

# Starting a Cold Engine (C150 and C172)

Prepared by Keith Gutierrez and Dick Stephens - October 2009



- At KTKI, no preheat available
- Off-site preheating is paid by you
- Expect battery to drain quickly
- Starting cold engine causes significant wear
- Starting can be a fire hazard
- No extinguishers at TFC tie down

**Students and infrequent flyers should consult with instructors before starting engine on cold mornings**

**Best solution for a cold engine is to either preheat it or put it in a heated hanger the night before your trip**

# Engine Priming Considerations



## The Priming System (C150 and C172)

- The primer is like a hypodermic needle
- Pull it all the way back and you can hear it fill with fuel
- Primer squirts raw fuel into the intake manifold
- Pumping the throttle atomizes fuel going into the intake manifold
- If primer pushes in too easy it is not full of fuel
- Seek recommendations from FBO when renting aircraft since no two aircraft have the exact same priming requirements

**For TFC aircraft, use normal starting procedures when temps are above freezing**

# Common Mistakes When Priming

- Not pulling plunger full out
- Not waiting long enough for plunger to fill completely
- Not pushing plunger full in
- Not locking plunger after use
- Over priming resulting in a potential fire hazard
- Not priming at all when temperatures are below freezing
- Excessive pumping of the throttle
- Waiting too long before starting engine

**Get with an instructor on a cold morning and  
learn to prime correctly**

# **TFC Recommended Engine Start Procedure**

**(C150 and C172)**

- **Go through the normal check list up to the point of actually starting the engine**
- **Make 2 full strokes of the primer first, then load the primer, but do not push it in - it will be used when cranking the engine over**
- **Immediately call “Clear Prop” and as you crank the engine with the starter, pump the throttle 2 strokes and leave the throttle  $\frac{1}{4}$  inch open**
- **If engine starts, advance the primer slowly and lock it in**
- **If engine doesn't start right away, push the primer in while the engine is still cranking**
- **If you flood the engine, pull mixture back to cutoff, open throttle wide open, and crank the engine several revolutions**
- **If that doesn't work, get someone to help you, remember a drained battery can freeze. Take care of the airplanes!**

## After Engine Start

- **Set idle at 1000 - 1200 RPM**
- **Verify oil pressure after a few seconds**
- **If no oil pressure turn off engine and investigate**
- **Also check that battery is charging**
- **Allow time for oil to warm up before takeoff**

# Special Considerations Battery and Starter Motor

- Aircraft batteries are expensive
- Freezing weather is a perfect opportunity to destroy an aircraft battery
- A discharged battery will freeze, which results in its destruction
- Don't keep cranking when the engine does not start – RELAX
- Take care of the starter or it too may fail
- Limit cranking to no more than three 10 second periods with a pause between each
- If engine has not started after 3 tries, allow starter to cool off for at least 5 minutes
- Not following this guideline can result in an overheated starter motor and failure
- If battery is run down, immediately contact maintenance and get it on a charger

**At the end of the flight, don't forget to turn  
off the MASTER switch**

