



# NEXGEN

AVIATION, LLC



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## Overview

Welcome to NexGen! We want to thank you for the trust you have placed in us to help you achieve your dreams in aviation, whatever they may be. It is our sincere desire that your experiences with us exceed your expectations, and that your training is enjoyable as well as educational.

This guide is broken into four parts. You'll find general information about the flight training process, NexGen rules and procedures, information on certain flight maneuvers, and commonly used reference material. At NexGen we will train you to be the best, safest pilot you can be; we don't train you to pass a test, we train you to be a great pilot.

The purpose of this guide is not to replace any information found in your aircraft's operating handbook, rather provide NexGen specific procedures that we have found to be helpful in developing efficient, effective, and safe pilots.

# Section 1, Flight Training Process

## Student pilot certificate

Prior to flying solo each student must have a student pilot certificate. The process is very simple, yet takes about 3 weeks to complete. Begin by going to [iacra.faa.gov](http://iacra.faa.gov) and creating an account. Your instructor will guide you through the rest of the process. It is best to begin the application before your third flight.

## Medical

In addition to a student pilot certificate, a medical certificate is also required before flying solo. We suggest scheduling a medical exam before your third lesson. This will alert you to any condition that would prevent you from becoming a pilot before you get too far into your training.

We suggest a Third-class, although any class will suffice. Medical certificates are designated as first-class, second-class, or third-class. Generally, a third class medical is sufficient. your instructor can explain the additional privileges of the other medical certificates.

The process begins by applying online at <https://medxpress.faa.gov>. Once you have entered your information, you will be given a code, which you will give to your medical examiner.

While the FAA medical is typically a simple process, it can be challenging for those with certain medical conditions. The following conditions are listed in the regulations as disqualifying medical conditions; however, in many cases when the condition is adequately controlled, the FAA can issue medical certification contingent on periodic reports.

- Angina pectoris
- Bipolar disease
- Cardiac valve replacement
- Coronary heart disease that has been treated or, if untreated, that has been symptomatic or clinically significant
- Diabetes mellitus requiring hypoglycemic medications
- Disturbance of consciousness without satisfactory explanation of cause
- Epilepsy
- Heart replacement
- Myocardial infarction
- Permanent cardiac pacemaker
- Personality disorder that is severe enough to have repeatedly manifested itself by overt acts
- Psychosis
- Substance abuse
- Substance dependence
- Transient loss of control of nervous system function(s) without satisfactory explanation of cause.

If for some reason your application is denied for an FAA Medical, all hope is not lost. There is a formal appeal process, as well as an opportunity to complete what is called a Statement Of Demonstrated Ability (SODA) which has allowed many people originally denied a medical to earn their pilots license and continue flying.

### **Medical Examiners**

The FAA maintains a list of approved aviation medical examiners on their website. Your instructor may be able to provide recommendations of examiners they prefer.

<https://www.faa.gov/pilots/amelocator/>

### **Written Exam**

Prior to the completion of pilot training, a written exam must be passed with a score of 70% or better. We encourage all students to complete the written exam before they solo. Your instructor will help you study for this exam, and endorse you to take the exam. NexGen is able to proctor a written test for you at the Lexington office, inquire at the front desk for details.

### **Practical Test (Check ride)**

Once your training is complete, you will be evaluated by either the FAA or a Designated Pilot Examiner (DPE). Your instructor will thoroughly prepare you for this exam, and you will become familiar with the Airman certification standards, which defines the items tested and the criteria which must be met.

### **Designated Pilot Examiners**

Your instructor will assist you in choosing a designated pilot examiner (DPE) to conduct your practical test. If you would like more information on finding a DPE, the FAA maintains a list of approved examiners on their website.

<http://av-info.faa.gov/DesigneeSearch.asp>

### **Airman Certification Standards/ Practical Test Standards**

All practical tests are conducted according to either the airman certification standards or the practical test standards. Your instructor will help you find a copy of the appropriate standards and review the document with you. In the final stage of your training, the ACS or PTS will be treated as a checklist. You and your instructor will review every item listed and verify your level or proficiency with each item.

## Blue Grass Airport Badge

The WestLEX and NexGen ramp areas at Blue Grass Airport in Lexington are part of the Airport Operations Area, and are secure areas. To access these areas unaccompanied by a NexGen instructor, a badge is required.

All prospective badge holders requiring unescorted access must complete an application and be fingerprinted for a criminal history records check. Badges will be issued upon approval of results. If any disqualifying crimes are revealed, badges will not be issued.

Badging, fingerprinting and training are available through the Airport's Operations Department. Appointments must be scheduled in advance. Please call Airport Operations at 859-425-3112 to schedule an appointment.

You will find a copy of the badge application in your packet. The application **MUST** be signed by NexGen prior to your appointment with Airport Operations. NexGen requires a \$150 deposit which is fully refundable with the return of your badge.

# Section 2, Rules and Procedures

## Safety Procedures Manual

### PRIVATE PILOT STUDENT WEATHER MINIMUMS

- Dual Flights: The weather minimums for all dual flights will be at or better than “Dual Minimums” and any more restrictive minimums will be left to the discretion of the flight instructor. He/She will assure that the weather conditions do not violate any of the applicable Federal Aviation Regulations or limitations stated in the Pilot’s Operating Handbook. The flight instructor must consider the benefit to, or adverse effect upon, the student’s training and learning ability when making a go/no-go decision based on the weather conditions.

- Dual

	Ceiling	Visibility	Peak Gusts	Max crosswind
Traffic Pattern	1,000 feet	3 miles	20 knots	15 knots
Local Flight	1,500 feet	5 miles	20 knots	15 knots
Cross Country	3,000 feet	5 miles	20 knots	15 knots

Solo Flights: The weather minimums for solo flights will be as shown in the following chart.

- First Solo

	Ceiling	Visibility	Peak Gust	Max crosswind
Traffic Pattern	1,500 feet	5 miles	8 knots	5 knots

- Subsequent Solo

	Ceiling	Visibility	Peak Gust	Max crosswind
Traffic Pattern	1,500 feet	3 miles	15 knots	8 knots
Local Flight	2,500 feet	5 miles	10 knots	5 knots
Cross Country	5,000 feet	6 miles	10 knots	5 knots

## INSTRUMENT/COMMERCIAL STUDENT WEATHER MINIMUMS

- Dual Flights: The weather minimums for dual flights will at or better than those listed below for “Dual Minimums” and any more restrictive minimums will be left to the discretion of the flight instructor. He/She will assure that the weather conditions do not violate any of the applicable Federal Aviation Regulations or limitations stated in the Pilot’s Operating Handbook. The flight instructor must consider the benefit to, or adverse effect upon, the student’s training and learning ability when making a go/no-go decision based on the weather conditions.
- If IFR, an alternate shall always be filed regardless of forecasted weather at the destination.

### Dual

	Ceiling	Visibility	Peak Gust	Max Crosswind
Local Flight- VFR	1,500 feet	5 miles	25 knots	Max demonstrated
Cross Country- VFR	2,000 feet	5 miles	20 knots	15 knots
Local Flight- IFR	Approach Minimums	Approach Minimums	20 knots	15 knots
Cross Country- IFR	200' above approach Minimums	1/2 mile better than approach Minimums	20 knots	15 knots

Solo/ no CFI Flights: The weather minimums for solo flights are as shown in the following chart. All pilots are encouraged to develop their own personal minimums using the guide on page 28, however no pilot shall fly a NexGen aircraft contrary to the below minimums.

### Solo/ no CFI

	Ceiling	Visibility	Peak Gust	Max Crosswind
Traffic Pattern	1,000 feet	3 miles	25 knots	Max demonstrated
Local Flight- VFR	2,000 feet	5 miles	25 knots	Max demonstrated
Cross Country- VFR	2,500 feet	5 miles	20 knots	15 knots
Local Flight-IFR	200' above approach Minimums	1/2 mile better than approach Minimums	20 knots	15 knots
Cross Country- IFR	400' above approach Minimums	1 mile better than approach Minimums	20 knots	15 knots

Any or all flights may be grounded when, at the discretion of the Chief Instructor, or an Assistant Chief Instructor, when the weather conditions do not fall within the parameters set forth in this section, or are not conducive to safe or effective flight training.

### **STARTING AND TAXIING**

- All pilots will conduct a thorough preflight of the aircraft before each flight. This will be accomplished with the use of the POH checklist for that aircraft.
- If an aircraft is moved with a tow bar, the *tow bar must be removed when not in use*.
- Aircraft will be positioned as such to keep prop blast in a safe direction and away from other aircraft and hangars.
- Starting procedures will be as outlined in the starting engine checklist.
- Each student preparing to start an aircraft will look around carefully, turn the rotating beacon on prior to start, and shout "CLEAR" before attempting engine start.
- At no time will aircraft be started by hand propping.
- No aircraft engine will be started in the hangar or inside any structure. Aircraft being moved into and out of the hangar will be towed, by at least two persons, with an approved tow bar only.
- If the aircraft fails to start after five attempts, discontinue starting procedures and request assistance from a flight instructor or maintenance personnel.
- No aircraft will be left unattended while unsecured, or while the engine is running.
- Strobes and/or beacon lights will be illuminated prior to engine start and shall not be turned off until after engine shutdown.
- Taxi lights shall be illuminated any time the aircraft is taxiing under its own power.
- Taxi at a speed which is appropriate for the existing conditions. Low power, low speed, and constant vigilance will be maintained when taxiing in congested areas.
- Flight control deflections will be used in accordance with the proper crosswind taxiing technique.
- Pilots will make every attempt to taxi on the taxiway centerline whenever safe to do so.
- Pilots will have an appropriate and current taxi diagram available to reference prior to any taxi operations.
- Pilots will read back all taxi clearances to ground control using standard phraseology.
- Pilots will read back to air traffic control on hold short, position and hold, takeoff and landing clearances, and runway crossings using standard phraseology. Pilots will read back the entire instruction or clearance to tower including the runway designation.
- Pilots will verify the correct runway using a two step process prior to takeoff. This will typically be accomplished by verifying compass heading as well as the numbers painted on the runway surface.

### **FIRE PRECAUTIONS AND REFUELING PROCEDURES**

- All students will be instructed (before their first solo) on precautions against ground and in-flight fires, and the procedures to be taken if they should occur.
- All students will be instructed in the location and use of the fire extinguisher in the aircraft (if installed).
- Students must be familiar with the emergency procedures relating to fires in the Pilot's Operating Handbook for the particular aircraft being operated.
- Extreme care should be taken to avoid over-priming.

Also when refueling, each aircraft must be chocked and grounded, additionally the following restrictions apply:

- No refueling with persons in the aircraft.
- No refueling inside the hangar.
- No fuel samples will be taken in the hangar.
- No smoking within 50 feet of any aircraft.

### **DISPATCH PROCEDURES**

Students will be dispatched by their primary instructor. Instructors may dispatch students other than their own only if they have flown with that student within the previous 30 days.

Prior to departure a dispatch form must be completed in its entirety, based on the most current information. A sample is provided at the end of this document for reference. Blank forms are available at the office. If a landing at a non-listed airport is to be made, current weather, notams, and performance calculations shall be verified PRIOR to landing. A completed copy of the dispatch form shall be attached to the dispatch sheet containing start & end times as well as any maintenance squawks.

### **PROCEDURES AFTER UNSCHEDULED LANDINGS**

- On-airport: In the event of an unscheduled landing (a landing at any airport other than the airports indicated on the flight plan or authorized by the flight instructor in the solo cross country endorsement), At no time will the student continue the flight without the specific authorizations of either their primary flight instructor, the Chief Instructor or the Assistant Chief Instructor. If a maintenance issue caused the diversion, the director of maintenance must be notified and approve the aircraft to be released. If the aircraft must be left unattended, the student/renter will secure the airplane by installing the control lock, locking the doors and securing the aircraft with whatever means is available, and contact NexGen Aviation, LLC for instructions.
- Off-airport: The student will assess personal injury and damage to the aircraft, assure fuel is shut off and all fire potential has been eliminated. If possible, secure the aircraft and determine location. Immediately report to the NexGen Aviation, LLC flight center providing as much information as possible (injuries, damage, location, etc.)]. At no time will the student attempt to take off from an unprepared landing area.
- No student or instructor shall make or cause to be made any statements without approval from NexGen management.

