



Academy Flight Training Center (AFTC)  
9222 Airfield Drive  
United States Air Force Academy, CO, 80840  
Attn: Christopher F. Carper

28 June 2022

SUBJ: Pilot Information File – 22-02 Summer Weather Operations

1. Due to recent instances of higher than normal oil temperatures and improper mixture control during all phases of flight an overview of proper procedures and techniques is provided. To eliminate or minimize high density altitude and warm weather pitfalls as well as our engines running hotter than normal follow the procedures listed below. Additionally, all aircraft are slightly different especially between the C-172s and T-41Cs and consideration must be given to carbureted versus fuel injected engines.

2. **First and foremost, all pilots are required to be trained on proper mixture leaning techniques.** This training should be accomplished during initial checkout or during private pilot flight training prior to solo.

3. Certain aircraft are susceptible to high engine temperatures when the temperature exceeds 70F or 9,000 feet Density Altitude. Aircraft N98306, N6601K and N1370U require extra vigilance after takeoff and should have the mixture increased as necessary to avoid a temperature spike. This should be accomplished during the climb checklist no lower than 400' AGL. Mixture increases up to full rich may be required to keep the engine operating in the green arc or normal operating range. If at any time the temperature enters the red arc on the temperature gauge the sortie should be terminated and a log book entry made. Climbing out at higher speeds than  $V_y$  may add in the cooling of the engine and should be considered during the takeoff briefing.

4. During subsequent flights during the day the use of the Hot Start Checklist must be used especially when starting the T-41Cs and should be reviewed in the flight briefing. Our T-41Cs are different in how the engines respond to mixture given that they are fuel injected. It is the pilot's responsibility to understand and apply the proper mixture management during all phases of flight.

- a. N7903N operates better leaner in all phases of flight.
- b. N7884N operates on the ground with a richer mixture setting but normally during all other phases of flight.

5. Running aircraft with richer than planned mixture setting will increase the fuel burned during all phases of flight. Pilots must consider the extra fuel burned and account for this when computing the one hour of reserves required by our Standard Operating Procedures. Fuel burns in excess of 10 gallons per hour are not uncommon in the C-172s and over 12 gallons per hour in the T-41Cs. When in doubt **land, dip the tanks and if necessary obtain fuel as needed.**

6. Please contact any Chief Instructor, Assistant Chief Instructor, or Flight Instructor at (719) 333-4028 with any questions or concerns.

Sincerely,

Christopher F. Carper  
Manager and Chief Instructor