

## GROUND PROCEDURES

### CABIN

1. Required Documents..... A.R.O.W.
2. Control Wheel Lock .....REMOVE
3. Ignition Switch ..... OFF / KEY ON DASH
4. Avionics Master Switch .....OFF
5. Master Switch .....ON
6. Fuel Quantity Indicators ..... CHECK
7. Avionics Master Switch .....ON
8. Avionics Cooling Fan ..... AUDIBLE
9. Avionics Master Switch ..... OFF
10. Flaps ..... FULL DOWN
11. All Exterior Lights .....ON
12. Pitot Cover ..... REMOVED
13. Pitot Heat .....ON
14. Check Operation of :  
.....Nav/Strobe, Beacon, and Landing Light
15. Stall Warning ..... CHECKED
16. Pitot Tube..... CLEAR / WARM
17. Exterior Lights ..... All OFF, BEACON ON
18. Pitot Heat .....OFF
19. Master Switch .....OFF
20. Fuel Selector .....BOTH
21. Elevator Trim..... SET for takeoff

### EMPENNAGE

1. Baggage Door ..... CHECK
2. Rudder Gust Lock .....REMOVE
3. Tail Tie-Down ..... DISCONNECT
4. Elevator ..... CHECK
5. Rudder..... CHECK
6. Trim Tab ..... CHECK
7. Airplane Antennas ..... CHECK

### RIGHT WING

1. Flap and Aileron ..... CHECK
2. Wing Tip ..... CHECK
3. Leading Edge ..... CHECK
4. Wing Tie-Down .....REMOVE
5. Main Wheel Tire / Brake ..... CHECK
6. Fuel Quick Drain Valves..... CHECK
7. Fuel Quantity ..... CHECK VISUALLY
8. Fuel Filler Cap....vent unobstructed SECURE

### NOSE

1. Fuel Quick Drain Valves..... CHECK
2. Engine Oil/Filler Cap..... CHECK (5-8 qts)
3. Engine Cooling Air Inlets .....CLEAR
4. Propeller and Spinner ..... CHECK
5. Carburetor Air Filter ..... CHECK
6. Nose Wheel Strut and Tire ..... CHECK
7. Left Static Source Opening ..... CHECK

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### LEFT WING

1. Fuel Quantity ..... CHECK VISUALLY
2. Fuel Filler Cap.....vent unobstructed SECURE
3. Fuel Quick Drain Valves..... CHECK
4. Main Wheel Tire / Brake ..... CHECK
5. Leading Edge ..... CHECK
6. Pitot Tube Cover .....REMOVE
7. Fuel Tank Vent Opening ..... CHECK
8. Stall Warning Opening ..... CHECK
9. Wing Tie-Down .....REMOVE
10. Landing Light..... CHECK
11. Wing Tip ..... CHECK
12. Aileron and Flap ..... CHECK



## GROUND PROCEDURES

### BEFORE STARTING ENGINE

1. Preflight Inspection..... COMPLETE
2. Passenger Briefing ..... COMPLETE
3. Seats/SeatBelts .....ADJUST, LOCK
4. Fuel selector valve ..... BOTH
5. Av. Pwr Switch, Elect. Equip..... OFF
6. Brakes ..... TEST; SET/HOLD
7. Circuit Breakers..... CHECK IN

### STARTING ENGINE (With Battery)

1. Beacon ..... ON
  2. Carb Heat ..... COLD
  3. Throttle ..... OPEN 1/8"
  4. Mixture ..... FULL RICH
- NOTE: if engine is warm, omit priming**
5. Prime..... As Req'd
  6. Propeller area ..... CLEAR
  7. Master switch ..... ON
  8. Ignition switch ..... START
  9. Oil pressure.....CHECK
  10. Throttle ..... 1000 RPM or LESS
  11. Nav, strobe lights ..... ON, as REQ'd
  12. Avionics power switch & radios ..... ON
  13. Transponder ..... ALT
  14. Flaps ..... RETRACT
  15. Taxi Lights ..... ON as REQ'd

### RUNUP

1. Parking Brakes ..... SET or HOLD
2. Seat & Seat Belts ..... CHECK SECURE
3. Doors & Windows ..... CLOSED/LOCKED
4. Flight controls ..... FREE and CORRECT
5. Flight Instruments..... CHECK & SET  
(Heading & Altimeter)
6. Fuel Quantity ..... CHECK
7. Fuel Selector Valve ..... BOTH
8. Mixture ..... RICH
9. Throttle ..... 1700 RPM
  - a. Magnetos .....CHECK BOTH (150/50)
  - b. Carburetor Heat .....CHECK then COLD
  - c. Engine instruments .....CHECK
  - d. Suction Gage .....CHECK
  - e. Ammeter .....CHECK
10. Throttle .....CHECK IDLE
11. Throttle ..... 1000 RPM or LESS
12. Throttle friction lock ..... ADJUST
13. Elevator Trim .....SET for takeoff
14. Radios and Avionics .....SET
15. Navigation.....SET as REQ'd
16. Wing flaps .....as REQ'D
17. Lights.....as REQ'D