### **AIRCRAFT DISCREPANCIES AND SQUAWKS**

Anytime the student/renter discovers a discrepancy (squawk) with the aircraft it will be recorded in the squawk entry window of the Paperless141 system. The following procedure will be followed:

- The student/renter will give as detailed a description as possible of the problem to both the dispatcher and the director of maintenance.
- The aircraft will not be dispatched for flight until it has been inspected by a mechanic or a flight instructor.
- If the aircraft is determined to be un-airworthy it will not be dispatched for flight until signed off by a certified mechanic.
- If the discrepancy is found to not affect the safety of flight, it will be deferred to the next inspection and returned to flight status.

### **SECURING OF AIRCRAFT**

After every flight, the aircraft will be secured with chocks on main landing gears, or tied down as recommended by the manufacturer. In addition, a gust lock shall be used whenever the aircraft is secured outside. After securing the aircraft, the student and/or instructor will assure that all seat belts are stowed and all personal items and trash are removed from the aircraft. The aircraft will be post flight inspected per the aircraft's POH post flight checklist. If a tow bar is used to move the aircraft, the tow bar must be removed when not in use.

Please double check for any personal items or trash left in aircraft.

West LEX line personnel

When at the Nexgen east ramp hangar, please return the aircraft to the hangar when possible. If not possible, secure the aircraft outside. Do not leave the aircraft in the middle of the ramp area. Students/renters that leave an aircraft unattended and blocking ramp access will be charged for an instructors time to move such aircraft.

### **FUEL RESERVES**

Pilots shall not begin a flight unless there is sufficient fuel to complete the flight to the intended landing destination, fly from that airport to an alternate (if an alternate is required), and then fly after that for at least one hour at normal cruise power settings. All cross-country flights must begin with full tanks unless the aircraft and crew combination would exceed the max gross weight of the aircraft or be such that the performance limitation caused by the combined weight of aircraft and crew would prevent safe flight.

### **COLLISION AVOIDANCE AND WAKE TURBULENCE**

- Pilots should be alert for other aircraft at all times—in the air and on the ground.

- All pilots will adhere to the “see and avoid” concept and be particularly vigilant when in radar contact and under ideal weather conditions.
- Pilots will clear the area, both left and right, prior to making any turns or performing any maneuvers.
- Pilots will contact Air Traffic Control when available for traffic advisories while maneuvering in the practice area.
- Pilots will always scan the approach area prior to taking the runway and when turning from base to final.
- When taxiing in a congested area and in doubt about wing tip clearance, the pilot will shut down the engine and maneuver the aircraft by hand until sufficient clearance of the obstacle is assured.
- All school members should read Appendix D FAA advisory circular 90-48C, “Pilots Role in Collision Avoidance,” also available in the flight planning room.
- Pilots are required to be aware of the perils associated with wake turbulence and low-level wind shear. All training pilots should read Appendix E FAA advisory circular 90-23E, “Aircraft Wake Turbulence,” also available in the flight planning room.

#### **ALCOHOL AND DRUGS**

No pilot may operate a Nexgen aircraft contrary to 91.17.

#### **MINIMUM ALTITUDES**

Cruise flight must be conducted at an altitude no less than that allowed by 91.119. Whenever practical flights should be planned well above the maximum elevation figures for their current and adjacent quadrants found on a sectional chart. For IFR flights, MEA, MOCA, or MVA will be the minimum altitudes used.

All maneuvering flight will take place at a minimum 1,500’ above ground level. This includes any recoveries or inadvertent losses of altitude.

#### **PRACTICE AREAS**

Current practice areas can be found on a sectional chart in the small training room in the Nexgen office. Whenever possible, intentions should be coordinated with ATC prior to any maneuvering. If maneuvers are to be practiced away from Lexington, maneuvers should be conducted in an area as outlined in 91.303.

### **NexGen Aircraft Procedures**

#### **Aircraft dispatch and checkout**

Prior to any training flight your instructor must dispatch the aircraft after reviewing the lesson to be completed. The pilot must then checkout the aircraft through the paperless141 system. Your instructor will show you how to do this. The checkout process requires you to verify several things including:

- Aircraft maintenance status
- Weight and balance

- Weather and NOTAMs
- Complete the Nexgen Aircraft Performance Data Worksheet (found at the back of this document)

You will not be able to complete the checkout process if you have a negative balance unless prior arrangements have been made with NexGen management.

Your instructor will be able to answer any questions you have about this process.

## Renters

Prior to dispatch, renters must:

- Follow all applicable parts of FAR part 61 and 91
- Provide a copy of their valid pilots certificate and medical, and shall inform Nexgen of any changes to the status of their certificate or medical.
- Sign a rental agreement
- Maintain a current flight review and inform NexGen of any flight reviews.
- Successfully Complete an aircraft checkout with a Nexgen instructor for each make and model they wish to rent. This will include a written checkout form.
- Fly with a NexGen instructor within the preceding 12 calendar months.
- Fly a NexGen aircraft of the same make and model within the preceding 90 days.
  - If more than 90 days pass since last flight in a make and model, a flight with an instructor will be required.
- If flying IFR, conduct an IPC within the previous 12 calendar months.

## Engine starting

Always follow the starting procedure in the aircrafts flight manual or operating handbook. Starting an aircraft engine can be difficult at times, here are a few procedures that will make it easier and safer.

- Position the aircraft so it's prop blast is pointed to a clear area. Never towards other aircraft or an open hangar. You are responsible for your prop blast.
- Avoid over-priming. It is easy to prime the engine more than required. Less is more.
- Be ready to start immediately after the priming process. Any delay allows the fuel to pool at the bottom of the cylinder, making starting more difficult.
- As soon as the engine tries to fire (listen for it) let go of the key. Most aircraft start on one magneto, releasing the key allows both magnetos to fire, which helps the engine start.
- Allow the starter to cool for 10-30 seconds between starting attempts and never engage the starter if the propeller is moving.
- Immediately after starting set RPM to 800-1000. This reduces engine wear as the oil takes time to flow through the engine.
  - Note the throttle position at 800-1000 RPM. Next time, set the throttle to this position before start. You'll look like a pro.

- Slowly reduce the mixture, looking for an increase in RPM. Leave the mixture at that position until the run-up or takeoff.

### Taxiing

NexGen follows a sterile cockpit philosophy when taxiing. This means no tasks or unnecessary conversation should occur while taxiing or any other critical phase of flight. Pilots are expected to have a taxi diagram available and in view when taxiing. All radio tuning and navigation programming should be done prior to taxiing or while stopped. Pilots should taxi on taxiway centerlines whenever possible to the best of their abilities. Conversation should be limited to what is required at that moment. We want you to ask questions, please don't hold back on asking your instructor anything relevant, but be aware that your instructor may want to talk about your question later.

We realize people may want to take photos or use their phones. This is at the discretion of your instructor, and they will take control of the aircraft during those times. No personal electronics are to be used during any critical phase during solo flight except for the use of Electronic Flight Bags if trained in their use and approved by the instructor.

***Do not allow yourself to become distracted.***

### Engine leaning

After engine start, lean the mixture for an increase in RPM. Be aware that not all aircraft will show much or any increase before the engine dies.

Takeoffs and climb should be made according to the manufacturer's procedures. Generally that will be a full rich mixture for takeoff and climb.

Cruise leaning should be accomplished by the use of the EGT gauge if installed. Your instructor will demonstrate correct operation of this system. Unless the manufacturer states otherwise, plan to operate aircraft:

- Single EGT probe
  - 125 rich of peak
- Per-Cylinder EGT probes
  - 100 rich of peak

Descent should be made according to the manufacturer or by richening during the descent to maintain a constant EGT.

Approaches and landings should be made full rich unless conditions require less fuel.

## Cold Weather procedures

The NexGen and West LEX hangars are heated. Please keep the hangar door closed any time the temperature is below 50 degrees.

The majority of engine wear occurs at start-up before oil has a chance to flow through the engine. This becomes more of an issue at low temperatures when the oil is thick. To combat this problem we avoid starting the engine when it is excessively cold. As a rule of thumb, the oil temperature should be above freezing prior to attempting to start the engine. This can be done several ways:

- Leaving the aircraft in a heated hangar during cold weather.
- Plugging in electric engine heaters for aircraft equipped with that equipment.
- Using hot air preheaters.

While not specific to cold weather operations, run-ups should be avoided until oil temperature reaches 75 degrees. 100 degrees is even better. On cold days this can take extra time, consider delaying the run-up until just prior to departure. Taxi with minimum rpm required while oil is cold.

If an aircraft must be left outside overnight and the next flight will begin during cold weather, please plug in the electric engine heater if equipped. If the aircraft is away from base and plugins aren't available ask for hangar space or preheat.

Some aircraft are equipped with cold weather airflow restricting plates. Some plates cover cabin air vents, feel free to use these any time. Some partially cover engine cooling inlets. These plates should only be used when a condition of low oil or cylinder head temperatures are observed and believed to be related to cold air temperatures. Special attention must be given to engine temperatures when using a cold weather inlet plate as the engine is more susceptible to overheating. We don't advise using any engine inlet plate above 32°F. Even below those temperatures, plates may not be necessary.

Never attempt to fly with frost on the aircraft. Even small amounts of frost can decrease lift by 30% and increase drag by 40%. Frost can be removed several ways:

- Using a heated hangar.
  - Usually only a few minutes are necessary to loosen frost enough to wipe it off with a clean rag or towel. Be sure to completely dry any water on the wing so it does not freeze when the aircraft goes outside
- Positioning the aircraft into the sun.
  - This works well even on cold days. A black trash bag can be placed over the surfaces to make this a quick process. Promptly dry any water with a towel.
- Deice fluid.

- This is generally not advisable due to the high cost but is quick and effective. If you choose to be deiced please let NexGen know so we can wash the glycol fluid off the plane.

Do not attempt to scrape ice or frost off a wing using any type of tool, ice scraper, credit card, etc. This is ineffective and damages the paint.

Landing on snow or ice covered runways dramatically reduces the traction of the tires, which creates an unsafe situation and is not allowed in NexGen aircraft.

## Billing

Below are details as to how billing will be conducted. Any questions should be brought to the school administration, chief or assistant chief instructor prior to any billing activity or as soon as possible. Any billing errors should be immediately be brought to the attention of school administration or the chief or assistant chief flight instructor.

## Aircraft

Aircraft rates are wet (fuel included) unless noted otherwise and will be billed based on “Hobbs” time. That is a measure of the time the engine is running, broken into 1/10th of an hour measured by a Hobbs meter. It is the students/renters responsibility to verify starting and ending times shown on the hobbs meter.

Fuel is the single largest cost in operating our aircraft and fuel prices are constantly fluctuating. We reserve the right to implement a fuel surcharge in addition to the regular wet rate with any significant changes in fuel price. Students and renters will be made aware of any fuel surcharges.

Students and renters will be responsible for all hours logged by the hobbs meter while the aircraft is in their possession. Unforeseen maintenance issues do occasionally arise that prevent a flight from being completed. These will be handled on a case-by-case basis and a refund or discount may be applied.

Aircraft taken over night are subject to a 2 hour daily minimum and must be approved by school administration, chief, or assistant chief instructor in advance. An example of a daily minimum would be a 3 day reservation which would require a minimum of 6 flight hours. If a renter returns with 5.0 hours, they may be charged an additional hour to reach the daily minimum.

## Instructor

Instructor billing rates are broken into three categories; full day, half day, and hourly.

- Full day offers the best value and allows the student to schedule an instructor for up to 8 hours at a time. A full day can begin or end at any time, giving complete control over the schedule. Additional hours will be billed at the hourly rate at the instructors discretion.

