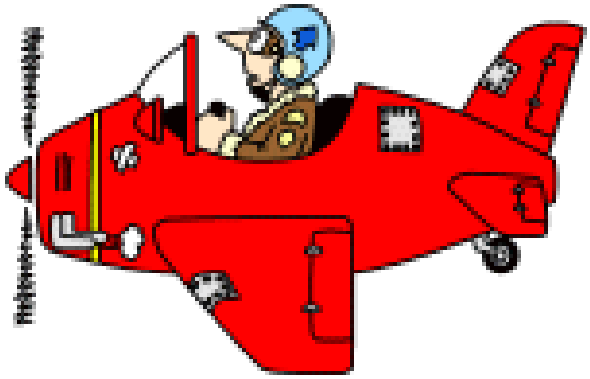

Flight Operations Handbook N24981

SilverPilot

Flight Operations Handbook for Silverpilot N24981

This Flight Operations Handbook has been compiled specifically for the operation of N24981, a Cessna 152, and is intended to describe flight maneuvers in this aircraft that are required by the FAA Practical Test Standards for pilot certification.

POH Disclaimer

The Pilot's Operating Handbook (POH) is the final authority for the operation of N24981. It is intended and believed at this Flight Operations Handbook is consistent with the POH for N24981. However not all maneuvers required by the FAA Practical Test Standards are included in the POH. All effort has been made to align this Flight Operations Handbook with the POH. However to the extent that this Flight Operations Manual may be inconsistent with the POH then the POH shall be the final authority.

V Speeds in Knots

V_{SO}=Stall with Flaps 30°	35	Approach Flaps UP	60-70
V_{SO}=Stall with Flaps 10°	43	Approach Flaps Down	55-65
V_{S1}=Stall no Flaps	48	Touch Down Normal with Power	54
Vr=Rotation	50	Touch Down Engine Out No Flaps	65
Vx=Best Angle of Climb Flaps 10°	54	Touch Down Engine Out With Flaps	60
Vx=Best Angle of Climb No Flaps	55	Max Crosswind Component	12
Best Glide Full Gross	60		
Vy=Best Rate of Climb 10,000'	61	**Short Field Takeoff**	
Vy=Best Rate of Climb Sea Level	67	Flaps	10°
Normal Climb	70-80	End of Runway & Breaks	
Cruise Climb	70-80	V_{r1}	46
Vfe=Max Flaps Extend	85	Over 50' Obstacle-Barrier Speed	54
Va=Max Abrupt Elevator 1350#	93	Vy	67
Va=Max Abrupt Elevator 1670#	104	Milk Flaps Up	
Vno=Max Rough Air	111		
Window Open Max	143	**Soft Field Takeoff**	
Vne=Never Exceed	149	Flaps	10°
		Rolling Start	
Normal Takeoff		Back Pressure/Nose Up	
Flaps	0°-10°	Over 50' Obstacle-Barrier Speed	54
Vr	50	Vy	67
Vy	67	Milk Flaps Up	
Milk Flaps Up			

Classification of Checklists

Checklist procedures are assigned one of three classifications:

Normal checklists:
Normal procedures such as run-up, takeoff, climb, cruise and landing.

Abnormal checklists:
Procedures used in response to system failures and malfunctions that, while not immediately threatening, may affect safety of flight if not addressed.

Emergency checklists:
Procedures used in response to system failures and malfunctions that are an immediate threat to the safety of flight.

Checklist Completion Procedures

Normal, Abnormal, and Emergency checklists can be completed as:

Do-Lists: A Do-List checklist (sometimes called a Cookbook checklist) is executed by reading the checklist item and selecting the appropriate condition of the item. Do-Lists

are used when ample time exists for completion of the checklist.

Flow Patterns: A Flow Pattern checklist refers to a logical path through the cockpit that the pilot will move along during the execution of the checklist. Flow Patterns Checklists use a "do and then verify" approach to checklist completion. The items are memorized and executed without immediate reference to the written checklist. Following completion of the Flow Pattern Checklist, the Do-List Checklist is referenced as soon as time and workload permit to ensure procedure completion.

Set Mixture Procedures

The fuel mixture for the typical aircraft is usually set to full rich for takeoffs at elevations below 3000 feet. This is often necessary in order to keep engine temperatures in control during climb out. However N24981, like all Cessna 152 aircraft, necessitates extra attention to fuel mixture settings because of spark plug fouling due to air intake, carburetor and intake manifold configurations. N24981 should be aggressively leaned.

