

Out Of The Blue Aviation (OOTBA) Standard Flight Training Procedures for N1151M (C-172)

Welcome to Out of The Blue Aviation! Thank you for giving us the opportunity to provide all of your flight training needs. Our goal is to provide you with the highest quality training enabling you to become a competent pilot and to pass both the FAA written and practical test with confidence.

All of our flight instructors are professional, top-notch aviators with a passion for flying and teaching. They take personal pride in ensuring you receive quality flight and ground training. He or she will work closely with you throughout your training and together, working as a team, you will be on your way to experiencing one of the most exciting adventures life has to offer! You will find that as the years go by the one thing you will never forget is your flight instructor's name.

Your flight training success will be a team effort as was already mentioned. To help manage and track your training you will be enrolled in either the Cessna course or the Gleim course. Prior to each flight you should review the briefing items and flight maneuvers so that you are well prepared for the flight pre-brief and the actual flight, maximizing training effectiveness. You will find that the flight will be much more productive and enjoyable. Immediately following the flight your instructor will conduct a thorough debrief and record your performance for each maneuver with a comment or two emphasizing areas to continue working on. Be sure to ask questions! He or she will then sign the performance sheet and place it in your training file. Finally, your instructor should briefly discuss what to expect on your next flight.

The following guide is intended to reduce both student and instructor frustration by standardizing most of the maneuvers you will encounter during your flight training. By no means is this document intended to replace governing directives and procedures. It merely supplements established FAA guidance and is specific to the aircraft you will train in at OOTBA. It should be noted that sometimes it might be necessary to deviate from these standards depending on conditions. These standards are based on procedures derived from the FARs/AIM, FAA handbooks, FAA evaluators and our very own flight instructors. Additionally, your flight instructor will provide more details and techniques for performing the various maneuvers.

- Be sure to arrive for each flight prepared. After you've been trained to do the pre-flight, you will be expected to arrive early enough to have the pre-flight done prior to your scheduled lesson time. **(Please note that if an aircraft needs to be removed from the hangar, you must have an OOTBA staff person assist with aircraft handling.)**
- You should have studied the flight maneuvers/briefing items and checked the weather, NOTAMS, Weight & Balance and performance data prior to every flight. Your flight instructor will assist you with this in the early part of your training and then you will be expected to do this on your own before each flight.
- When you are finished discussing the flight with your flight instructor, you or your instructor will brief the flight using the OOTBA Pilot Briefing Guide.
- The interior/exterior aircraft inspection should be conducted in accordance with the checklist. Be sure to have the checklist in hand as you perform the inspection.
- There are also checklists for before starting, starting engines, taxi and before takeoff. Be sure to use them!

Taxi:

- Prior to taxi, set radios and DG per the checklist. During taxi you need to be looking outside, not inside setting up the panel.
- Check the brakes as you start moving.
- Come to a complete stop before entering Taxiway "A" (main taxiway) to ensure it is clear in both directions before entering.
- Keep one hand on the throttle and the other on the wheel and position the controls for any winds as you taxi.
- Taxi speed should be at a walking pace when close to other aircraft and keep a close eye on your wing tips as you taxi by other aircraft or obstacles. Once clear of obstacles you may taxi at a brisk walking speed.
- Keep the nose wheel on the taxi line.
- Don't ride the brakes! If you are taxiing too fast simply reduce power and use brakes as required.
- This is also a good time to start painting a picture of who is in the traffic pattern by looking around and listening to the radio.

Before Takeoff

- Taxi to the far edges of the ramp near the end of the active runway so you do not block other traffic from entering the runway. Do not cross the hold short line.
- Position the aircraft into the wind (for engine cooling during engine run up) and perform the Before Takeoff checklist.
- For the departure briefing mention the takeoff roll you calculated, climb speed, your initial altitude to level off, direction of flight and emergencies during takeoff. The entire briefing should usually be no longer than 1 minute.
- Clear the area, with a 360 turn if possible, and make your radio call before entering the runway.