- Half day blocks consist of morning (8am-noon), afternoon (1pm-5pm) and evening (6-10) blocks. These times allow our instructors to have breaks in their day to eat. We ask for your understanding in this
- Hourly rates offer great flexibility and can be scheduled any time and offers great flexibility. The one limitation to hourly scheduling is it can only be scheduled within 7 days.

We encourage half day scheduling for most training. This gives you and your instructor adequate time to cover a ground lesson and two flight lessons in one day, while having enough time to adequately brief and debrief each topic. This leads to efficient learning.

### Cancelation

NexGen has a 24 hour cancelation policy. If, for any reason, a student cancels a flight within 24 hours NexGen reserves the right to charge a cancelation fee equal to the total scheduled instructor fees.

A renter may receive a fine of 1/4 of the scheduled hours at the aircrafts rental rate, or 1 hour for each day of a multi-day reservation for any cancelations made within 24 hours.

A schedule will be considered “canceled” if the student or renter does not show up within 30 minutes of the time they are scheduled to begin. The aircraft and instructor schedule may be canceled and made available at that time. Coordinated delays are not subject to this restriction- if you’ll be late, just call us.

Any weather or maintenance cancelations done in coordination with school administration, a flight instructor, chief, or assistant flight instructors, and will not be subject to any fees.

### Payment

Payment is due at the completion of each lesson. Payments can be made by cash, check, or card (subject to a processing fee). Alternatively, many students choose to create an account in which they deposit money and deduct from that account as they complete lessons. Additional information may be found in the Rental Agreement below.

## Rental Agreement

This is a copy of the rental agreement for your records. There is a loose copy in this package that you signed and returned to NexGen.

### NexGen Aviation, LLC Rental Agreement

This Agreement is entered into this \_\_\_\_\_ day of \_\_\_\_\_ 20\_\_\_\_, between \_\_\_\_\_, residing at address \_\_\_\_\_, City \_\_\_\_\_, County of \_\_\_\_\_, State \_\_\_\_\_, hereinafter called “Renter”, and NexGen Aviation, LLC, “Dispatcher”, a Corporation chartered under the Laws of the State of Kentucky, located at 841 White Wood Flat, Lexington, KY 40511.

In consideration of the mutual covenants contained herein, and for other good and valuable consideration, the parties hereby agree as follows:

RECITAL: I state that I am \_\_\_\_\_ years of age and competent to sign this Agreement.

GENERAL: This rental agreement constitutes a continuing agreement between Dispatcher and Renter for all subsequent rentals of airplanes from Dispatcher by Renter, unless superseded or canceled by a written agreement. Renter agrees that the privilege of renting Dispatcher’s aircraft is solely at the discretion of Dispatcher and is revocable at any time.

FLYING CAN BE DANGEROUS. Renter’s signature below acknowledges Renter’s knowledge and understanding that flying aircraft is always subject to risk of harm and peril to persons and property. Despite mandatory pilot training, pilot error is the most frequent cause of aircraft accidents. Despite FAA Regulations requiring that aircraft used for instruction be inspected every 100 hours of operation and annually, mechanical failures in aircraft can and do occur. It is incumbent upon Renter to fly safely, and to take precautions against and to know how to diagnose emergencies and unsafe conditions while in flight, and to take the proper remedial actions when emergencies and unsafe conditions occur. Renter assumes all risk arising out of Renter’s use of the airplane.

SOLE PILOT: Renter shall be the sole pilot of the Aircraft during the rental period for all solo flights, except for certificated Instructors approved by Dispatcher.

CERTIFICATES: Renter must have and maintain a valid Pilot Certificate or Student Pilot Certificate, current and valid Medical Certificate, BFR (Biennial Flight Review) as required by Federal Aviation Regulations (“FAR”), and meet all other FAR rating and currency requirements

for the flight and aircraft flown. The validity and currency of such certificates and currency shall be determined by Dispatcher in its sole discretion. Renter represents and warrants that the information provided by Renter on the PILOT INFORMATION SHEET is true and correct.

**RENTAL POLICIES:** Renter agrees to comply with, and that all rentals shall be governed by, the Dispatcher's Rental Policies in effect at the time of rental. In the event of conflict between the Rental Policies and this agreement, this agreement shall govern.

**CHECK OUT:** A checkout and logbook endorsement from an Instructor approved by Dispatcher is required for each make and model flown by Renter.

**RENTAL PERIOD, SCHEDULING:** Renter agrees to schedule Aircraft only for the hours during which he/she intends to use said Aircraft. Dispatcher may rent a scheduled aircraft to other customers if Renter does not present him/herself to Dispatcher's dispatch desk within one half hour of the reserved time. Renter agrees to return Aircraft to Dispatcher at the appointed date and time. If Aircraft is to be kept longer than reserved for, Renter shall notify Dispatcher as soon as practicable and a fee may apply.

**CANCELLATION POLICY WITH INSTRUCTORS:** Every student will be allowed one "freebie" in a less than 24 hour time period cancellation. Excluding a medical or family emergency. After that the renter will be charged for two hours of ground instruction at the instructor's discretion.

**PRE-FLIGHT:** Renter shall personally conduct a pre-flight inspection of the Aircraft as prescribed by the manufacturer of the Aircraft, including checking the fuel from all sumps and determining that the fuel and oil on board the Aircraft is sufficient.

**RENTER SHALL NOT ACCEPT THE AIRCRAFT UNTIL THE AIRCRAFT SATISFIES THE MANUFACTURER'S REQUIREMENTS FOR AIRWORTHINESS AND UNTIL THE RENTER IS SATISFIED AS TO ITS AIRWORTHINESS, ITS CONDITION FOR SAFE FLIGHT, AND THE PROPER FUNCTIONING OF EQUIPMENT AND ACCESSORIES.**

**CARE OF AIRCRAFT:** Renter assumes responsibility for the Aircraft to be properly fueled and secured at destination. Renter is responsible for paying all tie down, landing or departure fees and /or taxes at any airport used by Renter. Renter must secure the Aircraft upon return to Dispatcher, including tie down, removal of refuse, and locking.

**ACCIDENTS:** Renter agrees to report to Dispatcher any accident, mishap, incident, or physical damage to the Aircraft as soon as practicable, but in no case later than twenty four (24) hours after its occurrence, and to provide any related documentation requested by Dispatcher or its insurance carrier.

**COMPLIANCE WITH LAWS:** The Aircraft shall be operated only in accordance with all federal, state and local regulations and laws.

**PHYSICAL CONDITION:** The Aircraft shall not be operated if Renter has used intoxicating liquor, tranquilizers or sleep-inducing drugs within twelve (12) hours prior to the commencement of a flight, or is otherwise physically or legally unfit to act as pilot in command.

**PROHIBITED ACTIVITIES:** The Aircraft shall not be used (a) to carry persons or property for hire; or (b) in any race, contest; or (c) in any aerobatics except for dual instruction by an approved Instructor. Renter agrees to comply with any operational limitations or policies established by Dispatcher, and not to fly Aircraft outside the continental U.S. without Dispatcher's written permission.

**SUBLEASE/ASSIGNMENT:** Renter agrees not to sublease the Aircraft or assign this Agreement without the prior written approval of Dispatcher.

**ALTERATIONS:** Renter agrees not to make any addition, alteration or improvement to the Aircraft without the prior written approval of Dispatcher.

**DAMAGE TO AIRCRAFT:** At the termination of the rental period, Renter shall return the Aircraft with all accessories to Dispatcher in the same condition as when received, excepting reasonable wear and tear and fuel consumed. Renter shall be liable to Dispatcher for loss or damage sustained by the Aircraft or accessories during the rental period.

**INSURANCE:** Renter shall be liable for the insurance deductible for damages to aircraft or any other property damage. Excluding forfeiture of Dispatcher's aircraft, or bodily injury resulting from Renter's willful negligence, violation of FAA regulations or any other federal, state or local law, statute, regulation or ordinance.

**EMERGENCY REPAIRS:** Emergency repairs shall be defined as repairs to the Aircraft, which, due to statute, regulations, mechanical failure, or damage, should be made to the Aircraft before further flight. Should the aircraft require emergency repairs, Renter shall comply with the following procedures: (a) Contact Dispatcher for instructions; (b) If no contact can be made and repair can be affected for One Hundred Dollars (\$100.00) or less, Renter may authorize and make payment for the repairs for which Renter shall be reimbursed by the Dispatcher. Under no circumstances shall Renter authorize repairs to the Aircraft unless no contact with the Dispatcher can be effected and the repairs can be made for One Hundred (\$100.00) dollars or less, and UNDER NO CIRCUMSTANCES SHALL THE AIRCRAFT BE FLOWN BY RENTER IF TO DO SO WOULD VIOLATE ANY GOVERNMENTAL STATUTE OR REGULATION, OR COMPROMISE THE SAFETY OF THE RENTER, HIS/HER PASSENGERS, OR THE AIRCRAFT.

**PAYMENTS:** Renter agrees to pay all charges, including but not limited to rental fees and sales taxes, due Dispatcher upon Aircraft's return to Dispatcher, whether or not charged to Renter thereupon. Renter authorizes Dispatcher to charge any unpaid amounts to the credit card account

on file without additional notice, and that renter's signature below shall be considered to have been made on the applicable card voucher. The payments can be in the form of cash, check or credit card. All credit card charges will incur a 3% surcharge. There is a \$25 fee on any returned checks.

PAST DUE ACCOUNTS: ALL UNPAID BALANCES ARE SUBJECT TO A 10% FINANCE CHARGE FOR THE ENTIRE AMOUNT ON THE ACCOUNT UNTIL THE ACCOUNT IS PAID IN FULL. THE FINANCE CHARGE WILL NOT BE CHARGED IF PRIOR ARRANGEMENTS HAVE BEEN MADE AND AGREED UPON BY NEXGEN AVIATION, LLC.

LATE RETURN: In the event that Aircraft is not returned to Dispatcher at the scheduled time, Renter is responsible for all expenses and rental charges incurred in returning Aircraft to Dispatcher. Dispatcher will not be responsible for incidental costs incurred by Renter or Renter's passengers as the result of mechanical failure of its aircraft, including but not limited to telephone, rental cars, accommodations, etc.

DEFAULT: If Renter defaults in the performance of any of his/her obligations under this Agreement, Dispatcher shall, at its option, and without further notice, have the right to terminate the Agreement and to repossess the Aircraft using such force as may be reasonably necessary without being deemed guilty of trespass, breach of peace or forcible entry and detainer, and Renter expressly waives the service of any notice. Exercise by Dispatcher of either or both of the rights specified above shall not prejudice Dispatcher's right to pursue any other remedy in law or equity. In any action for breach of contract or to enforce any of the provisions contained herein, Dispatcher shall be entitled to recover its reasonable attorney's fees and costs incurred in pursuing or defending against such action.

REMEDIES EXCLUSIVE: The rights and remedies with respect to any of the items and conditions of this Agreement shall exclusively as stated herein.

INTEGRATION: This Agreement constitutes the entire agreement between the parties, and as of its effective date supersedes all prior independent agreements between the parties related to the rental of the aircraft. Any change or modification hereof must be in writing signed by both parties. However, this provision shall not be interpreted to prevent Dispatcher from modifying the RENTAL POLICY without Renter's subsequent approval while this Agreement is in effect, including increasing or decreasing hull and liability insurance coverage required to be carried by Renter.

FORCE MAJEUR: Dispatcher shall not be liable for its failure to perform under this Agreement or for any loss, injury, damage or delay of any nature whatsoever resulting therefrom caused by any act of God, fire, flood, accident, strike, labor dispute, riot, insurrection, war or any other cause beyond Dispatcher's control.

INDEMNITY AND RELEASE: RENTER agrees to RELEASE, discharge, relinquish, INDEMNIFY, save, protect and hold harmless, Dispatcher, its directors, officers, shareholders, and employees, and any owners of aircraft leased to Dispatcher, from and against and all liabilities, damages, business interruptions, delays, losses, claims, judgments of any kind whatsoever, including all costs, attorneys fees, and expenses incidental thereto, which may be suffered by, or charged to, Dispatcher by reason of a loss of or damage to any property including that of a third party or Dispatcher's owned or leased aircraft, or injury to or death of any person, in any way arising out of renter's use of the aircraft, OR OUT OF DISPATCHER'S NEGLIGENCE, STRICT LIABILITY, OR INDEMNITY, or by reason of any breach, violation or non-performance by Renter of any covenant or condition of the agreement, or by Renter's act or failure to act or arising out of Dispatcher's failure to check the existence or validity of Renter's certificates.

