WCFC M20J NORMAL PROCEDURES N 5760R

BEFORE ENGINE START

1) Hobbs Time ..... NOTED
2) Preflight..... COMPLETE
3) Fuel quantity..... ADEQUATE
4) Documentation (including IFR) ..... CHECK
5) Seats & Seat Belts..... ADJUSTED & LATCHED
6) Brakes ..... TEST (SET)
7) Fuel flow memory ..... ON
8) ELT ..... ARMED
9) Landing gear switch ..... DOWN
10) Magneto switch..... OFF
11) Master switch..... OFF
12) Radio master switch..... OFF
13) Alternate static..... OFF
14) Lights and electrical equipment..... OFF
15) Boost pump ..... OFF
16) Cowl flaps..... OPEN
17) Fuel selector ..... ON (2nd tank)
18) Circuit breaker panel ..... CHECK
19) Passengers ..... BRIEFED (normal & emergency)

STARTING ENGINE

1) Mixture..... CUT OFF
2) Propeller..... FULL ADVANCE
3) Throttle ..... OPEN ¼ inch (1/2 for hot)
4) Master switch..... ON
5) Strobes and/or Navigation lights ..... ON
6) Fuel totalizer..... RESET or CHECK
7) Propeller area ..... CLEAR

For hot start delete steps 8-10

8) Boost pump ..... ON
9) Mixture..... RICH for 3-8 seconds then cut off
10) Boost pump ..... OFF
11) Magnetos..... START (10 seconds max)
12) Mixture..... RICH
13) Oil pressure ..... NORMAL (within 30 seconds)
14) Mixture..... LEAN for smooth idle

AFTER START

1) Radio Master..... ON
2) Lights ..... AS REQUIRED
3) Electric trim. ..... ON
4) Parking brake..... RELEASED
5) Brake and steering check ..... ON TAXI
6) IFR taxi checks ..... ON TAXI

BEFORE TAKEOFF

1) IFR taxi check..... COMPLETE
2) Flight controls ..... FREE & CORRECT
3) Flight instruments ..... SET
4) Radios ..... Comm & Nav SET
5) Annunciator panel ..... CHECK
6) Gear alert system..... TEST
7) Auto pilot..... TEST and OFF
8) Rudder trim ..... SET
9) ElevatorTrim ..... SET for TAKEOFF
10) Flaps ..... SET for TAKEOFF
11) Cowl flaps..... FULL OPEN
12) Fuel selector ..... ON DESIRED TANK
    a) Throttle..... 1900 RPM
    b) Magnetos ..... CHECK (175 max drop)
    c) Oil pressure..... NORMAL RANGE
    d) Ammeter ..... CHARGE
    e) Low vacuum light ..... OUT
    f) Propeller ..... CYCLE then FORWARD
    g) Throttle..... 1000 RPM
13) Door..... LOCKED
14) Mixture..... FULL RICH
15) Boost pump ..... ON
16) Lights & strobes..... AS REQUIRED
17) Transponder ..... ALT
18) Time of departure ..... NOTED
19) Pilot briefing ..... NORMAL & EMERGENCY

TAKEOFF & CLIMB

1) Rotate ..... 63 KIAS
2) GearUP
3) Climb ..... 85 KIAS
   (66 KIAS max performance)
4) Flaps ..... UP
5) Throttle ..... 25 inches (at 500 AGL)
6) Propeller..... 2500 rpm
7) Climb ..... 100 KIAS
   (85 for best rate)
8) Boost pump ..... OFF
   (confirm fuel pressure)
9) Mixture..... LEAN
   (50 rich of peak or 14 gph)
10) Cowl flaps..... TRAIL (open if CHT hot)
11) Cylinder temperatures..... MONITOR

CRUISE

1) Level at altitude ..... ACCELERATE
2) Throttle ..... SET DESIRED POWER
3) Propeller..... SET (2200 or 2400 rpm)
4) Trim ..... for LEVEL FLIGHT
5) Cowl flaps..... CLOSE (if CHT allows)
6) Mixture..... LEAN (lean of peak at < 60%)
7) Engine temperatures..... MONITOR
8) Systems ..... CHECK

DESCENT

1) Throttle ..... (not less than 16" MP)
2) Cowl flaps..... (remain) CLOSED
3) Mixture..... LEAN (unless rough)

IN RANGE

1) Seats & belts ..... SECURE & LOCKED
1) Fuel..... ADEQUATE & DESIRED TANK
2) AWOS – ATIS – Advisories ..... NOTED
3) Altimeter ..... SET
4) Approach & missed approach..... BRIEFED
5) Radios..... SET
6) Lights..... AS REQUIRED
7) Initial approach speed..... 105 KIAS

BEFORE LANDING

1) Boost pump ..... ON
2) Landing gear ..... DOWN
   (below 130 KIAS)
3) Throttle ..... SET
4) Propeller..... FORWARD
5) Mixture..... RICH
6) Cowl flaps..... OPEN
7) Flaps ..... SET (below 115 KIAS)
8) Approach speed..... 80 KIAS
9) Landing assured
   a. Autopilot off
   b. Gear confirmed down
   c. Final approach speed – 71 KIAS

MISSED APPROACH / GO AROUND

1) Throttle ..... FORWARD
2) Propeller ..... FORWARD
3) Speed ..... 65 to 80 KIAS
4) Flaps ..... TAKEOFF SETTING 15° (3 seconds)
5) Gear ..... RETRACT after positive rate
6) Flaps ..... RETRACT at 85 KIAS
7) Cowl flaps ..... OPEN
8) Boost Pump ..... OFF

AFTER LANDING

1) Transponder ..... STANDBY
2) Boost pump ..... OFF
3) Mixture ..... LEAN
4) Strobes ..... OFF (at night)
5) Lights ..... AS REQUIRED
6) Flaps ..... UP
7) Trim ..... TAKEOFF SETTING

ENGINE SHUTDOWN

1) Throttle ..... 1000 rpm (stabilize CHT)
2) Electric trim ..... OFF
3) Radio master ..... OFF
4) Electrical equipment ..... OFF
5) Mixture ..... CUT OFF
6) Throttle ..... CLOSED
7) Magnetos ..... OFF (remove key)
8) Lights ..... OFF
9) Master switch ..... OFF
10) Overhead lights ..... OFF
11) Parking brake ..... OFF
12) Aircraft interior & exterior ..... SECURE

POWER SETTINGS

CONDITION	MP	RPM	MIX	PWR	GPH
Takeoff	Full	2700	Rich	95%	18
Initial climb	25"	2500	Rich	75%	14
Cruise climb	24"	2500	Lean	71%	10
Cruise	24"	2400	Lean	67%	9.6
" "	22"	2400	Lean	63%	9.0
" "	*20"	2400	Lean	58%	8.2
" "	*22"	2200	Lean	55%	7.8
" "	20"	2200	Lean	50%	7.3
" "	18"	2200	Lean	45%	6.8
Descent	16"	22-24	Lean	-	6.1

* recommended for WCFC operations and fuel consumption

WCFC recommended SPEEDS TO FLY

Va.....120 KIAS
Vx..... 66 KIAS
Vy..... 85 KIAS

Best glide speed (clean)
@ gross weight.....90 KIAS
@ 2300 pounds.....85 KiAS

WCFC required FIELD LENGTH

Elevation	Normal	Maximum performance
Sea level	3,000 feet	2,500 feet
500 feet	3,200	2,600
1,000	3,500	2,800
2,000	4,000	3,000
4,000	5,000	4,000
6,000	6,000	5,000