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### BEFORE TAKEOFF

1. Doors & Windows.....CLOSED/LOCKED
2. Fuel Quantity ..... CHECK
3. Fuel Selector Valve ..... BOTH
4. Elevator Trim ..... SET for takeoff
5. Mixture ..... RICH (LEAN max RPM > 3000')
6. Wing flaps ..... as REQ'D
7. Lights ..... as REQ'D

### INFLIGHT CHECKS CONTINUED ON SECOND CARD

### SECURING AIRPLANE

1. Parking Brake ..... SET or HOLD
2. Throttle ..... 1500 RPM
3. Mixture ..... LEANED, 20 seconds
4. Avionics.....CHECK 121.5
5. Throttle ..... REDUCE as REQ'd
6. Parking Brake..... RELEASED
7. All lights ..... As Req'd
8. Throttle..... IDLE
9. Avionics Power Switch, Elect. Equip ..... OFF
10. Exterior, Interior & Panel Lights ..... OFF
11. Beacon Light ..... ON
12. Magneto Ground .....CHECK
13. Mixture ..... IDLE CUT OFF
14. Ignition Switch ..... OFF
15. Aircraft Keys ..... ON DASH
16. Master Switch..... OFF
17. Fuel Selector .....RIGHT TANK
18. Gust Lock ..... INSTALLED
19. Pitot Cover ..... INSTALLED
20. Wheel Chocks ..... INSTALLED
21. Tie Downs ..... INSTALLED
22. Tires and Aircraft ..... INSPECTED
23. Shade/Canopy Cover ..... INSTALLED

### FIRE DURING START

1. Cranking.....CONTINUE
- If engine starts:**
2. Power ..... **1,700 RPM for a few minutes**
  3. Engine ..... **SHUTDOWN**
- If engine fails to start:**
4. Throttle ..... **FULL OPEN**
  5. Mixture ..... **IDLE CUT OFF**
  6. Cranking..... **CONTINUE**
  7. Fuel Selector ..... **OFF**
  8. Master Switch..... **OFF**
  9. Ignition Switch ..... **OFF**
  10. Fire Extinguisher ..... **ACTIVATE**
  11. Airplane ..... **EVACUATE**

## FLIGHT NORMAL PROCEDURES

### NORMAL TAKEOFF

1. Doors & Windows..... CLOSED/LOCKED
2. Fuel Quantity..... CHECK
3. Fuel Selector Valve ..... BOTH
4. Elevator Trim ..... SET for takeoff
5. Lights..... as REQ'D
6. Wing Flaps..... 0°
7. Carburetor heat..... COLD
8. Throttle ..... FULL OPEN
9. Mixture..... RICH (LEAN max RPM > 3000')
10. Rotate..... **55 KTS**
11. Climb Speed ..... Vy = **70 KTS**
12. Wing Flaps..... RETRACT

### SHORT FIELD TAKEOFF

1. Steps 1-5 of Normal Takeoff
2. Wing Flaps..... 0°
3. Carburetor Heat ..... COLD
4. Brakes..... APPLY
5. Throttle ..... FULL OPEN
6. Mixture..... RICH (LEAN max RPM > 3000')
7. Brakes..... RELEASE
8. Elevator Control ..... SLIGHTLY TAIL LOW
9. Climb Speed ..... **60 KTS** until over obstacles

### ENROUTE CLIMB

1. Airspeed ..... **70-85 KTS**
2. Throttle ..... FULL OPEN
3. Mixture..... RICH (LEAN max RPM > 3000')

### CRUISE

1. Power ..... 2200-2700 RPM (75% max)
2. Elevator trim ..... ADJUST
3. Mixture..... LEAN as REQ'd

### DESCENT

1. Power ..... as REQ'd
2. Mixture..... ENRICHEN, as REQ'd
3. Carburetor Heat ..... ON, as Req'd
4. ATIS/Altimeter..... SET
5. Fuel selector valve..... BOTH

### BEFORE LANDING

1. Seats/SeatBelt..... UPRIGHT,ADJUST,LOCK
2. Fuel Selector Valve ..... BOTH
3. Mixture..... RICH (or as REQ'd)
4. Carburetor Heat ..... ON, as Req'd
5. Landing/Taxi Lights..... ON
6. Wing Flaps..... AS DESIRED

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### NORMAL LANDING

1. Airspeed ..... **65 - 75 KTS (flaps UP)**
2. Wing flaps ..... as DESIRED (< 87 KTS)
3. Airspeed ..... **60 - 70 KTS (flaps down)**
4. Touchdown ..... MAIN WHEELS FIRST
5. Landing Roll..... LOWER NOSE WHEEL
6. Braking..... MINIMUM REQUIRED

### SHORT-FIELD LANDING

1. Airspeed ..... 65 - 75 KTS (flaps UP)
2. Wing Flaps..... FULL DOWN 40°
3. Airspeed ..... **60 KTS**
4. Touchdown ..... MAIN WHEELS FIRST
5. Brakes ..... APPLY HEAVILY—don't lock brakes
6. Wing flaps ..... RETRACT