RELATIONSHIP OF PARTIES: Renter shall never at any time during the term of this Agreement become the agent of Dispatcher and Dispatcher shall not be responsible for the acts or omissions of Renter.

WAIVER: The waiver by either party of any covenant or condition of the Agreement shall not thereafter preclude such party from demanding performance in accordance with the terms thereof.

WARRANTY DISCLAIMER: Renter hereby acknowledges that Dispatcher is not the manufacturer of the aircraft or the manufacturer's agent. DISPATCHER DISCLAIMS ALL REPRESENTATIONS AND WARRANTIES, EITHER EXPRESS OR IMPLIED, AS TO THE FITNESS FOR A PARTICULAR PURPOSE, WORKMANSHIP, DESIGN, CONDITION, OR MERCHANTABILITY, OF THE AIRCRAFT OR OF ANTHING CONTAINED THEREIN, INCLUDING FUEL AND EQUIPMENT, OR THE QUALITY OR CAPACITY OF THE MATERIALS IN THE AIRCRAFT.

GOVERNING LAW: This Agreement shall be construed in accordance with the laws of the State of Kentucky.

SUCCESSOR BOUND: The Agreement shall be binding on and shall inure to the benefit of the heirs, legal representatives, successors, assignees, next of kin and any other family members, and creditors, of the parties hereto.

SEVERABILITY: If a provision hereof shall be finally declared void or illegal by any court or administrative agency having jurisdiction over the parties to this Agreement, the entire agreement shall not be void, but the remaining provisions shall continue in effect as nearly as possible in accordance with the original intent of the parties.

IN WITNESS WHEREOF, the parties have executed this Agreement as of the day and year first above written.

DISPATCHER: NexGen Aviation, LLC

By: \_\_\_\_\_ (Print)

By: \_\_\_\_\_ (Sign)

Date: \_\_\_\_\_

RENTER:

By: \_\_\_\_\_ (Print)

By: \_\_\_\_\_ (Sign)

Date: \_\_\_\_\_

## GUARDIAN ADDENDUM

NOTE: THE FOLLOWING ADDENDUM SHALL BE USED WHEN THE RENTER IS UNDER THE AGE OF EIGHTEEN (18) YEARS OF AGE AND SHALL BE SIGNED BY RENTER'S PARENT OR GUARDIAN BEFORE RENTER'S FIRST SOLO.

This Addendum is entered into this \_\_\_\_\_ day of \_\_\_\_\_ 20\_\_\_\_, between \_\_\_\_\_, residing at address \_\_\_\_\_, City \_\_\_\_\_, County of \_\_\_\_\_, State \_\_\_\_\_, Kentucky Driver's License # \_\_\_\_\_ hereinafter called "Guardian", and \_\_\_\_\_, NexGen Aviation, LLC. (Dispatcher"), a Corporation chartered under the Laws of the State of Kentucky, located at 841 White Wood Flat, Lexington, KY 40511.

In consideration for permitting Renter to rent Dispatcher's airplanes and of the mutual covenants contained herein, and for other good and valuable consideration, the parties hereby agree as follows:

GUARDIAN. Guardian hereby represents that he/she is the parent or legal guardian for \_\_\_\_\_, born \_\_\_\_\_, \_\_\_\_\_, "Renter," in the attached Aircraft Rental Agreement (the "Rental Agreement") and a minor. Guardian hereby represents that he/she has read the attached Aircraft Rental Agreement and that he/she desires that Renter be permitted to rent airplanes to Renter.

GUARANTY. Guardian agrees to be bound by all of the terms in the attached Aircraft Rental Agreement as if Guardian had personally affixed his/her signature thereto, and guarantees Renter's performance therewith. This Guardian Addendum Agreement ("Addendum Agreement") is an absolute and unconditional guaranty, which cannot be revoked and will remain in effect until the Rental Agreement is ratified and adopted by Renter in writing and submitted to Dispatcher after Renter turns eighteen years of age or the age of majority in the State of Kentucky, as it may from time to time change.

INDEMNITY AND RELEASE: GUARDIAN agrees to RELEASE, discharge, relinquish, INDEMNIFY, save, protect, and hold harmless, Dispatcher, its directors, officers, shareholders, and employees, and any owners of aircraft leased to Dispatcher, from and against any and all liabilities, damages, business interruptions, delays, losses, claims, judgments of any kind whatsoever, including all costs, attorneys fees, and expenses incidental thereto, which may be suffered by, or charged to, Dispatcher by reason of a loss of or damage to any property including that of a third party or Dispatcher's owned or leased aircraft, or injury to or death of any person, in any way arising out of renter's use of the aircraft, OR OUT OF DISPATCHER'S NEGLIGENCE, STRICT LIABILITY, OR INDEMNITY, or by reason of any breach, violation non-performance by Renter of any covenant or condition of the agreement, or by Renter's act or failure to act or arising out of Dispatcher's failure to check the existence or validity of Renter's certificates.

IN WITNESS WHEREOF, the parties have executed this Agreement as of the day and year first above written.

DISPATCHER: NexGen Aviation, LLC

By: \_\_\_\_\_

Date: \_\_\_\_\_

Guardian:

By: \_\_\_\_\_

Date: \_\_\_\_\_

## Personal Minimums

NexGen encourages pilots to regularly assess their recent flight experience, training, and pilot certification to develop personal minimums for wind, ceiling and visibility, and instrument approach minimums. The following figures should be used as a starting point for determining your own personal minimums, and should be reviewed periodically. Reducing your own personal minimums should be done strategically and with the guidance of a flight instructor.

## Guidance for Establishing Personal Weather Minimums

### General Flight Guidelines

	1	2	3	4	5	Your Rating
Years Actively Flying (Maintained FAA req. currency)	>10	6-10	2-5		<2	
Last Recurrent Training Event	<6 months		6mo-12mo		12mo-24mo	
Certificate Held	ATP or CFI	Commercial w/instrument	Private w/instrument	Private Pilot	Solo Student Pilot	
Total Time	2000	1000-2000	750-1000	500-750	<500	
Hours logged last 12 months	>200	150-200	100-150	50-150	<50	
Hours in last 90 days	>50	35-50	25-35	10-25	<10	
Pilot Mishap Last 24 months				Incident	Accident	
Landings last 30 days	>10	6-9	3-5	1-2	0	

Age: Add 2 pts for 65 years or older

Time to Achieve Private Pilot: Add 2 pts for 100+ hours

Time to Complete Transition Training: Add 2 pts for 30+ hours

Crew: Subtract 1 pt for flying with licensed pilot

Pilot Category	Total
	≥ 23
	14-22
	≤ 13

Category  Not Applicable for pilots in first 100 hours of aircraft operation.

### GENERAL FLIGHT MINIMUMS

Current Pilot Capability Category	Wind Limit	VFR Minimums	
	Wind: 15 kts X-wind: 5 kts Max Gust: 5 kts	Day 5000' CEILINGS 10 SM VISIBILITY	Night 5000' CEILINGS 10 SM VISIBILITY
	Wind: 20 kts X-wind: 10 kts Max Gust: 10 kts	Day 3000' CEILINGS 10 SM VISIBILITY	Night 5000' CEILINGS 10 SM VISIBILITY
	Wind: 35 kts X-wind: 20 kts Max Gust: 15 kts	Day 3000' CEILINGS 5 SM VISIBILITY	Night 5000' CEILINGS 10 SM VISIBILITY

### INSTRUMENT FLIGHT MINIMUMS

Current Pilot Capability Category	IFR Minimums
	1500' / 3 SM Current Reported Weather
	+500' / +1 SM Above Published Approach Minimums
	Published Approach Minimums

**Infrequent Flyer**

**General**  
 •12-24 mo. since last training  
 •<50 hrs last 12 mo  
 •10 hrs last 90 days

**Instrument**  
 •<5 IFR hrs last 90 days  
 •<1 hr IMC/ last 90 days  
 •No approaches last 90 days

**Average Pilot**

**General**  
 •6-12 mo. since last training  
 •100-150 hrs last 12 mo  
 •25-35 hrs last 90 days

**Instrument**  
 •10-25 IFR hrs last 90 days  
 •1-3 hrs IMC/ last 90 days  
 •1-4 AP approaches last 90 days  
 •1 Non-AP approach last 90 days

**Elite Aviator**

**General**  
 •<6 mo. since last training  
 •>200 hrs last 12 mo  
 •>50 hrs last 90 days

**Instrument**  
 •>35 IFR hrs last 90 days  
 •>3 hrs IMC/ last 90 days  
 •>4 AP approaches last 90 days  
 •>2 Non-AP approach last 90 days

**Current & Proficient**

#### NIGHT OPERATIONS

Decrease wind limits by 5 kts  
 Increase vigilance when conducting Instrument Approach Procedures

#### ICING CONDITIONS

Fight Into Icing Conditions Is Hazardous  
 Refer to Airplane Flight Manual Limitations

Flying within the Envelope of Safety will not guarantee a safe flight. Pilots must comply with FARs, exercise sound judgement, and maintain a high level of flying proficiency in order to minimize the risks associated with flight.

Press "ENT" or rightmost softkey to acknowledge

## Checklist Philosophy

Your pilot package includes checklists for the aircraft you intend to fly. When used properly, checklists enhance the safety of flight by confirming the aircraft is appropriately configured for the flight condition.

Checklists can be assigned one of three classifications:

### Normal

Procedures used during normal flight operations. Normal checklists can be found in the Normal Procedures section of the POH. *Normal checklists should be completed by use of a flow pattern, then each item verified with a checklist.* It may take several hours of training to develop these flow patterns.

### Abnormal

Procedures used in response to system failures and malfunctions that, while not immediately threatening, may affect safety of flight if not addressed. These are often indicated by yellow or orange annunciations. Abnormal checklists can be found in the Abnormal Procedures section in the POH if such section exists for your aircraft. Abnormal checklists should be completed by reference to a checklist in the specific order written. In other words, read then do. Flows or "going by memory" should never be used for abnormal procedures.

### Emergency

Procedures used in response to system failures and malfunctions that are an *immediate* threat to the safety of flight. Emergencies require immediate action by the flight crew to ensure a safe outcome. Emergency checklists can be found in the Emergency Procedures section of the POH. All emergency checklists are made up of bold **Memory Items** that should be completed by memory or flow pattern. If time allows, checklists should be used to verify all necessary steps have been taken.

## Section 3, Maneuvers and Flight Procedures

### Maneuvers

The descriptions listed below supplement the Jeppessen Maneuvers Manual that comes with the Private Pilot Kit to standardize the training at NexGen, as well as give some helpful hints. This is not a complete list of all maneuvers you will learn, and it does not replace any procedures found in the Pilots Operating Handbook or Aircraft Flight Manual.

### Normal and Crosswind Takeoff and Climb

Prior to each takeoff (excluding multiple touch & go's) a takeoff briefing must be completed. While the exact wording is up to the pilot giving the briefing, it should sound something like this:

This will be a \_\_\_\_\_ (normal, short, soft) takeoff from runway \_\_\_\_\_ 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 \_\_\_\_\_. At \_\_\_\_\_ feet MSL a turn to return to the airport on runway \_\_\_\_\_ becomes an option.

Perform the takeoff or crossing takeoff procedures listed in your aircraft's Operating Handbook.