> *SPARK PLUG FOULING* (POH page 3-13)
> *A slight engine roughness in flight may be caused by one or more spark plugs becoming fouled by carbon or lead deposits. This may be verified by turning the ignition switch momentarily from BOTH to either L or R position. An obvious power loss in single ignition operation is evidence of spark plug or magneto trouble. Assuming that spark plugs are the more likely cause, lean the mixture to the recommended lean setting for cruising flight. If the problem does not clear up in several minutes, determine if a richer mixture setting will produce smoother operation. If not, proceed to the nearest airport for repairs using the BOTH position of the ignition switch unless extreme roughness dictates the use of a single ignition position.*

Below 3,000 feet:

> *TAKEOFF* (POH page 4-14)
> *Prior to takeoff from a field above 3000 feet, the mixture should be leaned to give maximum RPM in a full throttle, static run-up.*

And below 3,000 feet:

> FUEL SAVING PROCEDURES (POH page 4-17)
> *…3. Lean the mixture for maximum RPM during all operations at any altitude, including below 3000 feet, when using 75% or less power.*

Engine red line is 2550 RPM according to the POH at page 2-4. And an analysis of the power chart in the POH at page 5-14 indicates 75% power is not exceeded at or below 2400 RPM. Hence, on takeoff from any field below 3000 feet, leaning for maximum RPM may be indicated as long as 2400 RPM is not exceeded. Nonetheless, monitoring for cylinder head temperatures below 400º F is appropriate. This will increase cylinder head temperatures somewhat and thus reduce the tendency of the Cessna 152 to foul spark plugs.

Taxi-Out

A cause of brake failure is the creation of excessive heat through improper braking practices. Riding the brakes while taxiing causes a continuous build-up of energy which may lead to excessive heat. To avoid brake failure, observe the following:

- Directional control should be maintained with rudder deflection supplemented with brake pressure as required,

- Use the minimum necessary brake application to achieve directional control,
- Use only as much power as is necessary to achieve forward movement. 1000 RPM is enough to maintain forward movement,
- Power settings slightly above 1000 RPM are permissible during taxi to start motion, for turf, soft surfaces,
- Avoid unnecessary high speed taxiing,
- Do not ride the brakes. Pilots should consciously remove pressure from the brakes while taxiing by keeping their heals on the floor board unless using the breaks.

Before Takeoff

Complete the before takeoff checklist as a Normal Do-List Checklist in an appropriate run up area prior to departure. Verify engine oil temperature reaches a minimum of 100º F prior to applying run up power settings.

In warm or hot weather, precautions should be taken to avoid overheating during prolonged ground engine operation. Additionally avoid long periods of idling as such may cause fouled spark plugs.

Complete a takeoff briefing to review critical items prior to takeoff. At a minimum, a takeoff briefing should include the following items:

- Type of takeoff procedure used (normal, short, or soft),
- Takeoff distance required / runway distance available,
- V_R and initial climb speed,
- Abnormality / engine failure before V_R, Action?
- Abnormality / engine failure after V_R. Action?

Sample Takeoff Briefing

This will be a _____ (normal, short, soft) takeoff from RWY _____ with a takeoff distance of _____ feet and _____ feet of runway available. Rotation speed is _____ KIAS. Initial heading after takeoff is _____ degrees to an altitude of _____ feet. Abort the takeoff for any engine failures/abnormalities prior to rotation. If the engine fails after rotation I will _____.

Normal Takeoff

At Quincy, FL Airport (2J9), the usual flap setting for a normal takeoff is 10º flaps.

Align the aircraft on the runway centerline and smoothly apply full power in a 4 to 5 second continuous sweep. Maintain directional control with aileron and right rudder input for torque effect during the takeoff acceleration.

Check airspeed and engine indications early in the takeoff roll. Discontinue the takeoff by reducing the power to idle and apply brakes as necessary for any abnormal airspeed or engine indications, sluggish acceleration, or rough engine.

At V_R gradually apply back pressure to the control yoke to increase the angle of attack sufficient to rotate the aircraft into the air.

In a normal takeoff, and immediately after rotation, release back pressure while in ground effect and accelerate to V_Y checking engine parameters, weight & balance and density altitude effects. Discontinue the takeoff if any abnormality is detected.

Maintain coordination with proper right rudder input during climb out for “P” factor effect. Retract the flaps when clear of terrain and obstacles. Slight back pressure may be required after flap retraction to maintain V_Y.

Cross Wind Takeoff Technique

Deflect the ailerons into the wind as needed during a crosswind takeoff. Maintain directional with aileron and rudder input. As speed increases less aileron will be needed as the ailerons and rudder become more effective. Allow the aircraft to accelerate slightly higher than V_R prior to rotation. Lift the aircraft off the ground slightly quicker than in a normal takeoff. Shortly after rotation, crab the aircraft into the wind to track the flight path along the runway centerline at a non-towered airport or maintain the runway heading and ”float with the wind” at a towered airport.

Short Field Takeoff

Use the short field technique to maximize takeoff performance over obstacles. Flaps are set to 10º. Position the aircraft on the runway centerline as close as possible to the end of the runway and set breaks. Smoothly apply full power. Check engine indications and ensure full power before releasing the brakes. With elevator, streamline the airflow over the wings to minimize drag during acceleration. Rotate the aircraft at V_X. Hold V_X until clear of obstacles. Then pitch for V_Y.

