

**Piper Cherokee PA-28-180 [N55044] – Yale Aviation - IFR**

**PREFLIGHT**

**Inside Check:**

- \* **Paperwork** (Hobbs, AROW, VOR, W&B)
- \* **Panel:** Avionics...OFF → Master....ON
- CHECK ...no flag: T&B, AI; malfunction lgt: gyro
- Fuel pump....ON, check gauges, OFF
- Nav, beacon, landing, stall lights.....CHECK
- CHT/circuit breakers.....CHECK
- Master OFF → Flaps.....DOWN

\* **Controls** free & clear

**Fuel:** Check tanks + sumps + vents

**Outside check:**

- Control surfaces → untie + tires + brakes → Oil + cowling → Prop + air Intake + Belt → untie + tires + brakes + Pitot Tube + Static → Contrl surfaces + stabilator + untie + antennae (6) + baggage

**START**

**Secure:**

- iPad ZERO TIME; Connected; clock.....SET
- Passengers briefed on door & belts
- Door & Belts & Brakes.....SECURE/ON
- Avionics Master.....OFF
- Carb heat.....OFF
- Fuel.....ON LOWEST TANK

**Engine Start:** Key in ignition

- Master → Fuel pump + Beacon.....ON
- Mixture.....RICH
- Throttle.....1/4" open
- Prime.....AS NECESSARY
- CLEAR PROP & start w/ 1 throttle pump
- Throttle.....1000 RPM
- 4 Pressures (oil, alternator, fuel w/ pump off, vacuum).....CHECK
- Avionics Master .....ON
- GPS Database & Self-test.....VERIFIED

**\*\* SWITCH TANKS \*\***

- ATIS.....SET Altimeter, CK VOR's
- Call Grnd → **IFR Clearance, brief route**
- Brief runway & taxi route, secure belts**

**Hot Start**

Throttle.....1/2" open  
Mixture....IDLE, then RICH after start  
**NO PRIME**

**Flooded Start**

Throttle.....FULL OPEN  
Fuel pump...OFF / Mix...IDLE-CUTOFF  
Starter.....ENGAGE → Mix RICH  
→RETARD throttle

**TAXI CHECKS**

- Mixture.....LEANED FOR TAXI
- Strobes & Nav Lgts ON; Test Brakes
- **INSTRUMENT CHECK** during taxi:
- Mag + DG → T&B → AS, AI, Alt → VSI

**RUN-UP**

Hand Brake.....SET; Oil Temp....CK  
Mixture....RICH; Throttle.....2000 RPM  
Mags.....CK <175 max drop; 50 btwn  
Carb Heat.....Check & CLOSE  
Vacuum Gauge.....CK [5" ±0.1"]  
Oil temp; Oil press.....GREEN  
Alternator / **alternate air** .....CHECK  
Low Vacuum light.....CHECK OFF  
Throttle...IDLE → **standby vac check**

**BEFORE TAKE-OFF**

Flight Instrs, HI & AI, breakers...CHECK  
Radios & Nav.....SET  
Transponder.....ALT & ADS-B ID  
Flight Controls.....FREE & CORRECT  
Trim & Flaps (10, 25, 40) SET & CORRECT  
Mixture.....RICH  
SWITCHES: fuel pump ON; electric trim OFF

**Briefing:** rnmwy bugged, lgth, t/o pt →  
emergencies + abort point (50/70 rule) + PIC  
Door & Windows & Belts: FASTENED

**CLEARANCE** → Lights, Camera, TIMER

Windsock & Traffic.....CHECK

**REACT** on roll: RPM, Engine gauges,  
AS, Centerline, Take-off

**CRUISE**

Fuel pump.....OFF (ck pressure)  
Power.....SET per table  
Mixture.....LEAN (when under 75%)

**FLOWCHECK**

Compass → DG; Oil pressure → oil temp  
→ alternator → EGT → circuits  
→ vacuum → RPM → fuel tank

**BEFORE LANDING – 20 NM out**

**ARG:** ATIS; Radios set; GUMPSS  
[Gas FULLEST TANK; Undercarriage BOLTED ↓;  
Mix RICH; Pump ON; Switches & Seatbelts SET]  
\* **BRIEF APPROACH: How long? How low? Which way?**

Radio call → bug runway  
Landing Light & Flaps.....AS NEEDED  
Approach.....85 IAS  
GUMPSS.....on short final

**AFTER LANDING**

Flaps.....UP  
Fuel Pump.....OFF  
Landing light.....OFF  
Strobes.....AS REQUIRED  
Mixture.....LEAN as necessary

**SHUTDOWN & SECURE**

Brakes ON, Throttle.....IDLE  
• **Avionics OFF** → → Hot Mag Check  
• Throttle to 1200 rpm → 10 seconds  
• Mix, Mags, Master....OFF / **KEYS OUT**  
• Beacon .....OFF  
Brakes .....AS NEEDED  
Control Wheel.....SECURED  
Wheel Chocks.....SET

**CLOSE FLIGHTPLAN!!!**

**V SPEEDS (max gross weight, mph)**

**Vr:** 60 (short/soft=55, 25° flaps)  
**Vx:** 74 **Vy:** 85 **Cruise climb:** 100  
**Vso:** 61 **Vs:** 68 **Vg:** 80  
**Vfe:** 115 **App:** 85//76 short/soft field  
**Va:** 127 max/ 120 med/ 110 lgt

**-EMERGENCY-**

**ENGINE FAILURE**

Airspeed.....best glide 80 IAS  
Best field.....pick site into wind  
**CK:** Gas(tank, pump)/Air(carb heat)/Spark(mags)  
Declare.....emergency, 7700  
Exit..... Fuel, Mags, Mix, Master OFF;  
door wedged open

**FIRE**

**Engine Fire on Starting**

**Continue cranking!**  
Start → Shut down and inspect  
No Start → Mix....IDLE/CUTOFF  
Fuel .....OFF  
Throttle.....FULL OPEN

**Engine Fire in Flight**

Fuel.....OFF  
Throttle.....CLOSED  
Mix & Mag.....OFF  
Cabin heat & Air.....OFF  
**Increase airspeed to extinguish**

**Electrical Fire**

All electrical & Master.....OFF  
Vents.....OPEN  
Cabin heat & Air.....OFF  
**If fire is out:** turn on Master, one essential equipment at a time; reset breakers if critical

**Loadmeter**

**Excessive:** Alternator OFF → LAND  
**Low voltage:** Avionics OFF → reset master & breakers  
LAND if still problem

**75% HP**

Alt	OAT	RPM	TAS
SL	60°F	2400	123
2K	51°F	2460	127
4K	45°F	2530	131
6K	40°F	2580	135
8K	30°F	2650	139

