Attachment 3 - Constant Speed Prop Break-in Checklist
(FIRST FLIGHT ONLY)

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:	**FIRST FLIGHT PLANNING**

The goal of this flight is a one-hour flight remaining over the departure airport at altitude. During this initial hour the crew will be EXTREMELY AWARE of all operations of the engine systems and the power it is producing. **REMAIN WITHIN GLIDING DISTANCE AT ALL TIMES.**

* Maximum 7000 DA is recommended.

FLIGHT PLANNING: Prior contact with tower crew at controlled fields is advisable. Let the ATC crew know your intentions and that you wish to remain within gliding distance at altitude for the hour-long flight. At non-towered locations make traffic and position calls periodically and remain at least 1000 ft above the normal traffic pattern altitude.

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), Manifold Pressure (MP), Constant speed propellor (RPM)) Adjust as necessary once at altitude, consult POH for accuracy)

	Planned DA	**Equivalent IA**	**Required MP**	**Required RPM**
75% power				

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Verify Airplane Belly clean (during pre-flight) **(Picture might help –** you will make assessment following flight for oil overboard determination)	
Cold Engine Oil level (record BEFORE adding oil)	
Oil added to achieve 8 qt. for 182T orT182T // 11 qt for T206H // 12 qt. Continental engine // 9 qt. GA8 (**record only oil added** (qt))	
Total oil in sump preflight (TOTAL cold oil level + oil add)	
*__Flight plan to remain within gliding distance of departure airport__ (towered or uncontrolled)	
Full Preflight Inspection COMPLETED	

Taxi:

Limited ground time where possible	
Normal runup / limit prop cycling to +/- 100 RPM	
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:

Verify

Level at or below 7000 Density Altitude

During the FIRST hour at Cruise (Hour ONE)

- **Maintain 75% power** at or below 7000 ft Density Altitude.

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- **Monitor CHTs –** maintain temperatures as low as possible. **OPEN COWL flaps** and **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 RTB or land as soon as practical if you notice any unusual issues.**
- **TOUCH and GOs PROHIBITED**

*TIME Record z / (T+0 min)	Indicated ALT	OAT	Oil Temp	Oil Press	CHT - Highest Temp & Cylinder #	EGT - Highest Temp & Cylinder #	FUEL FLOW - GPH
Hour ONE at cruise altitude begins here – 75% power							
T + 0							
T + 20							
T + 40							
T + 60							
Begin descent and Land – return to FBO for inspection.							

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

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 amiss return for landing.

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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 MP by 2 inches – allow CHT to stabilize (5 minutes)	
If additional descent is required – reduce another 2 inches and allow CHT to stabilize / repeat if necessary	
Use of flaps (high drag configuration) supports maintain higher RPM at reduced speed. (Technique)	
Close COWL Flaps to help maintain CHT in descent (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 - record that level here.	

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