Soft Field Takeoff

Avoid runways with long grass, soggy soil and large ruts or holes or loose gravel or sand. Ensure the quality of the runway is adequate to support the aircraft. Add 20% to takeoff ground roll distance for dry grass runways and 30% for wet grass.

Higher power settings will be required to taxi on grass surfaces. Hold full back pressure on the control yoke while taxiing to lessen nose gear stress.

Flaps are set to 10º. During the initial takeoff roll hold back pressure in order to reduce the stress on the nose gear. Reduce the back pressure slightly once the nose wheel lifts off the ground. Hold the aircraft in a nose up attitude until the aircraft becomes airborne in ground effect. Once airborne reduce back pressure as necessary to maintain in ground effect or within 20 feet of the surface. Accelerate the aircraft to V_X (for obstacles clearance) then accelerate to V_Y before climbing out of ground effect.

Transition to Cruise Flight

The transition from climb to cruise is done with Full Power until cruise airspeed is achieved. N24981 has a cruise propeller and as such one or two power reductions may be necessary before reaching cruise airspeed in order to keep the RPM from exceeding red line. Once cruise airspeed is attained the power setting should be adjusted to 2400 RPM for training.

Descent from Altitude

Descents from cruising altitude should be planned during cruise flight considering the amount of altitude to lose, distance and time to destination, ATC restrictions, obstacle/terrain clearance, desired rate of descent, and engine care.

A useful process is to calculate an elapsed decent time by planning a 500’/min descent from cruise altitude to landing pattern altitude and then initiating a 500’/min descent at such calculated elapsed decent time.

Complete the descent checklist as a Normal Do-List Checklist. Set appropriate frequencies and review weather to determine the active runway.

Power should be adjusted during descent to manage airspeed and maintain engine temperatures as desired. Maintain airspeed appropriate to any turbulence encountered during the descent.

Before Landing / Traffic Pattern

Complete the Before Landing Checklist as a Normal Flow Pattern Checklist prior to entering the traffic pattern. When time and workload permit, but before turning final, complete the Normal Before Landing Checklist as a Do-List Checklist.

Adjust airspeed to cruise airspeed on the downwind leg. Choose and vocalize a Touchdown Point. Abreast of the Touchdown Point, “Set-Up” the aircraft for a **Stabilized Approach.**

Stabilized Approach Criteria

A stabilized approach is characterized by a constant angle, constant rate of descent profile ending near the Touchdown Point. Stabilized approach criteria apply to all approaches including practice power off approaches.

VFR Stabilized Approach Definition

All briefings and appropriate checklists should be completed by 500' AGL in visual conditions. A VFR approach is stabilized when all of the following criteria are achieved by 500' AGL:

- Proper airspeed,
- Correct flight path,
- Correct aircraft flap configuration,
- Appropriate power setting for configuration,
- Normal descent angle and descent rate,
- Only minor corrections are required to correct deviations.

A go around must be executed if the above conditions are not met and the aircraft is not stabilized by 500' AGL.

Hints:
Landings are a constant correction of misjudgments,
Eliminate as many variables as possible,
DO NOT FLOAT AWAY FROM THE AIRPORT on base leg,
Approach speeds ARE NOT variables, airspeeds **must** be maintained.

IFR Stabilized Approach Definition

All briefings and appropriate checklists should be completed including an Approach Briefing prior to the Initial Approach Fix (IAF) for instrument approaches. An IFR approach is stabilized when all of the following criteria are met no more than 300’ below the Final Approach Fix (FAF) altitude and continues to touchdown:

- Proper airspeed,
- Correct flight path,
- Correct aircraft configuration,
- Appropriate power setting for configuration,
- Normal descent angle and descent rate,
- Only minor corrections with pitch and power are required to correct airspeed and glide path deviations,
- Normal bracketing (+/- 5º) is used to correct for lateral navigation deviations.

A missed approach must be executed if the above conditions are not maintained during an instrument approach.

Hints:
Do not change flap configuration after crossing the FAF unless the runway is in sight and landing is assured. To facilitate a go around, a no flap landing may be used during instrument approaches when the weather is close to approach minimums and the runway length is adequate.

Sample Approach Briefing

This will be a _____ (ILS, GPS, etc.) approach to RWY_____ via the _____ transition (VTF or IAF). The proper navigation source (GPS, VLOC) for the approach is selected and the proper course of _____ is set in on the indicator. Applicable approach frequencies are tuned and identified. Final approach speed is _____ KIAS with approach flaps set at ____ prior to the

FAF. Call out 1000 feet, 500 feet and 100 feet above minimums. The minimum altitude for the approach is _____ feet. The missed approach procedure is climb to _____ altitude and turn left/right to the _____ fix and hold.

Go-Around

A go around should be executed anytime an approach does not meet the VFR or IFR Stabilized Approach Definitions. A go around should be completed from memory as a Normal Flow Pattern checklist since it is a time critical maneuver. In addition to the stabilized approach criteria, execute a go around/missed approach for these conditions:

- Excessive ballooning during round out or flare,
- Excessive bouncing or proposing,
- Landing beyond 1st third of the runway,
- Any condition when a safe landing is in question.