### **CROSSWIND TAKEOFF**

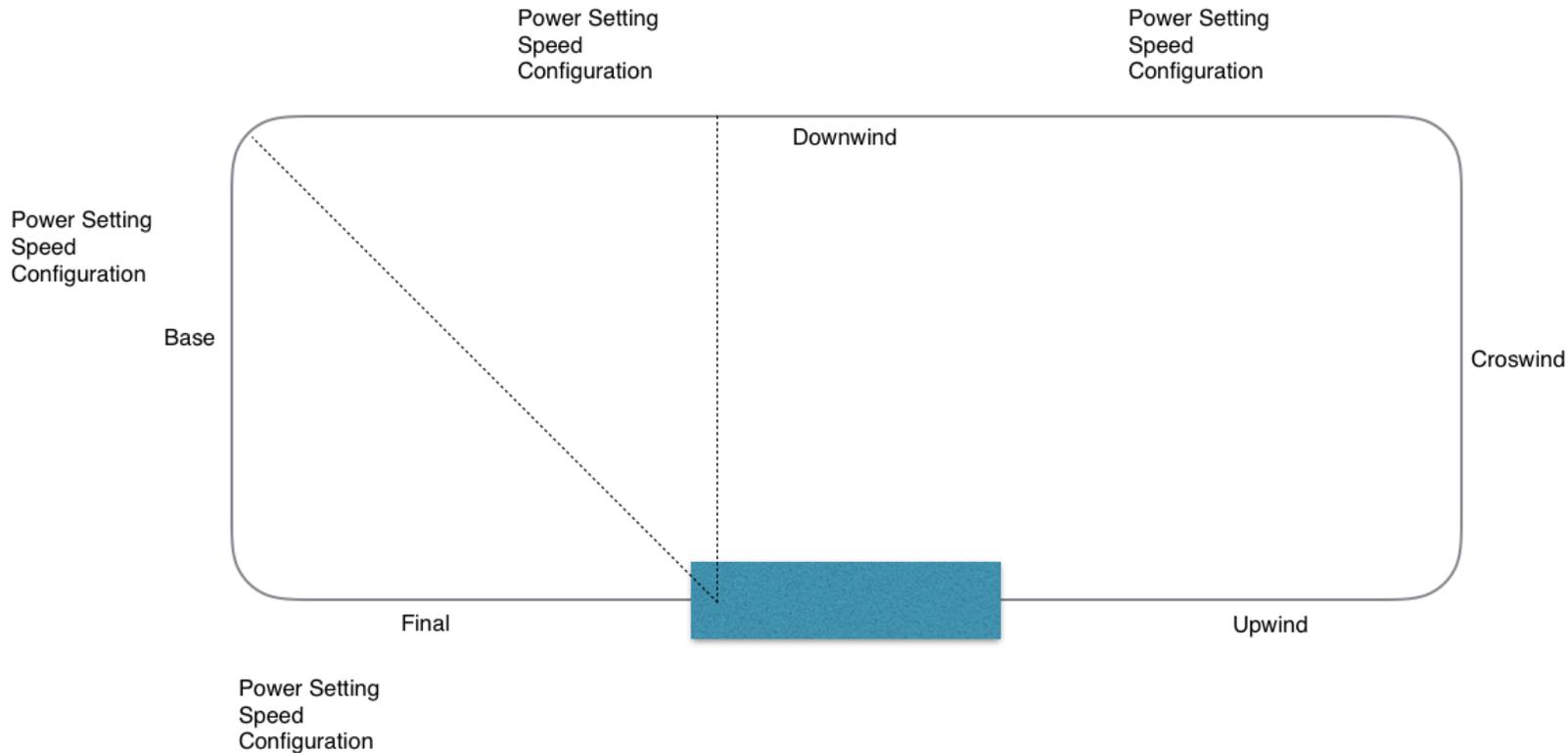
Deflect the ailerons into the wind during a crosswind takeoff. Maintain directional control with proper rudder input. Allow the aircraft to accelerate to a speed slightly higher than  $V_r$  prior to rotation. Lift the aircraft off the ground slightly quicker than with a normal takeoff. Shortly after rotation, crab the aircraft into the wind to track the aircraft along the runway centerline. Maintain coordination during climb with proper rudder input.

### **CLIMB**

Begin the initial climb at published  $V_x$  or  $V_y$  speeds as required. After clearing all obstacles along your intended flight path begin to accelerate to a cruise climb airspeed and retract flaps at a speed and altitude appropriate for your aircraft. Your instructor will give you detailed instructions for your aircraft. After crossing 1,000' above ground level turn off fuel pump and landing/taxi lights, and complete the climb checklist.

## Traffic pattern

With the help of your flight instructor, complete the following traffic pattern diagram with the power settings, speeds, configuration, and any other notes you find helpful.



## Stabilized Approach to Landing

VFR- All briefings and checklists should be completed by 1000' AGL. A VFR approach is considered stabilized when all the following criteria are achieved by 500' AGL:

- Proper airspeed
- Correct flight path
- Appropriate power settings
- Normal angle and rate of descent
- Only minor corrections are required to correct deviations

IFR-All briefings and checklists should be completed prior to the IAF for instrument conditions. An IFR approach is considered stabilized when all of the following criteria are met prior to the FAF and continues to the touch-down:

- Proper airspeed
- Correct flight path
- Correct aircraft configurations
- Normal rate of descent
- Only minor corrections with pitch and power are required to correct airspeed and glide path deviations
- Normal bracketing (+/- 5°) is used to correct for lateral and vertical deviations.

If an approach ever fails to meet the above criteria, a go-around is required. Those procedures are listed in the go-around section.

### Normal and Crosswind Approach and Landing

Normal landings should be made with full flaps. Final approach speeds should be adjusted to account for gusts exceeding 10 KTS by adding half of the gust factor (Example winds are 10 gusting 16. Gust factor is 6, so 3 KTS should be added to the approach speed). Reduce power smoothly and begin slowing from the final approach speed at a time that allows an easy transition from final descent to round-out and flare with minimum floating or ballooning. Touch-downs should be made on the main wheels first at speeds slightly above stall. Gently lower the nose wheel after the mains are on the ground.

#### **CROSSWIND**

It is recommended to crab the aircraft into the wind sufficiently enough to track the aircraft along the extended centerline of the runway. Hold the crab until the beginning of the round-out. At the start of the round-out, enter a slip by applying rudder pressure to align the longitudinal axis of the aircraft with the runway and simultaneously apply upwind aileron to keep the aircraft tracking the runway centerline. Touch-downs should be made on the upwind main landing gear first, followed by the downwind main landing gear, and nose gear. Hold aileron correction into the wind during the rollout and apply rudder as necessary to maintain directional control.

Rudder aligns the aircraft with the runway centerline.

Aileron controls side-to-side drift over the runway.

Your instructor may have you align with the runway using a slip prior to the round-out. This is to help establish a feel for how to align the aircraft with the runway

### Soft Field Takeoff

Our aircraft are approved for landings on soft field and turf runways if wheel pants are removed. Ground roll distance will be significantly longer than what we experience on paved runways, review the POH for takeoff distance prior to a takeoff from any contaminated or soft surface

runway. Always ensure that the quality and 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.

Follow the aircraft POH for specific soft field takeoff procedures and techniques.

### Soft Field Landing

A soft field approach is quite similar to a normal landing approach. Touch-downs should be made on the main wheels first. A soft touch-down will reduce the stress on the landing gear and make it easier to keep the nose wheel from digging into the turf preventing a loss of directional control. 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 touch-down to aid in keeping the nose wheel off the ground. Braking should be minimized. Excessive braking could lead to a loss of directional control on the runway. Higher power settings will be required to taxi on a soft field.

### Short Field Takeoff

A short field takeoff procedure should be used any time the runway available is less than twice the takeoff distance required, as calculated in the performance section of the aircraft POH considering the current weather conditions and aircraft weight.

Configure the aircraft as specified in the POH and position the aircraft at the very end of the runway, leaving no useful runway behind you. Allow the engine to achieve full power prior to releasing the brakes, note that very heavy brake application may be required. Most aircraft have a published initial climb speed that is very close to the rotation speed. This generally requires a relatively aggressive, but still smooth, pull on the controls. "Rotate like you mean it." Do be aware that an excessive pitch can cause a tail strike or stall, both of which should be avoided. Once clear of obstacles transition to a normal climb following the normal takeoff procedures unless specified otherwise in the POH.

### Short Field Landing

Landings on short runways should be made with 100% flaps. Final approach speeds should be adjusted to account for wind gusts exceeding 10 KIAS by adding half the gust factor. Progressively reduce power after clearing all approach obstacles. Proper airspeed and power control should result in an approach with minimal floating in ground effect without excessive sink rates during the approach. Touch-down should be made on the main wheels first. Immediately after touch-down, ensure power is at idle, lower the nose wheel and apply brakes as required. To decrease stopping distances, consider retracting the flaps and holding the control yoke full aft. Emphasis should be placed on the accuracy of the touch-down to ensure enough runway remains after touch-down to stop the aircraft.

### Go Around

A go-around should be executed anytime an approach does not meet the stabilized approach criteria outlined in this manual for instrument or visual conditions. A go-around should be completed from memory 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.
- Any bouncing or porpoising.
- Landing beyond the first third of the runway.
- Any condition when a safe landing is in question.
- Unstable approach.

The first priority of executing a go-around is to stop the aircraft's descent. 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 as necessary. Retract the flaps to a position normally used for takeoff. Do not fully retract the flaps at this point in the go-around because it may lead to excessive altitude loss.

Begin pitching for a climb attitude once the aircraft's descent rate has been stopped and the aircraft is accelerating. Pitch for  $V_x$  if obstacle clearance is an issue. Pitch for  $V_y$  for all other situations. Retract flaps once the aircraft is climbing, clear of obstacles, and has established a safe airspeed.

A go-around is an important maneuver which must be practiced frequently to maintain proficiency. Choosing to go-around should not be viewed as a failure of the approach, rather a smart decision and an opportunity to practice a skill equally as important as landing.

### Power-Off Stall

Practice this maneuver with varying flap configurations. Enter this maneuver from a level attitude by reducing the power and adding flaps as desired at  $V_{fe}$ . At an appropriate approach airspeed establish a descent to maintain the desired speed, straight or turning. Once a stabilized descent is established, reduce power to idle and gradually increase pitch to a normal touchdown attitude (5-10 degrees approximately). Adjust pitch to reduce airspeed approximately 1 KIAS per second. Recovery may be initiated at the stall warning, aerodynamic buffet or full stall, depending on your instructor's goals for the lesson.

### Power-On Stall

Practice this maneuver with cruise and/or take off flaps, straight and turning. Enter the maneuver from level or turning flight by reducing power and adding flaps as desired at  $V_{fe}$ . Slow the aircraft to approximately  $V_r$  while maintaining altitude. At or about  $V_r$  smoothly apply full power (your instructor may elect to use less in some circumstances) and pitch the aircraft at an angle to induce a stall. Apply rudder to maintain coordination. Recovery may be initiated at the stall warning, aerodynamic buffet or full stall, depending on your instructor's goals for the lesson.

It is imperative to maintain coordination with the rudder through this maneuver. The easiest way to accomplish this is by watching how the nose moves right or left across the sky. Correct any side-to-side drift with rudder only. This is easiest to do on a day with some clouds.

## Steep Turns

Enter this maneuver at or slightly below  $V_a$  by smoothly banking the aircraft to 45 degrees, 50 degrees for Commercial Pilot training, and simultaneously adding back pressure to maintain altitude. Maintain coordination with rudder. Additional power may be necessary to maintain airspeed. Continue the turn for 360 degrees. Start the roll out approximately 10 degrees before completing the full turn and simultaneously release back pressure. Reduce any power that was added during the maneuver.

It is strongly suggested that this be treated as a purely visual maneuver. Begin with a visual reference point straight ahead (cities, airports, sun, etc.). Avoid the temptation to look inside and monitor altitude and angle of bank. Instead, focus on outside reference points that your instructor will demonstrate to you. If the visual reference points are followed, angle of bank and altitude will remain constant.

## Slow Flight

Practice this maneuver with a variety of flap configurations while climbing, descending, and turning. Enter the maneuver in level flight and smoothly reduce power. Maintain altitude while the aircraft slows to the desired airspeed and trim the aircraft. Add flaps as desired at  $V_{fe}$ . Add power as necessary to maintain the desired altitude. Maintain coordination throughout the maneuver with rudder control. Recover from this maneuver if a stall warning is encountered.