Normal Takeoff

N1151M

- Align nose with centerline.
- If crosswind, control wheel turned fully into the wind .
- Apply full power, smoothly.
- Quickly check engine gauges.
- Anticipate the need for adding right rudder to counter engine torque.
- If crosswind, reduce control wheel inputs as you accelerate.
- Rotate at 60 MPH.
- Climb at Vy (82 MPH) until at least 500' AGL then cruise climb at 90 MPH.
- If departing the pattern, at pattern altitude, depart straight out or 45 degrees toward the direction of the pattern.
- Perform climb checklist when clear of the traffic pattern area.
- If remaining in the pattern turn crosswind no sooner than 900 MSL and departure end of runway & make radio call. When leveling simply reduce power to maintain cruise climb speed and execute the Before Landing checklist.

Short Field Takeoff

- Flaps up.
- Taxi onto runway using ALL available runway.
- Align nose with centerline and hold brakes.
- If crosswind, control wheel turned fully into the wind.
- Apply full power, check engine gauges and release brakes.
- Anticipate the need for adding right rudder to counter engine torque.
- If crosswind, reduce control wheel inputs as you accelerate.
- Rotate at 60 MPH and climb at Vx (70 MPH) until clear of obstacles.
- Lower nose slightly, accelerate to Vy (82 MPH) and retract flaps.
- Normal climbout.

Soft Field Takeoff

- Set flaps to 10 degrees and hold full aft elevator while taxiing onto runway.
- Do not stop aircraft when entering onto the runway due to simulated soft ground.
- Align nose with centerline while adding full power.
- Quickly check engine gauges.
- If crosswind, control wheel turned fully into the wind.
- Anticipate the need for adding right rudder to counter engine torque.
- If crosswind, reduce control wheel inputs as you accelerate.
- As the nose wheel begins to lift off the runway, be prepared to reduce elevator backpressure and hold take off attitude until the airplane flies into ground effect.
- Lift off at minimum flying speed while gently lowering the nose to a nearly level attitude, and accelerate in ground effect to Vy (82 MPH).
- Retract flaps at Vy (82 MPH) after climb is established.
- Normal climbout.

- Maintain 115 MPH (approximately 2300 RPM).
- Perform cruise checklist.
- Look for traffic, birds and navigate to training area using ground references.
- Periodically check engine instruments, fuel balance and update heading gyro.

Training Area Arrival

- Ensure all stalls, slow flight & steep turns are accomplished above 1500' AGL.
- Monitor appropriate radio frequency.
- Orient yourself with ground references and be aware of class C airspace (Your instructor will show you ground references to stay clear of Class C)
- Perform clearing turn.
- Generally plan on the following sequence however, your flight instructor may vary the profile as required:

Steep Turn

- Clearing turn complete.
- Pick a heading, airspeed and altitude to maintain.
- Roll into 45 degrees of bank at V_a (122 MPH) or slightly below.
- Simultaneously add power and backpressure to maintain airspeed/altitude.
- Lead roll out by about 20 degrees.
- As you roll out, reduce backpressure and power to stay on altitude & speed.

Slow Flight

- Clearing turn.
- Pick heading and altitude to maintain during the maneuver.
- Carb heat on.
- Throttle 1500 RPM.
- Flaps to full below 100 MPH.
- Slow to min flying speed, which will be at or slightly below the white arc.
- Increased pitch & power will be required to maintain altitude and airspeed.
- Add enough right rudder to center the ball on the turn coordinator.
- You will likely hear a continuous stall warning horn at slow flight speed.
- Stabilize before making any turns.
- Make very shallow-banked turns (10 degrees or less) as required by your flight instructor.
- Recover by adding full power, carb heat off and raise flaps in increments.
- Maintain heading and altitude as you accelerate to cruise speed.
- Do not over-speed flaps.
- When reaching 115 MPH reduce power to approximately 2300 RPM to maintain cruise speed.