The first priority of executing a go around is to stop the aircraft's descent and transition to a V_Y climb. Smoothly and promptly apply full power while simultaneously leveling the wings and pitching the aircraft to stop the descent. Maintain coordination while adding power by applying rudder pressure. If the flaps are Full, do not fully retract the flaps at this point in the go around because it may lead to excessive altitude loss. If the flaps are Full then retract them to 50%. Begin pitching for a climb attitude once the aircraft's descent rate has stopped and the aircraft is accelerating. Pitch for V_X if obstacle clearance is an issue. Pitch for V_Y for all other situations. Fully retract flaps once the aircraft is climbing, and clear of obstacles, and at V_Y

Normal Landing

Normal landings should be made with Full Flaps in order to attain the slowest possible touchdown speed. Take it easy on the aircraft please. However when training, often 10º of flaps are used to distinguish a normal landing from a specialty type landing. Final approach speeds should be adjusted to account for gusts exceeding 10 KTS by adding half of the gust factor.

Bring power to idle cutoff on final while maintaining final approach speed right down to flair. After flair and while burning off excess airspeed, maintain a minimum of floating or ballooning. Touchdowns should be made first on the main gear right at stall speed or slightly above. Gently lower the nose wheel after the mains are on the ground. On roll-out keep back pressure on the yoke to ease the strass on the nose near.

Cross Wind Landing Technique

Crosswind Landings are best executed with a slightly longer final leg than a normal landing, a bit more power than a normal landing, and no flaps or in lighter crosswinds, no more than 10º Flaps.

It is often useful to test the speed and direction of the wind shortly after the base to final turn by using a crab technique to establish a ground track parallel to the runway centerline. Then transition to the wing low touchdown on short final or even after flair in the case of a light crosswind.

The essence of crosswind landings in N24981 is a touchdown in such a configuration that:

- the upwind wing is low and maintained low with aileron input,
- the longitudinal axes of the aircraft is maintained parallel to runway with opposite rudder input,
- the direction of travel of the aircraft is maintained parallel to runway,
- ground contact should be made on the upwind main landing gear first followed by the downwind main landing gear, then the nose gear,
- hold aileron correction into the wind during the rollout and apply rudder as necessary to maintain directional control.

Slips to a Landing Technique

Slips to a landing are used to lose altitude at an accelerated rate without the need for flaps and are often useful in emergency landings. The technique is similar to the Crosswind Landing technique except that the control inputs are more exaggerated resulting in a sometimes uncomfortable attitude and the inability to keep the longitudinal axes of the aircraft in line with the flight path.

Specialty Landings

Specialty landings are described as Short Field Landings and Soft Field Landings. Until touchdown these specialty landings are similar to normal landing. The difference is:

1) what is done after touchdown, and

2) concentrating on what is most important, the Touchdown Point or the touchdown speed.

In the case of the Short Field Landing, you absolutely must land on the Touchdown Point (if you touchdown a bit fast-so be it). In the case of the Soft Field Landing, you absolutely must touch the ground as softly as possible in a full stall (if you float beyond the Touchdown Point a bit, so be it).

These specialty landings are best executed with a slightly longer final leg than a normal landing, a bit more power than a normal landing, and are made with Full flaps. Final approach speeds should be adjusted to account for wind gusts exceeding 10 KTS by adding half the gust factor.

Short Field Landing

Touchdown for a Short Field Landing is made on the main wheels first. Immediately after touchdown, keep power at idle, lower the nose wheel and brake as required. To decrease stopping distances consider retracting the flaps and holding the control yoke full aft during roll out. Emphasis should be placed on the accuracy of the Touchdown Point to ensure enough runway remains after touchdown to stop the aircraft.

Soft Field Landing

For Soft Field Landings always ensure that the condition of the runway surface is adequate to support the aircraft. Avoid turf runways with long grass, wet or soggy soil, large ruts or holes.

Touchdowns should be made on the main gear first. A soft touchdown will reduce the stress on the landing gear and make it easier to keep the nose wheel from digging into the turf and loss of directional control on roll out. Keep the nose wheel off the ground as long as possible by applying sufficient back pressure to the control yoke. A little power can be added immediately after touchdown to aid in keeping the nose wheel off the ground. Braking should be minimal. Excessive braking could lead to a loss of directional control. Higher power settings will be required to taxi on a soft field.

Maneuvers - General

Clearing turns are a necessity in order to check for other aircraft in the area during maneuvers. Clearing turns consists of at least two cruising turns in either direction while looking for traffic. Additionally note must be taken of available forced landing areas in case of emergencies. The area chosen should be clear of any obstacles or terrain and away from communities, livestock, or groups of people to prevent possible annoyance or hazards to others.

- Performance maneuvers, slow flight, and stalls should be performed at a minimum altitude of 1500’ AGL. Cardinal headings (N, S, E and W) should be used as reference points,
- Ground reference maneuvers should be performed at 1000’ AGL or applicable traffic pattern altitude. They should be entered from a downwind heading.