## Emergency Descent

There are multiple situations that require the use of an emergency descent. For example, fire, medical emergency, or an O2 malfunction are just a few. Whatever the reason, the main purpose of performing an emergency descent is to lose altitude as quickly as possible to avoid life-threatening hazards. For some scenarios, landing the aircraft at an airport or suitable off-airport landing site may be an additional objective.

To enter an emergency descent, reduce the power to idle or published emergency descent power setting and lower the nose approximately 10 - 15 degrees to intercept  $V_{ne}$ . Pitch the aircraft to  $V_{no}$  if significant turbulence is expected during the descent. Alternatively, if the manufacturer doesn't specify a procedure, flaps can be fully extended and the pilot should pitch for  $V_{fe}$ .

Banking the aircraft up to 60 degrees will help the aircraft descent more quickly as well as keep wing loading positive during the maneuver. Early in your training, it is helpful to establish a pitch attitude that will give a desired airspeed before introducing bank. Ultimately, the goal is to be able to establish pitch and bank simultaneously.

Set the mixture control as recommended and turn the boost pump on. Clear the engine every 1000 feet by increasing throttle as necessary, then reducing back to idle. The combination of high airspeed and low power will cause CHTs to cool. It is good practice to allow the engine to warm before applying high power settings. When possible restore power to minimum necessary for level flight until CHTs return to green.

Inform ATC of the emergency and intended actions and request any assistance if necessary when workload permits.

## Emergency Procedures

When practicing engine related emergencies other than fire, the **ABC** checklist is a great place to start. It works well for engine failure scenarios, as well as other problems such as a rough running engine.

*This doesn't replace knowing the memory items covered in your POH and checklist!*

**A - AIRSPEED** - Set the plane for "Best Glide Speed".

**B - BEST FIELD** - Locate a suitable landing site, don't overlook any close airports, but otherwise find a good looking field that's wide and long and oriented into the wind. Turn towards this field. It's not good enough to just locate a field, you have to be able to land on it. If you arrive over the field too high you can always circle down to lose altitude, if you're not going to reach the field because you didn't turn immediately towards it there's nothing that can help you gain altitude.

**C - COCKPIT CHECK** - Why did the engine stop and can you re-start it? Don't overlook the obvious, if you just moved something and the engines stops, move it back! In the Diamond this flows back to front and right to left.

- Fuel Selector, ON, switch tanks.
- Mixture, as required.
- Throttle, open.
- Alternate Air, open.
- Fuel Pump, on.
- Master Switch, verify on
- Mags, cycle L,R, Both.

If you have time, review your emergency checklist.

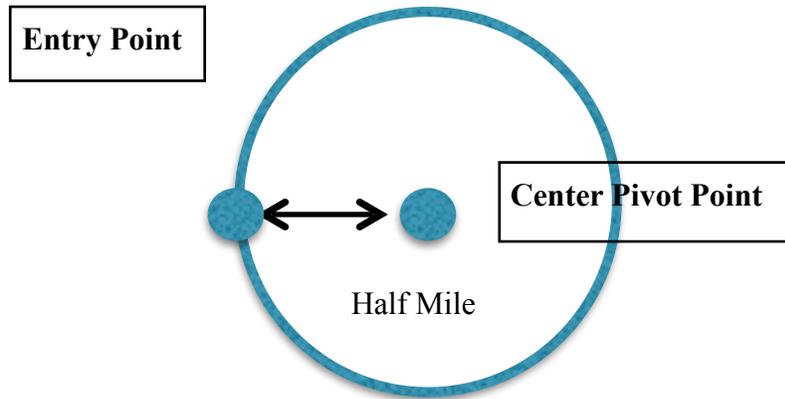
**D - DECLARE AN EMERGENCY** - Tell somebody what's happening. If you were already in contact with ATC or FSS or even Unicom at an airport, tell them. Otherwise use the emergency frequency (121.5) to call your Mayday and location. Set your transponder to 7700 if not already assigned a code.

**E - EXIT, PREPARE** - Brief you passengers and make other preparations for the forced landing. You should cover issues such as seat belts fastened, how to exit, and where to meet after landing.

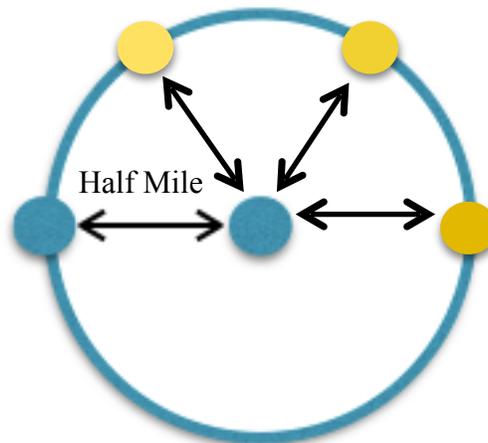
## Turns Around a Point

A maneuver in which the airplane's ground track makes a perfect circle around a selected point on the ground. Bank angle must be varied to compensate for wind.

The maneuver should begin at 800' AGL (about 1800' MSL). Take care to choose an unpopulated area, and change locations frequently to reduce noise on the ground. Begin by choosing a clearly visible central point to pivot around, and an entry point about a half mile away.



The next step is to select 5 to 8 easily identifiable points along a circle, each an equal distance from the center pivot point, and fly over each selected point. It will be difficult to select all 5-8 points initially. Instead, focus on having 3 points selected. The point you're going over, the point you're flying to, and another point you're in the process of choosing.

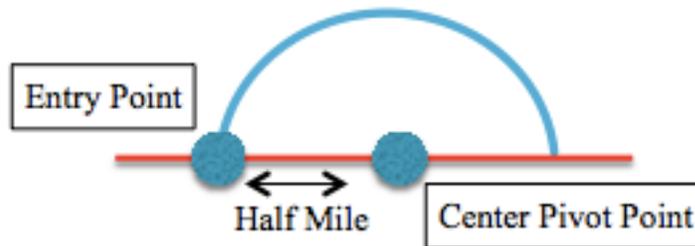


After the completion of the first lap try to use the same points again. If you find some points are of unequal distance simply discard them and choose new points. After several laps the circle should be perfect and your bank angle will be constantly varying to compensate for the wind.

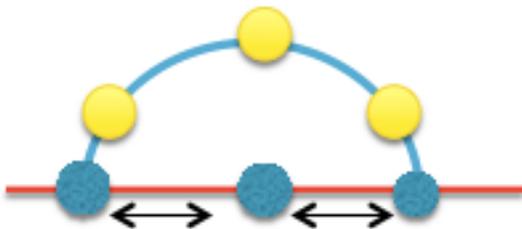
## S Turns

A maneuver in which the airplane's ground track describes semicircle on equal radii on each side of a selected straight line on the ground.

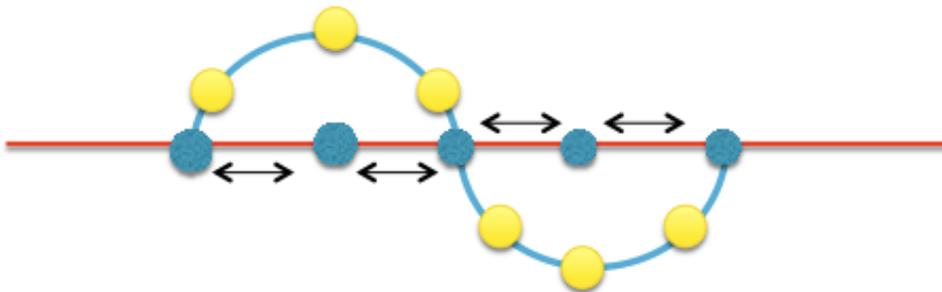
The maneuver should begin at 800' AGL (about 1800' MSL) with a straight ground reference in mind. A long straight stretch of road, power lines, or train tracks work well. Begin by choosing a clearly visible central point to pivot around, and an entry point about a half mile away.



The next step is to select 3 or 4 points along a semicircle, each an equal distance from the center pivot point, and fly over each selected point. It helps to have 3 points selected at any point in the maneuver.



After the completion of the first half circle, choose another pivot point about equal distance down the road, and repeat the process, in the other direction. Continue this process as long as you or your instructor desires.

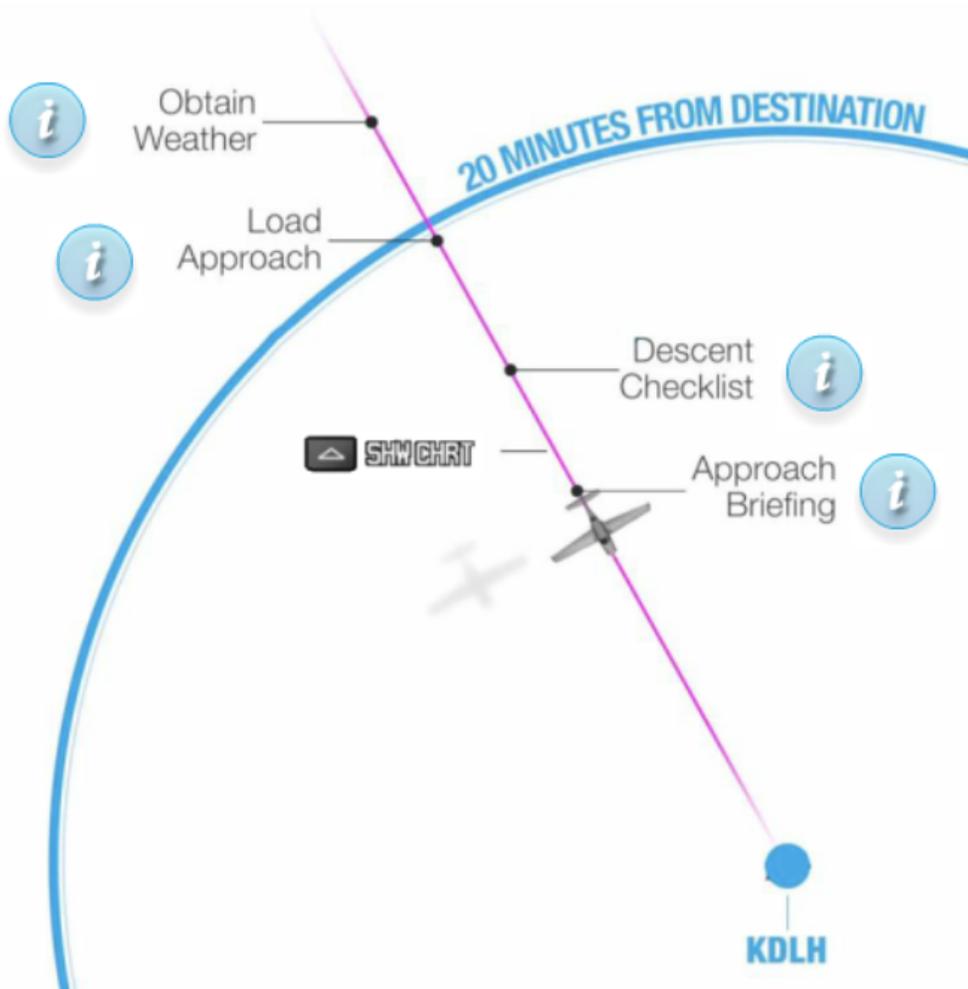


## Instrument Procedures

### Preparation for approach

Preparation for any approach should begin on the ground before departure. Considerations such as forecasted weather, approach available, and required databases and charts should be considered well prior to departure.

When in flight, 20 minutes prior to reaching the destination, accomplish these 4 tasks.



## IFR Stabilized Approach Definition

All briefings and appropriate checklists should be completed prior to the IAF for instrument conditions.

An instrument approach is considered stabilized when all of the following criteria are met prior to the FAF, and continues to touch-down:

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

A missed approach must be executed if the above conditions are not met at any point during an instrument approach.