Power Off Stall (*Objective is minimum altitude loss during recovery*)

- Clearing turn.
- Carb heat on.
- Throttle 1500 RPM (maintain altitude as you slow).
- Flaps full below 100 MPH.
- Establish a glide at normal landing speed.
- Throttle idle.
- Raise nose slightly above horizon and hold it there with backpressure.
- When aircraft stalls, simultaneously release backpressure, add full power & carb heat off.
- Do not lower nose excessively. Return to a climb attitude as soon you have minimum flight speed.
- Retract flaps to 10 degrees (reduces drag) while raising nose to start a climb.
- Retract final flaps at V_y (82 MPH).

Turning Power Off Stall (*Objective is minimum altitude loss during recovery*)

- Clearing turn.
- Carb heat on.
- Throttle 1500 RPM (maintain altitude as you slow).
- Flaps full below 100 MPH.
- Establish a normal glide with up to 20 degrees of bank.
- Throttle idle.
- Raise nose slightly above horizon and hold it there with backpressure.
- Maintain constant bank angle and pitch attitude until the stall occurs.
- As aircraft stalls, simultaneously release backpressure, add full power, carb heat off & level wings.
- Retract flaps to 10 degrees (reduces drag) while raising nose to initiate a climb.
- Retract final flaps at V_y (82 MPH).

Power On Stall (*Objective is minimum altitude loss during recovery*)

- Clearing turn.
- Carb heat on.
- Throttle 1500 RPM and maintain altitude.
- Slow to about 65 MPH and smoothly add full power carb heat off.
- Raise nose until your feet look like they are touching the horizon (nose high).
- Apply right rudder for P-factor and torque effect (keep the ball centered).
- Check wingtips equal distance from horizon.
- Maintain this pitch-high attitude until a full stall.
- When stalled, release backpressure & ensure full power.
- Initiate a climb as soon as you have minimum flying speed.

Turning Power On Stall (*Objective is minimum altitude loss during recovery*)

- Clearing turn.
- Carb heat on.
- Throttle 1500 RPM and maintain altitude.
- Establish a 20-degree bank left or right.
- Slow to about 65 MPH and add full power carb heat off.
- Raise nose until your feet look like they are touching the horizon (nose high).
- Apply right rudder for P-factor and torque effect (keep the ball centered).
- Maintain pitch-high attitude and bank angle until a full stall.
- When stalled, release backpressure, roll wings level & ensure full power.
- Initiate a climb as soon as you have minimum flying speed.

- Pitch for Best glide of 80 MPH and trim.
- Locate acceptable landing area considering winds and turn towards it.
- Perform engine failure checklist items from memory.
- Reference checklist time permitting.
- Simulate Mayday call on 121.5 time permitting
- Circle over field using shallow bank angles until approaching 1000'-1500'AGL.
- Exit the circle to about a mid-field downwind.
- Attempt to make it look like a normal pattern at this point.
- Simulate securing the fuel, electrics, door opening and tighten seatbelts.
- Flaps down when field can be easily made.
- Slow to 70 MPH on final with flaps full down.
- **DISCONTINUE SIMULATION ABOVE 500' AGL! Add full power, carb heat off, start climbing and retracting flaps in increments (go around procedures)**

Ground Reference Maneuvers

- Perform in accordance with the FAA Airplane Flying Handbook.
- Maintain 1000' AGL & 115 MPH for all ground reference maneuvers.
- Before starting the maneuver select a suitable emergency landing area.

Returning to the Airport

- Cruise at 115 MPH.
- Perform Descent checklist and obtain AWOS & set altimeter.
- Tune KAWO CTAF to 122.7 and start listening for other aircraft in pattern.
- Make initial arrival call on the CTAF within 5-10 miles of the airport.
- Descend at 115 MPH to pattern altitude within 3 miles of the airport.
- Enter the mid field 45 degree leg at 1200 MSL and 115 MPH then reduce power slightly to start slowing to the top of the white arc.
- Complete the Before Landing checklist prior to entering downwind but delay carb heat until on downwind. Verbalize the before landing checklist and execute from memory.
- Be on the alert for aircraft turning from X-wind to downwind. Make sure you know where other aircraft are in the pattern.
- Should be ½-1 mile from runway on downwind.
- A good technique for when to turn downwind from the 45-degree entry is to turn when the runway appears to be disappearing under the nose. This should put you on a downwind with proper spacing from the runway.
- Make standard radio calls while in the pattern (your instructor will demo).
- Apply corrections for any known winds.

