verify Airplane Belly condition during pre-flight inspection (Picture might help – you will make assessment following flight for oil overboard determination.) | |
| Cold Engine Oil level (record BEFORE adding any oil) | |
| Oil added to achieve 8 qt. C172 (record only oil added (qt)) | |
| Total oil in sump preflight (TOTAL cold oil level + oil add) | |
| *Flight plan for DA remain at or below 7000 DA | |
| Full Preflight Inspection COMPLETED | |

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Taxi:

| | |
|------------------------------------|--|
| Limited ground time where possible | |
| Normal runup | |
| Oil Pressure during taxi | |
| Oil Temperature before departure | |

TAKE OFF TIME (Z)

Z

Climb out:

Maintain shallow climb angle to cruise level where possible (300 ft/minute). Monitor CHT, Oil Pressure, Oil Temperature during climb, OPEN cowl flaps.

Verify

Cruise:

Level at or below 7000 Density Altitude

Verify

During the FIRST hour at Cruise (Hour ONE)

- **Maintain 75% power** at or below 7000 ft Density Altitude. (Lower DA is preferred if obstacle avoidance allows)
- **Monitor CHTs – maintain temperatures as low as possible.**
Maintain rich mixtures.
- **Record data every 20 minutes.** (see below)
- **NEVER allow any of these procedures to jeopardize the safety and success of your flight. Please land as soon as practical if you notice any unusual issues.**
- **TOUCH and GOs PROHIBITED**

During the SECOND Hour at Cruise (Hour TWO)

- **Alternate between 65% and 75% power** at or below 7000 ft Density Altitude. Alternate every 20 minutes starting at T + 80 mark.

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| *TIME Record | Indicated ALT (IA) | OAT – Outside Air Temperature | Oil Temperature | Oil Pressure | *CHT - Highest Temp & Cylinder # | *EGT - Highest Temp & Cylinder # | FUEL FLOW - GPH |
|--|--------------------|-------------------------------|-----------------|--------------|---|---|-----------------|
| z <hr/> (T+0 min) | | | | | | | |
| Hour ONE at cruise altitude begins here (75% power) | | | | | | | |
| T + 0 | | | | | | | |
| T + 20 | | | | | | | |
| T + 40 | | | | | | | |
| T + 60 | | | | | | | |
| Hour TWO at cruise altitude begins here (alternate power) | | | | | | | |
| 65% T + 80 | | | | | | | |
| 75% T + 100 | | | | | | | |
| 65% T + 120 | | | | | | | |
| 75% T + 140 | | | | | | | |
| 65% T + 160 | | | | | | | |
| 75% T + 180 | | | | | | | |

***TIME Record** = Record (Z) time **after the aircraft is at cruise altitude**, this is the begin time (T + 0) for all recording intervals.

* Some Carburetor engines may only have a single cylinder monitored for CHT or EGT – in those cases simply record the temperature indicated. (Some EGT gauges do not have numeric values shown in those cases the EGT recording is not required.)

Monitor all engine parameters. All areas should remain in the “GREEN” areas of performance.

Temperatures may be higher than you normally observe during the engine break in period but must remain in the GREEN. Return for landing is any area outside of GREEN.

If at any time you suspect something unusual - land and assess.

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Descent:

AVOID large power reductions unless necessary. “Chopping” the power leads to extreme temperature changes.

| | |
|---|--|
| Achieve a cruise descent – Start by reducing RPM by 200 RPMs – allow CHT to stabilize (5 minutes) | |
| If additional descent is required – reduce another 200 RPM and allow CHT to stabilize – repeat as necessary | |
| Use of flaps (high drag configuration) supports maintaining higher RPM and thus higher CHT at reduced speed. (try to maintain CHT between 300°F and 400°F) | |
| Avoid pattern work and Touch and GOs | |

LANDING TIME (Z)

Z

Post Flight:

| | |
|---|--|
| Secure Aircraft – normal shutdown and secure checklist. | |
| Aircraft Inspection – inspect for signs of oil? Consult picture from preflight. Inspect all openings, fasteners, and connections available Report findings to AMO! | |
| Cold engine oil level (1 hour post shutdown) CAUTION - HOT ENGINE! – wait at least 1 hour to determine post flight oil level | |

IMPORTANT!! REPORT ALL RECORDINGS at THIS LINK:

<https://app.smartsheet.com/b/form/630e9e4368b34a84ab74cd0d131c7bda>

If the link is not working, please email a copy of this completed sheet to: LGPSD@capnhq.gov