### BALKED LANDING

1. Throttle ..... FULL OPEN
2. Carburetor Heat ..... COLD
3. Wing Flaps..... RETRACT TO 20°
4. Climb speed..... **55 KTS**
5. Wing Flaps..... 10° (until over obstacles)
6. Wing Flaps..... **RETRACT after 60 KTS**

### AFTER LANDING

1. Wing Flaps..... UP
2. Carburetor Heat ..... COLD
3. Taxi & Landing Light..... ON as REQ'd
4. Transponder..... ALT

V-SPEEDS		INFO	
Vso	43	Oil (full/min)	8 / 6
Vs1	50	Fuel [use]	42 [38]
Vr	55	Weight TO	2300#
Vx	60	Weight Lnd	2300#
Vy	70	Demo Xwind	13
Vg	70	App FL DN	65
Vfe	87	App FL UP	70
Va	106		
Vno	122		
Vne	151		

## FLIGHT EMERGENCY PROCEDURES

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### ENGINE FAILURE DURING FLIGHT

1. Airspeed..... **70 KTS**
2. Carburetor Heat..... ON
3. Landing area ..... SELECT
4. Fuel Selector Valve ..... BOTH
5. Mixture ..... RICH
6. Ignition Switch ..... BOTH or START
7. Primer ..... IN and LOCKED
8. Transponder ..... 7700; Mayday call

### ENGINE FIRE IN FLIGHT

1. Mixture ..... IDLE CUT OFF
2. Fuel Selector ..... OFF
3. Ignition Switch ..... OFF
4. Cabin Heat/Air ..... OFF (except overhead vents)
5. Airspeed..... 100 kts (to extinguish fire)
6. Master Switch ..... OFF (after flaps set)
7. Forced Landing..... EXECUTE

### EMERGENCY LANDING NO POWER

1. Passenger Seat Backs..... MOST UPRIGHT
2. Seats and Seat Belts..... SECURE
3. Airspeed..... 70 KTS (flaps UP)  
..... 65 KTS (flaps DOWN)
4. Mixture ..... IDLE CUT OFF
5. Fuel Selector ..... OFF
6. Ignition Switch ..... OFF
7. Wing Flaps ..... AS REQ'D (40° recommended)
8. Doors ..... UNLATCH prior to touchdown
9. Master Switch ..... OFF (landing assured)
10. Touchdown ..... SLIGHTLY TAIL LOW
11. Brakes ..... APPLY HEAVILY

### ELECTRICAL FIRE IN FLIGHT

1. Master Switch ..... OFF
2. Vents/Cabin Air/Heat..... CLOSED
3. Fire Extinguisher ..... ACTIVATE
4. Avionics Master Switch..... OFF
5. All Other Switches (except ignition) ..... OFF

If Fire is CONFIRMED OUT ..... Ventilate Cabin  
6. Vents/Cabin Air/Heat..... OPEN (if Fire is out)

If fire is out & elec. power is necessary:

7. Master Switch ..... ON
8. Circuit Breakers..... CHECK (Don't reset)
9. Radio Switches..... OFF
10. Avionics Master Switch..... ON
11. Radio/Electrical Switches.... ON (1 at time)

### DITCHING

1. Radio..... TRANSMIT MAYDAY (location)
2. Transponder ..... SQUAWK 7700
3. ELT ..... ACTIVATE
4. Heavy objects ..... SECURE or JETTISON
5. Passenger Seat Backs..... MOST UPRIGHT
6. Seats and Seat Belts..... SECURE
7. Wing Flaps ..... 20°-40°
8. Power ..... 300 fpm descent @ 65 KTS  
Without power..... 70 KTS flaps up OR  
..... 65 KTS flaps 10°
9. Approach:  
High winds, heavy seas ..... INTO THE WIND  
Light winds, heavy swells... PARALLEL TO SWELLS
10. Cabin doors..... UNLATCH
11. Touchdown ..... LEVEL ATTITUDE
12. Face ..... CUSHION at touchdown
13. Airplane ..... Evacuate by door  
(open window 1st)
14. Life Vests/Raft ..... CLEAR of A/C INFLATE

### CABIN FIRE

1. Master Switch..... OFF
  2. Vents/Cabin Air/Heat .... CLOSED(avoid draft)
  3. Fire Extinguisher ..... ACTIVATE
- If Fire is CONFIRMED OUT ..... Ventilate Cabin
4. Vents/Cabin Air/Heat ..... OPEN (if fire is out)
  5. Land the airplane as soon as possible

### WING FIRE

1. Navigation Light Switch ..... OFF
2. Pitot Heat Switch ..... OFF
3. Sideslip..... NOSE TO SIDE WITH FIRE

### EXCESSIVE DISCHARGE

1. Alternator -- OFF
2. Nonessential Electrical Equip -- OFF
3. Flight -- TERMINATE as soon as practical.

### OVER VOLTAGE LIGHT ON

1. Avionics Power Switch..... OFF
  2. Master Switch..... OFF (both sides)
  3. Master Switch..... ON
- If over-voltage light off:
4. Avionics Power Switch..... ON
- If over-voltage light illuminates again:
5. Flight ..... LAND AS SOON AS PRACTICAL