- Abeam intended point of landing, carb heat on & throttle 1500 RPM.
- Flaps 10 degrees below 100 MPH.
- Maintain altitude with pitch until approaching 90 MPH.
- Descend when abeam approach end & maintain 90 MPH with pitch.
- When runway approach end is 45 degrees aft (behind the wing) clear final, turn to base leg & set flaps 20 degrees, & set pitch for 80 MPH.
- Throttle as required on base and final but try to keep near 1500 RPM.
- On final set Flaps full (30 degrees), slow to 70 MPH & aim at Rwy numbers.
- If there is a crosswind use a sideslip (wing low method for the approach).
- **On final control airspeed with power and glide path with pitch.**
- Land on centerline on the main wheels.
- Touchdown within 400' of desired touchdown zone at idle power.
- Brake as required and exit at nearest taxiway and announce clear on radio.
- Taxi beyond hold short line & perform the after landing checklist.

Note: Your instructor will teach you specific techniques for the landing phase.

Short Field Landing

- Same as normal landing with following exceptions:
- Full flaps on final and 65 MPH.
- Slightly steeper approach simulating flying over 50' obstacle.
- It is critical to be on airspeed, if you are fast you will float down the runway.
- Touchdown within 200' of desired touchdown zone at idle power.

Soft Field Landing

- Same as normal landing with following exceptions:
- Hold the aircraft 1-2 feet above the runway with a little power.
- Touch down smoothly at minimum speed.
- Hold nose wheel off the runway as long as possible.
- Don't use brakes if able.
- Keep control wheel full aft during taxi on a soft field.

Touch & Go

- After landing, retract flaps and turn carb heat off.
- Smoothly apply full power, maintain centerline & make normal takeoff.

Go-Around

- Smoothly apply full power, carb heat off and set climb attitude.
- Retract flaps to 10 degrees (reduces drag).
- Retract final flaps at Vy (82 MPH).
- Normal climbout.
- If avoiding a departing aircraft, offset to the pattern side to avoid gliders at AWO and keep traffic in sight. Maneuver as necessary to maintain separation.

- Conducted in accordance with the FAA Airplane Flying Handbook and flight instructor guidance.

Cross Country

- Plan in accordance with governing procedures/regulations.
- Your flight instructor will guide you on your first planning/flight.
- Plan to fly each leg at 115 MPH.
- Be familiar with mountain flying procedures (suggest taking the free AOPA On-Line Mountain Flying Course).
- Plan one dual cross-country through or near mountainous terrain.
- There are two solo cross-countries that all students must fly for the solo cross-country phase:
For the solo short X-country, students will plan and fly from Arlington (AWO) to Port Angeles (CLM) and back to Arlington (AWO).
For the solo long X-country students will plan and fly from Arlington (AWO) to Port Angeles (CLM) to Tacoma Narrows (TIW) to Arlington (AWO).

If weather or NOTAMs restrict the routes listed above, alternate routes may be planned and flown solo with the approval of the Chief Pilot. All X-country flights must depart Arlington (AWO) with full fuel tanks. See the ***Solo Cross Country Checklist*** binder located in the OOTBA office for complete details and instructions.

After Parking Aircraft

- Ensure securing aircraft checklist is complete.
- Perform a post-flight walk around to ensure no maintenance issues occurred during the flight. This is required by the FAA on the practical.
(Please note that if an aircraft needs to be placed in the hangar, you must have an OOTBA staff person assist with aircraft handling)