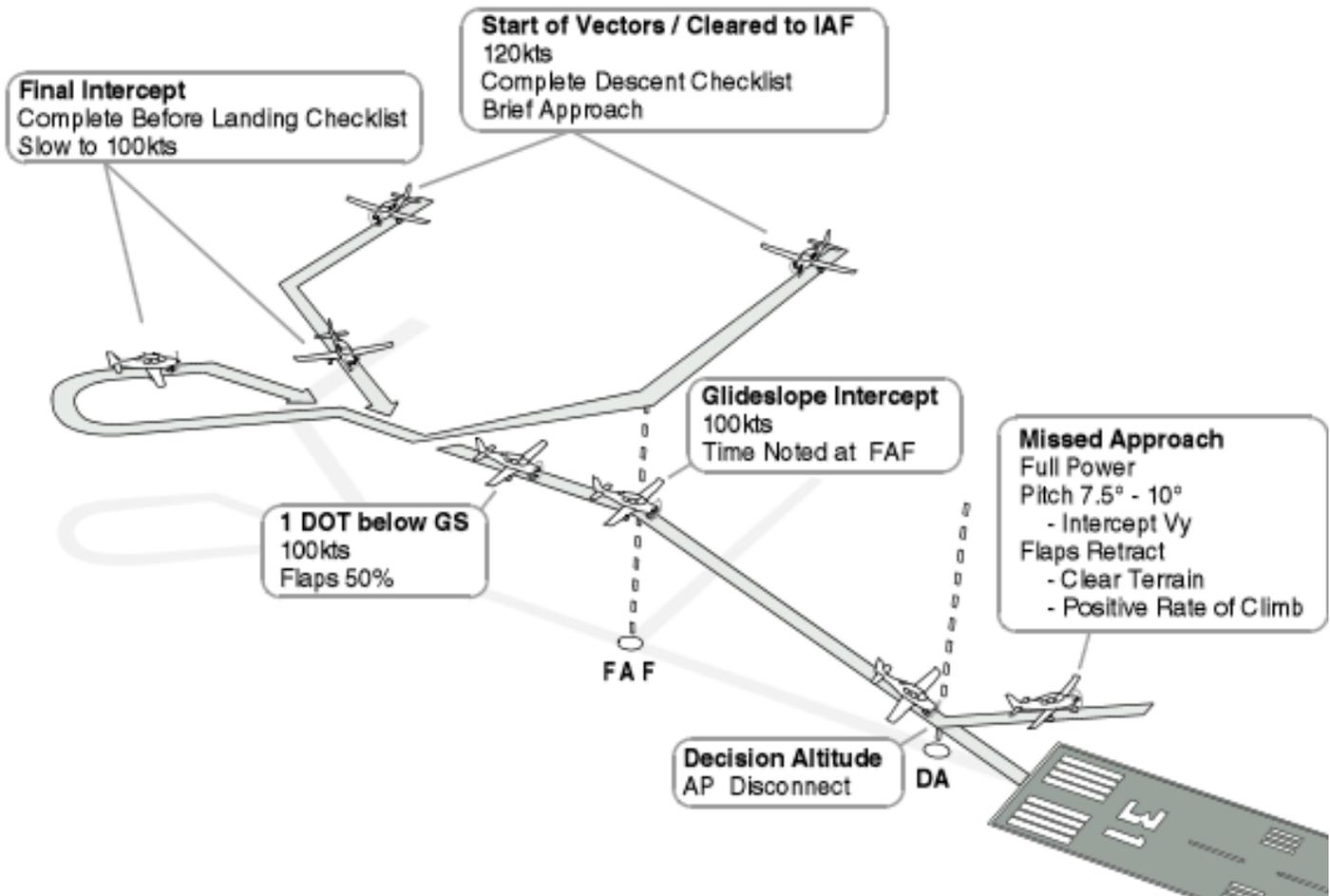
## Approach Briefing

The purpose of an approach briefing is to prepare the pilot to execute an instrument approach procedure. Pilots should brief the instrument approach procedure when time and workload permits. Preferably, the approach should be briefed approximately 20 minutes prior to the IAF or start of vectors. The approach briefing should include the following items:

- Type of procedure and runway (e.g. ILS 35L),
- Transition to final (vectors or IAF),
- Applicable COM and NAV frequencies,
- Approach altitudes and DA or MDA,
- Airspeeds and configuration changes,
- MAP and missed approach procedure.

### Sample Approach Briefing

This will be a \_\_\_\_\_ (ILS, GPS...) approach to \_\_\_\_\_ airport, 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 the HSI. Applicable approach frequencies are tuned and identified. Final approach speed is \_\_\_\_\_ KIAS with approach flaps set 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.



### Precision Approach

The speeds listed below are specific to the Cirrus SR20. With the help of your instructor, fill out the speeds necessary at each point along the approach for the aircraft you are flying.

### AUTOPILOT CONFIGURATION

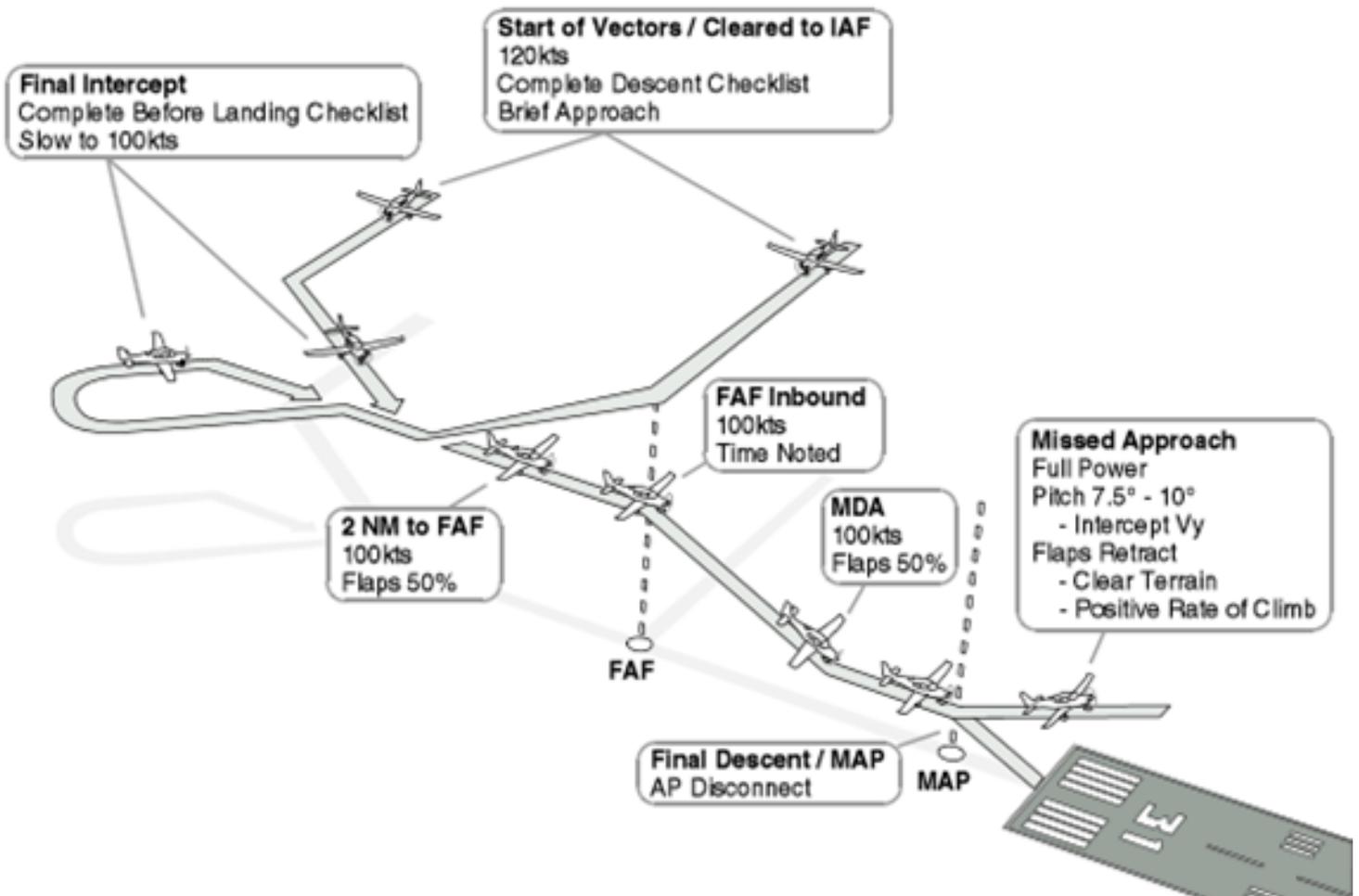
Approach Segment	GFC 700		S-tec or KAP 140	
	Lateral Mode	Vertical Mode	Lateral Mode	Vertical Mode
Vetor to Final	HDG-1	As Required	HDG	As Required
Cleared to IAF	NAV (GPS)	As Required	NAV / GPSS	As Required
Proc turn/ corse reversal	NAV (GPS)	As Required	NAV / GPSS	As Required
Inbound to FAF	NAV (GPS, VOR, LOC)	ALT	APR	ALT
FAF inbound	APR	APR	APR	APR

Approach Segment	GFC 700		S-tec or KAP 140	
	Lateral Mode	Vertical Mode	Lateral Mode	Vertical Mode
<b>Missed Approach</b>	GA-2	GA	NAV -flight director	ALT-flight director

1. Arm NAV when cleared to intercept final, arm APR when cleared for the approach
2. Press the Go Around button at the decision altitude or missed approach point. Ensure the altitude bug is set to the assigned missed approach altitude.

## Non-precision Approach

The speeds listed below are specific to the Cirrus SR20. With the help of your instructor, fill out the speeds necessary at each point along the approach for the aircraft you are flying.



## AUTOPILOT CONFIGURATION

Approach Segment	GFC 700		S-tec or KAP 140	
	Lateral Mode	Vertical Mode	Lateral Mode	Vertical Mode
<b>Vetor to Final</b>	HDG-1	As Required	HDG	As Required
<b>Cleared to IAF</b>	NAV (GPS)	As Required	NAV / GPSS	As Required
<b>Proc turn/ corse reversal</b>	NAV (GPS)	As Required	NAV / GPSS	As Required
<b>Inbound to FAF</b>	NAV (GPS, VOR, LOC)	ALT	APR	ALT
<b>FAF inbound</b>	APR	VS + ALTS	APR	VS + ALT
<b>Missed Approach</b>	GA-2	GA	NAV -flight director	ALT-flight director

1. Arm NAV when cleared to intercept final, arm APR when cleared for the approach
2. Press the Go Around button at the decision altitude or missed approach point. Ensure the altitude bug is set to the assigned missed approach altitude.

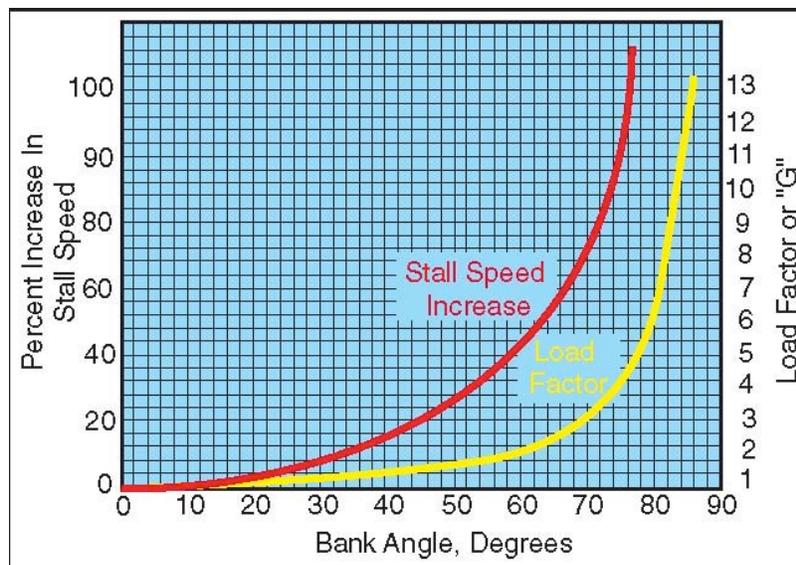
## Commercial maneuvers

### Accelerated Stalls

An aircraft always stalls at a given angle of attack, and is independent from airspeed. Every aircraft does have a published stall speed, which is a speed at which the aircraft will stall under a specific set of conditions. If the aircraft is operated at any weight, configuration, or under any load factor other than 1.0, the stall speed will be different than the published speed. An accelerated stall demonstrates understanding of this concept.