All turns to headings are executed by establishing the desired bank angle with coordinated aileron and rudder input followed by neutralizing the aileron and rudder and applying back

pressure while in the turn so as to not descend. Then rolling out of the bank with coordinated aileron and rudder while releasing the back pressure as level flight is attained.

Coordinated Roll In - Back Pressure - Coordinated Roll Out.

All turns in excess of 30º of heading change should be executed at a 30º angle of bank unless good reason exists for a lessor bank. Lessor angles of bank are justified for such things as passenger comfort and maneuvers for which performance is a concern such as in a climb or in Slow Fight. In these situations the angle of bank should be limited to 10º.

Maneuvering during Slow Flight

Practice Slow Flight with a variety of flap configurations while climbing, descending and turning. Enter the maneuver in level flight and smoothly reduce power to 1700 RPM. Maintain altitude while the aircraft slows to the desired airspeed. If indicated, add flaps at V_{FE}. As the indicated airspeed approaches, add power to maintain altitude. When adding power add more power than you think is necessary. If a misjudgment is made, it is easier to lose altitude than to gain altitude. Once established in Slow Flight, trim the aircraft if desired. Turns in Slow Flight are Performance Turns done at no more than 10º of bank. Recover from this maneuver if a stall is encountered.

Recover from Slow Flight with full power, milking off the flaps as passing V_{FE} and maintain full power until cruise airspeed is regained.

Steep Turns

Enter this maneuver at cruise configuration by smoothly banking the aircraft to 45º (Private) / 50º (Commercial) and simultaneously adding full power with a coordinated roll in and back pressure to maintain altitude. Continue the turn for 360 degrees. Start the roll out approximately 15º before completing the full turn and simultaneously release back pressure and the power that was added during the maneuver.

Power off Stalls

Practice this maneuver with varying flap configurations. Enter this maneuver from Slow Flight. Then establish a descent of approximately 500'/min. Once a stabilized descent is established, reduce power to idle and gradually increase pitch to an attitude that will obviously produce a stall and hold that attitude. If a stall with a bank is called for, then at this point add no more than 10º of bank. At first indication of a stall or at full stall, a recovery is initiated by:

- Reduce angle of attack and level wings,
- Apply full power,
- If Full Flaps are reduce Flaps to 50%,
- Accelerate to V_Y
- Retract Flaps fully,
- Clear terrain and obstacles,
- Positive rate of climb.

Power on Stalls

Enter this maneuver from Slow Flight with no Flaps. Slow the aircraft to V_R while maintaining altitude. At V_R add Full Power and at the same time increase pitch to an attitude that will obviously produce a stall and hold that attitude. As the nose comes up with Full power, apply rudder to maintain a centered ball. If a stall with a bank is called for, then at this point add no more than 10º of bank. At first indication of a stall or at full stall, a recovery is initiated by:

- Reduce angle of attack and level wings,
- Maintain full power,
- If Full Flaps are reduce Flaps to 50%,
- Accelerate to V_Y
- Retract Flaps fully,
- Clear terrain and obstacles,
- Positive rate of climb.

Turns Around a Point

After clearing turns, turn downwind at 1000' AGL. Select a prominent ground reference point. Fly two or more complete, uniform radius circles around the ground reference point while compensating for wind drift and maintaining constant airspeed. At the fastest groundspeed around the point, which will be when the aircraft heading is downwind, the angle of bank should be 30º.

S-Turns

During clearing turns identify a road or other prominent straight line on the ground that lies perpendicular to the wind. Enter the maneuver on a downwind heading at 1000' AGL. Compete a series of 180° turns of uniform radius in opposite directions, re-crossing the reference line at a 90° angle (upwind and downwind) just as each 180° turn is completed. Apply the necessary wind correction to maintain a constant radius turn on each side of the reference line while maintaining constant airspeed and altitude. Set up properly S-Turns will result in flight such that:

- When flying the upwind turn a slow roll into the turn will be necessary,
- When flying the downwind turn a quicker roll into the turn will be necessary.

Emergencies

Power failure emergencies in N24981 are pretty simple. Initially use the Emergency Flow Checklist from memory and follow up with the Emergency Do-List Checklist if time permits. In all cases:

- Immediately pitch the nose for Controlled Flight. This will only be necessary if the aircraft is in a nose up attitude at the time of the power failure,
- Begin the airspeed toward the Best Glide Speed for the gross weight of the aircraft,
- Check the Mixture and Carburetor Heat. Then cycle the Magnetos, and Master Switch in an effort to re-establish power,
- Check the wind direction and speed,
- Select an off-airport landing site if an airport is not within gliding distance,
- Approach landing site with minimal flaps until landing area is assured.

Hints:
Controlled Flight **must** be maintained until the aircraft comes to rest. Controlled Flight means that ailerons, rudder and elevator are still effective to direct the path of the aircraft. Turns at low altitude tend to result in loss of Controlled Flight. In a power failure at low altitude or on climb out after takeoff below 500' AGL, **DO NOT** attempt a turn more than 30° left or right in order to maintain Controlled Flight.