Emphasis Items

Collision Avoidance

You are learning to fly under Visual Flight Rules (VFR). As the pilot you are 100% responsible for ensuring that your airplane doesn't collide with anything on the ground or in the air. That means you must have your head on a "swivel" scanning **OUTSIDE** the aircraft and only occasional and quickly scanning inside the aircraft for parameters and engine/flight instrument readings. This is precisely why your instructor will ensure that you are **looking outside and using the natural horizon while flying all maneuvers.** Primary use of the artificial horizon will come later with your instrument training. As a rule of thumb for VFR flying, you should spend about 90% of your time scanning outside with only 10% scanning inside. With a high wing airplane you can raise the wing slightly before turning to check for birds or traffic. During descents it is a common practice to bank the aircraft left and right occasionally to clear directly below your flight path. Your instructor will emphasize collision avoidance throughout your training. **You will not pass your check ride if you fly perfect maneuvers but seldom look outside for traffic and attitude reference. The FAA is emphasizing collision avoidance.**

Checklist Usage

Use the checklist! Your instructor will expect you to reference the checklist for all applicable phases of flight. If you try any other techniques you will likely forget a required item. We recommend that you memorize the Before Landing checklist items and engine failure in flight items since both required timeliness. This technique will also reduce your "heads down" time in the pattern. In all cases you **MUST** complete all required checklist items. The FAA will be expecting you to use the checklist on your practical.

Traffic Pattern

The traffic pattern is a dynamic and at times very busy with multiple aircraft, many of which will perform non-standard maneuvers. Your instructor will cover all of the issues associated with the pattern to include radio calls, proper spacing, conflict resolution, etc.

Priorities While Flying

Aviate, navigate, then communicate and do it in that order. Your first priority at all times is to fly the airplane NOT talk on the radio. Don't be intimidated by the radio but use it only after you have the aircraft under control. For example, if after turning final you decide to make the radio call before lowering the flaps to full and subsequently forget the flaps and land no flap what have you gained? Always fly the airplane first.

The Use of Trim

Trim is your friend! Use it often. Fighting heavy control inputs is fatiguing. You will find that by trimming after each major change of flight attitude, it will be easier to maintain airspeed and altitude.

Island Crossing/Twin Lakes

Many pilots will fly to either Island Crossing for Rwy 34 or Twin Lakes for Rwy 16 to enter the pattern. Neither of these references is associated with official airport entry procedures. The FAA frowns upon their use because of the non-standard entry. Additionally, you need to learn universal references for entering and flying traffic patterns in order to safely and confidently enter other airport patterns. You won't have an "Island Crossing" at an unfamiliar airport. These points do not facilitate the standard 45-degree entry at mid-field described in AIM and will not be taught by OOTBA flight instructors to student pilots. However, due to their occasional use at Arlington, you need to be aware of their locations. If desired, these points may be included in your radio call to reference your proper position on entry, for example, your radio call could be "Arlington traffic, Cessna 1151M is 1 mile south of Island Crossing on the 45 downwind entry for rwy 34 Arlington".

Emergencies

Your instructor will you give you an emergency scenario on every lesson. The scenario could be during the flight brief or in flight. For all emergencies you should prioritize as follows:

1. **Maintain aircraft control.** Fly the airplane first! For example, if your engine fails in flight immediately pitch for best glide.
2. **Analyze the situation.** Is the smoke in my cockpit from an electrical fire or engine fire? What can I look at to figure it out?
3. **Take the proper action.** Once you know exactly what the problem is execute the appropriate checklist if one applies.
4. **Land as soon as conditions permit.** Generally land at the nearest suitable airport but this decision will be situation dependent.

Cockpit Organization

It is essential that you are organized while flying. The last thing you need are unnecessary distractions. For example, during your cross country flight where will you keep your Navigation log and chart? Also, many students like to have a memory card to reference in flight for the various maneuvers. One way to keep such items organized and secure where you can easily see them is on a kneeboard. It will not only help you to be more organized but will provide a place to copy AWOS/ATIS information or other data when receiving ATC Radar Services. Though certainly not required, we recommend that you obtain a kneeboard that works well for you.

FAA Special Emphasis Areas

You need to become very familiar with the FAA emphasis items listed near the front of the Practical Test Standards booklet. You WILL be asked about them on your practical test. Your flight instructor will cover these items in great detail throughout your training.