Aircraft Checklist C-152 N24981 White 11/22/2013

INITIAL
WX & Density Altitude
Weight & Balance
Flight Plan-File
Papers-A.R.O.W.
Master/Alt -ON
Flaps-Extend
Fuel Gauges-True
Pitot Heat-Test
Stall Indicator-Test
Lights All -Test
Hobbs/Tach Time
Master-OFF

Walk Around
Drains
  Fuel Tank Sumps
  Low Point Sump
Fuel Quantity
Fuel Quality
Caps/Drains/Vents
Engine/Oil/Belt
Prop/Air Intake
Exhaust System
Surfaces & Controls
Pitot Static Port
Gear/Tire/Breaks
Antennas
Tires/Chocks
Final Look

INTERIOR
Seat Belts
Seat track/back-Lock
Headsets hookup
Put Key In Ignition
Passenger Brief
Fuel-ON
Circuit Breakers
All Lights-OFF
Breaks-Pedal Test

START
Brakes-Set
Radio Master-OFF
Carb Heat-OFF
Mixture-Full Rich
Prime and Lock
Beacon Light-ON
Master/Alt-ON
Throttle-Slight
Prop-Clear

Start- Mags
Oil Pressure-Check
Idle at 1000-1200 RPM
Radio Master-ON
Nav Lights-As Req
Mixture-Lean Out
Flaps-UP
Fuel Flow Meter-Set

Pre-Taxi
Transponder-ON
Radios-Set/Test
ATIS/AWOS
Altimeter-Set
Get Taxi Clearance
Breaks-Test
Heat/Vents/Defrost

Taxi
HI to Compass-Set
Attitude Indicator-OK
Turn Coordinator-OK

Run Up
Brakes-Set
Fuel-Check
Trim-For Takeoff
Flight Controls-Free
Instruments-Check
1700 RPM
  Mixture-Best Power
  Mags L&R-Check
  Carb Heat-Check
  Vacuum-Check
  Amps/Volts-Check
  Oil Pressure-Check
  Oil Temp-Check
Idle-Check
Friction Lock-Check

PRE-TAKEOFF
IFR Re-Check
Traffic Monitor-As Req
Navigation-Set
Flaps As Req
Mixture-Best Power
Carb Heat-OFF
Primer Locked
Door/Windows Locked
Beacon/Strobe-ON
Nav Lights-As Req
Landing Light-ON
Transponder-ALT
Abort Plan
Take-off Clearance
Time-Note

TAKEOFF
GUMPS
Lights-Camera-Action
HI to Compass-Set
Full Throttle
Maximum RPM
Oil Pressure-Check
Rotate 50 Kts
Flaps
Vx 54 Kts
Vy 67 Kts

CRUSE CLIMB
Power-Maximum
Cruse Climb 70-80
Land Light-As Req
Mixture-As Req
Instruments-Check
Flight Plan-Open
GUMPS

CRUISE
Power-As Req/POH
Mixture-Set
Instruments-Check
HI to Compass Set
Fuel-ON
GUMPS

Descent
ATIS/AWOS
Mixture- As Req
Carb Heat-As Req
Fuel-ON
Altimeter-Set
Instruments-Check
HI to Compass set
GUMPS

PRE-LANDING
ATIS/AWOS
Landing Light-ON
Seat Belts/Harness
Carb Heat-As Req
Mixture-Best Power
Fuel-ON
Flaps-As Req
GUMPS

LANDING
Flap Choice
  Adjust for X-Wind
Short Final
  Adjust for X-Wind
GUMPS

GO AROUND
Power-Full
Carb Heat-OFF
Positive Climb Rate
Flaps-Milk Off
Vx 54 Kts
Vy 67 Kts
GUMPS

AFTER LANDING
Taxi Clearance
Flaps-UP
Carb Heat-OFF
Strobe Lights-OFF
Landing Light-OFF
Pitot Heat-OFF
Transponder-STBY

SECURING
Radio Master-OFF
All Lights-OFF
Mixture-Lean
Mags-OFF
Master/Alt-OFF
Hobbs/Tach Time
Secure Yoke
Windows-Closed
Sun Screen-ON
Tie Down-Tied
Cabin Door-Closed
Close Flight Plan

Take Your Trash

GUMPS
Gas-Pump/Tanks
Undercarriage-Flaps/Gear
Mixture
Propeller
Seat Belts

Light Gun Signals		
COLOR	ON GROUND	IN FLIGHT
STEADY GREEN	CLEARED FOR TAKOFF	CLEARED TO LAND
FLASHING GREEN	CLEARED FOR TAXI	RETURN FOR LANDING
STEADY RED	STOP	YIELD TO OTHER AIRCRAFT, CONTINUE CIRCLING
FLASHING RED	TAXI CLEAR OF RUNWAY	AIRPORT UNSAFE. DO NOT LAND
FLASHING WHITE	RETURN TO STARTING POINT	NOT APPLICABLE
ALTERNATING RED & GREEN	EXERCISE EXTREME CAUTION	EXERCISE EXTREME CAUTION

CRUISE PERFORMANCE			
Economy	88 kts	2150 RPM 4.7 gph	65%
Normal	97 kts	2300 RPM 5.5 gph	65%
Maximum	101 kts	2400 RPM 6.0 gph	75%

TLH Tallahassee Regional		2J9 Quincy Airport		BGE Bainbridge Airpark	
ATIS	119.45	ASOS	118.975	ASOS	121.125
Ground	121.9	CTAF	122.7	CTAF	122.975
Clearance Delivery	126.65	Elevation	225 ft	Elevation	141 ft
Tower	118.7	Pattern MSL	1,000 ft	Pattern MSL	1,141 ft
CTAF	118.7	Right Pattern RW 14			
Approach West	135.8			**VORs**	
Approach East	(128.7)			**70J Cairo Airport**	
VOR Test VOT	111.0	ASOS	None	Greenville GEF	109.0
FSS (Duplex)	122.4	CTAF	122.7	Marianna MAI	114.0
FSS Receive SZW	117.5	Elevation	264 ft	Moultrie MGR	108.8
Elevation	81 ft	Pattern MSL	1,363 ft	Panama City PFN	114.3
Pattern MSL	1,000 ft			Seminole SZW	117.5
Localizer 27	111.9			Valdosta OTH	114.8
Localizer 36	110.3	**17J Donalsonville Airport**			
		ASOS	None	**Transponder**	
Other		CTAF	122.9	VFR Code	1200
		Elevation	148 ft	Emergency Code	7700
Emergency	121.5	Pattern MSL	1,150 ft	Lost Communication	7600
Millilon Air TLH Unicom	130.175				
Air to Air	122.75				
		N24981 - V Speeds in Knots			
V_{SO}=Stall with Flaps 30°	35	Approach Flaps UP	60-70	Landing Gear Pressures:	
V_{SO}=Stall with Flaps 10°	43	Approach Flaps Down	55-65	Nose Gear 30 psi	
V_{S1}=Stall no Flaps	48	Touch Down Normal with Power	54	Main Gear 21 psi	
V_R=Rotation	50	Touch Down Engine Out No Flaps	65	Nose Gear Shock Strut 20 psi	
V_X=Best Angle of Climb Flaps 10°	54	Touch Down Engine Out With Flaps	60	Takeoff Flaps limited to 10°	
V_X=Best Angle of Climb No Flaps	55	Max Crosswind Component	12	Max Gross Weight 1670#	
Best Glide Full Gross	60			Max Baggage Weight 120#	
V_Y=Best Rate of Climb 10,000'	61	**Short Field Takeoff**		Fuel Capacity = 26 gal 24.5 usable	
V_Y=Best Rate of Climb Sea Level	67	Flaps	10°	Oil At least 4 Quarts-6 Max	
Normal Climb	70-80	End of Runway & Breaks		Oil Grade 15W50	
Cruise Climb	70-80	V_{R1}	46		
V_{FE}=Max Flaps Extend	85	Over 50' Obstacle-Barrier Speed	54	**Landing**	
V_A=Max Abrupt Elevator 1350#	93	V_Y	67	Flaps 10° at	85
V_A=Max Abrupt Elevator 1670#	104	Milk Flaps Up		Flaps 20° - 30° Depending on Wind	
V_{NO}=Max Rough Air	111			Normal Approach	65
Window Open Max	143	**Soft Field Takeoff**			
V_{NE}=Never Exceed	149	Flaps	10°	Short Field Landing Approach	54
		Rolling Start		Touchdown on Spot	
Normal Takeoff		Back Pressure/Nose Up			
Flaps	0°-10°	Over 50' Obstacle-Barrier Speed	54	Soft Field Landing Approach	54
V_R	50	V_Y	67	Touchdown at Stall	
V_Y	67	Milk Flaps Up			
Milk Flaps Up					

N24981 Emergency Checklist From POH-Other

A) Engine Failure During Takeoff Run

1. Throttle-Idle
2. Breaks Apply
3. Wing Flaps Retract
4. Mixture Idle Cutoff
5. Ignition Switch OFF
6. Master Switch OFF

B) Engine Failure Immediately After Takeoff

1. Airspeed 60 kts
2. Mixture Idle Cutoff
3. Fuel Shutoff Valve OFF
4. Ignition Switch OFF
5. Wing Flaps As Required
6. Master Switch OFF

C) Engine Failure During Flight

1. Airspeed 60 kts
2. Carburetor Heat ON
3. Primer In and Locked
4. Fuel Shutoff Valve ON
5. Mixture Rich
6. Ignition Switch Both (or Start if prop is stopped)

D) Emergency Landing Without Engine Power

1. Airspeed 65 kts (Flaps Up) 60 kts (Flaps Down)
2. Mixture Idle Cutoff
3. Fuel Shutoff Valve OFF
4. Ignition Switch OFF
5. Flaps As Required (30° Recommended)
6. Master Switch OFF
7. Doors Unlatch Prior to Touchdown
8. Touchdown Slightly Tail Low
9. Breaks Apply Heavily

E) Precautionary Landing With Engine Power

1. Airspeed 60 kts
2. Flaps 20°
3. Select Field Noting Terrain & Obstacles Retract Flaps Upon Reaching Safe Altitude & Airspeed
4. Radio & Electrical Switches OFF
5. Flaps 30° On Final Approach
6. Airspeed 55 kts
7. Master Switch OFF
8. Doors Unlatch Prior to Touchdown
9. Touchdown Slightly Tail Low
10. Ignition Switch OFF
11. Breaks Apply Heavily

F) Ditching

1. Radio Transmit Mayday 121.5 with Location & Intensions
2. Secure or Jettison Unneeded Heavy Objects
3. Approach High Winds Heavy Seas Into Wind Light Winds Heavy Swells Parallel to Swells
4. Flaps 30°
5. Power Establish 300ft/min Descent @ 55 kts
6. Cabin Doors Unlatch
7. Touchdown Level Attitude @ 300ft/min Descent
8. Face Cushion @ Touchdown with Folded Coat
9. Airplane Evacuate. If Necessary Open Windows Flooding Cabin And Equalizing Pressure To Open Doors
10. Life Vests and Raft Inflate

G) Engine Fire During Start on Ground

1. Continue Cranking to get a start which will suck the flames and accumulated fuel through the carbonator and through the engine

If Engine Starts:

2. 1700 RPM for a few minutes
3. Then SHUTDOW and check for damage

If Engine Fails to Start:

4. Continue Cranking to get a start
5. Get a Fire Extinguisher
6. Secure Engine by:
   a. Master Switch OFF
   b. Ignition Switch OFF
   c. Fuel Shutoff Valve OFF
7. Put out Fire with a Fire Extinguisher
8. Inspect and Repair Fire Damage

H) Engine Fire In Flight

1. Master Switch OFF
2. All other Switches (except ignition switch) OFF
3. Vents/Cabin Air/Heat CLOSED
4. Fire Extinguisher ACTIVATE (then ventilate cabin)

If fire is out & continued flight necessary then:

5. Master Switch ON
6. Check Circuit Breakers for faulty circuit DO NOT Reset
7. Radio/Electrical Switches ON one at a time with delay after each until short circuit is located
8. Vents/Cabin Air/Heat OPEN when fire completely out

I) Cabin Fire

1. Master Switch OFF
2. Vents/Cabin Air/Heat CLOSED to avoid drafts
3. Fire Extinguisher ACTIVATE (then ventilate cabin)
4. Land as soon as Possible & inspect damage

J) Wing Fire

1. Navigation Light Switches OFF
2. Strobe Light Switch OFF
3. Pitot Heat Switch OFF

Perform side slip to keep flames way from fuel tank & cabin & land as soon as possible

K) Inadvertent Airframe Icing Encounter

1. Pitot Heat Switch ON
2. Turn back or change altitude to obtain outside air temp that is less conducive to icing
3. Pull Cabin Heat full OUT to obtain max defroster air temp. For greater airflow at reduced temps, adjust cabin air control as required
4. Open Throttle to increase engine speed & minimize ice buildup on Prop
5. Watch for signs of carb air filter ice and apply Carb Heat as required. An unexpected loss in engine speed could be caused by carb ice or air intake filter ice. Lean mixture for max RPM if Carb Heat is used continuously
6. Plan a landing as soon and possible. With extremely rapid ice build-up select an “off airport” landing
7. With an ice of ¼ inch or more on wing leading edges be prepared for significantly HIGHER STALL speed
8. Leave WING FLAPS RETRACTED. With a sever ice build-up on the horizontal tail the change in wing wake airflow direction caused by wing flap extension could result in a loss of elevator effectiveness
9. Open left window and scrape ice from a portion of windshield for visibility in the landing approach
10 Perform landing approach using a forward slip for improved visibility
11. Approach at 65 to 75 kts depending upon the amount of ice accumulation
12. Perform a landing in level attitude

L) Landing With A Flat Tire

1. Wing Flaps as Desired
2. Approach NORMAL
3. Touchdown GOOD TIRE FIRST hold airplane off flat tire as long as possible with aileron

M) Electrical-Over Voltage Light Illuminates

1. Master Switch-Both sides OFF
2. Master Switch-Both sides ON

If Over Voltage Light Illuminates Again:

3. Terminate Flight as soon as practical

N) Electrical-Ammeter Shows Discharge

1. Alternator OFF
2. Nonessential Electrical Equipment OFF
3. Terminate Flight as soon as practical

O) Radio Out

1. Check Radio Volume
2. Check Circuit Breakers
3. Recycle Alternator Switch
4. If you were NOT in Radio Contact with Approach/Tower Do NOT fly in Class B, C or D Airspace
5. If at a Towered Airport Look for Light Gun Signals