To demonstrate an accelerated stall, the aircraft must be placed in a condition with a load factor greater than 1.0 while increasing the angle of attack past the critical point to induce a stall. We have found the best way to demonstrate this maneuver is to begin a steep turn anywhere between 45° and 60° of bank, so long as the bank is constant. Slowly reduce power to idle. As airspeed decreases, maintain altitude by increasing pitch until the aircraft stalls. Note the airspeed. Initiate a recovery by first decreasing the angle of attack and load factor by smoothly pushing forward on the stick. Increase power to full or as specified by your instructor. Roll the wings level to orient the lift vector to vertical. Initiate a climb at  $V_y$  or cruise climb speed as appropriate or specified by your instructor.

You will see the stall speed is greater than the published stall speed, and the stall speed typically observed in power on or off stalls. The speed observed will follow this graph.



## Chandelle

A chandelle is a maximum performance climbing turn beginning from approximately straight-and-level flight, and ending at the completion of a precise 180 degree turn in a wings-level, nose-high attitude at the minimum controllable airspeed. The maneuver demands that the maximum flight performance of the airplane be obtained; the airplane should gain the most altitude possible for a given degree of bank and power setting without stalling.

Since numerous atmospheric variables beyond control of the pilot will affect the specific amount of altitude gained, the quality of the performance of the maneuver is not judged solely on the altitude gain, but by the pilot's overall proficiency as it pertains to climb performance for the power and bank combination used, and to the elements of piloting skill demonstrated.

Prior to starting a chandelle, the flaps should be in the Up/Cruise position, power set for  $V_a$ , and the airspace behind and above clear of other air traffic. The maneuver should be entered from straight-and-level flight at maneuvering speed. After the appropriate airspeed and power setting have been established, the chandelle is started by smoothly entering a coordinated turn with an angle of bank of  $30^\circ$ . Increase to full power as the climb is initiated.

The first  $90^\circ$  of heading change will be made at a constant  $30^\circ$  of bank with a constantly increasing pitch attitude. The second  $90^\circ$  of the maneuver will be made at a constant pitch attitude (elevator will continue to come aft as airspeed slows to maintain pitch). Bank angle should be decreased at a rate that will allow the maneuver to end just as the stall horn activates.

This maneuver is all about proper rudder usage, establishing and maintaining a pitch, and timing the final segment to complete the maneuver as the stall horn activates.

## Eights on Pylons

Eights on pylons are the most advanced and most difficult of ground reference maneuver. Because of the various techniques involved, eights on pylons is unsurpassed developing and testing subconscious control of the airplane.

This training maneuver involves flying the airplane in circular paths, alternately left and right, in the form of a figure "eight" around two selected points or pylons on the ground. Unlike eights around pylons or S-turns, however, no attempt is made to maintain a uniform lateral distance from the pylon. In eights on pylons, the distance from the pylons varies if there is any wind. Instead, the airplane is flown at such a precise altitude (pivotal altitude) and airspeed that a line parallel to the airplane's lateral axis, and extending from the pilot's eye, appears to pivot on each of the pylons.

In the performance of eights on pylons the degree of bank increases as the distance from the pylon decreases. The altitude that is appropriate for the airplane being flown is called the pivotal altitude and is governed by the groundspeed. While not truly a ground track maneuver as are

other ground reference maneuvers, the objective is similar: to develop the ability to maneuver the airplane accurately while dividing one's attention between the flight path and the selected points on the ground.

In explaining the performance of eights on pylons, the term “wing tip” is frequently considered as being synonymous with the proper reference line, or pivot point on the airplane. The selected pylons should also be at the same elevation, since differences of over a very few feet will necessitate climbing or descending between each turn.

Ground speed	Pivotal Altitude (AGL)
90	717'
100	885'
110	1071'
120	1274'

### Lazy Eight's

The lazy eight is a maneuver designed to develop perfect coordination of controls through a wide range of airspeeds and altitudes so that certain accuracy points are reached with planned attitude and airspeed. In its execution, the dive, climb, and turn are all combined, and the combinations are varied and applied throughout the performance range of the airplane. It is the only standard flight training maneuver during which at no time do the forces on the controls remain constant.

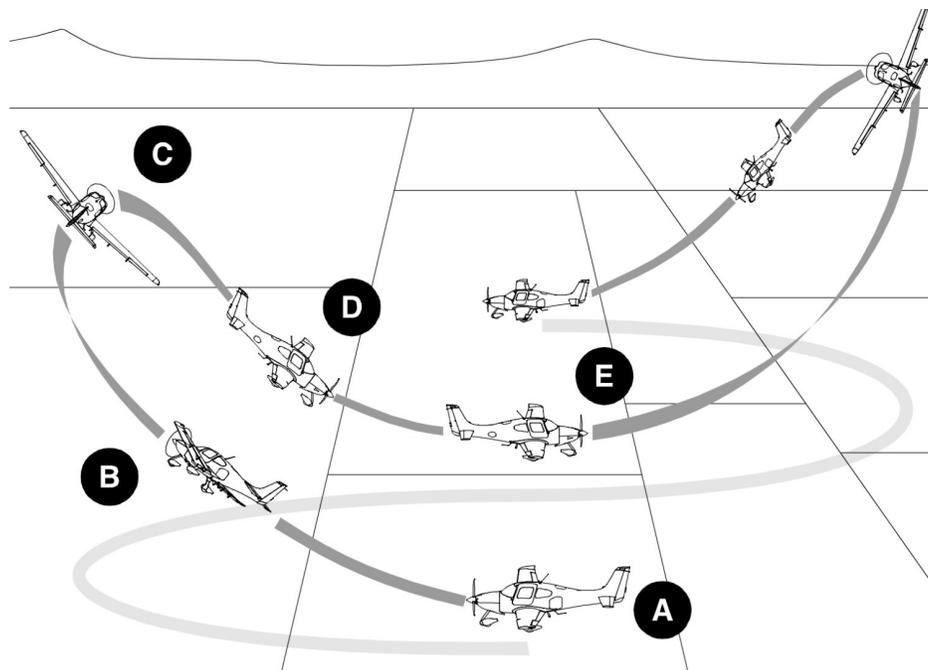
The lazy eight as a training maneuver has great value since constantly varying forces and attitudes are required. These forces must be constantly coordinated, due not only to the changing combinations of banks, dives, and climbs, but also to the constantly varying airspeed. The maneuver helps develop subconscious feel, planning, orientation, coordination, and speed sense. It is not possible to do a lazy eight mechanically, because the control pressures required for perfect coordination are never exactly the same.

A lazy eight consists of two 180-degree turns, in opposite directions, while making a climb and a descent in a symmetrical pattern during each of the turns. At no time throughout the lazy eight is the airplane flown straight and level; instead, it is rolled directly from one bank to the other with the wings level only at the moment the turn is reversed at the completion of each 180-degree change in heading. As an aid to making symmetrical loops of the “eight” during each turn,

prominent reference points should be selected on the horizon. The reference points selected should be 45-degrees, 90-degrees, and 135-degrees from the direction in which the maneuver is begun.

Prior to performing a lazy eight, the airspace behind and above should be clear of other air traffic. The maneuver should be entered from straight-and-level flight at  $V_a$ . Power remains constant throughout the maneuver.

It is helpful to learn this maneuver first by walking through it on the ground with your instructor. Once in the plane, expect to begin training for this maneuver by only focusing on the bank and maintaining level flight. Once that is mastered pitch and altitude can be increased incrementally.



- A** ENTRY:
  1. LEVEL FLIGHT
  2. MANEUVERING OR CRUISE SPEED WHICHEVER IS LESS OR MANUFACTURER'S RECOMMENDED SPEED

- B** 45° POINT:
  1. MAX. PITCH-UP ALTITUDE
  2. BANK 15° (APPROX.)

- C** 90° POINT:
  1. BANK APPROX 30°
  2. MINIMUM SPEED
  3. MAXIMUM ALTITUDE
  4. LEVEL PITCH ATTITUDE

- D** 135° POINT:
  1. MAX. PITCH-DOWN
  2. BANK 15° (APPROX.)

- E** 180° POINT:
  1. LEVEL FLIGHT
  2. ENTRY AIRSPEED
  3. ALTITUDE SAME AS ENTRY ALTITUDE

## Steep Spirals

A steep spiral is a constant gliding turn, during which a constant radius around a point on the ground is maintained, similar to the turns around a point maneuver. The radius should be such that the steepest bank will not exceed 60 degrees. Start the maneuver at 3,000 feet AGL or higher so that the spiral may be continued through a series of at least three 360-degree turns.

Operating the engine at idle speed for a prolonged period during the glide may result in excessive engine cooling or spark plug fouling. The engine should be cleared every 1,000 feet by briefly advancing the throttle to normal cruise power, while adjusting the pitch attitude to maintain a constant airspeed. Preferably, this should be done while headed into the wind to minimize any variation in groundspeed and radius of turn.

## Section 4, Reference material

### ATC Communications

The following is a script that can be referenced for common ATC communication procedures in and out of Lexington. Other locations will follow a similar pattern. Your instructor will show you how to find the frequencies for any airport you may visit. If ever in doubt, use plain English.

Who you're calling

Who you are

Where you are

What you want

Never accept a clearance you cannot do safely, or are uncomfortable with.

-Just say **"Unable"**

Don't be afraid to ask the controller to repeat anything they have said.

- Just say **"Say again"**

If a controllers requests are ever unclear or you don't fully understand their instructions, ask them to clarify.

LiveATC.net is a great way to get familiar with procedures and the lingo.

### ATIS 126.3

Name:

Time:

Wind direction:                      Speed:

Visibility:

Clouds:

Temp:

Dew point:

Altimeter setting:

Runway in use:

Notice to airmen(NOTAMS):

(X)	2045Z	260.9
V10	few 65	12/9 29.81
RW 22		

### Clearance 132.35

(Lexington often combines clearance delivery and ground control on one frequency)121.9

Us:

Lexington Clearance , Diamond 167 Delta Charlie

Clearance:

Diamond 7DC, Lexington Clearance go ahead

Us:

Diamond 7DC VFR Departure [Altitude] Heading XXX° (or airport identifier/name, or practice area)

Clearance:

Diamond 7DC, maintain VFR at or below 3,000' Departure Frequency (120.15 East, 120.75 West) Squawk \_\_\_\_\_

Us:

Diamond 7DC Maintain VFR at or below 3,000' Departure frequency \_\_\_\_\_  
Squawk \_\_\_\_\_

Clearance:

Diamond 7DC, read back correct, advise when ready to taxi.

**Ground 121.9**

Us:

Diamond 7DC ready to taxi with [atis] information \_\_\_\_\_

Ground:

Diamond 7DC taxi to runway:

-4 Via Charlie and Alpha

-22 Via Charlie, Alpha, cross (or hold short of) 27 approach

-Other

Us:

7DC [read back taxi instructions]

**HOLD SHORT OF RUNWAY**

**Tower 119.1**

Us:

Lexington Tower, Diamond 167DC holding short runway \_\_\_\_\_

Tower:

Diamond 7DC Hold short runway \_\_\_\_ (landing traffic) *OR*

Diamond 7DC Runway \_\_\_\_\_ line up and wait

Diamond 7DC Cleared for takeoff runway \_\_\_\_\_ Turn (Left/Right) heading \_\_\_\_ (LEX tower typically advises current winds. Do not read back the wind information)

Us:

[Read back above instructions]

Tower:

Diamond 7DC Contact departure

Us:

Diamond 7DC Contact departure

**Departure 120.15 East, 120.75 West**

Us: (*Listen for about 15 seconds before talking to avoid talking over someone else*)

Lexington Departure, Diamond 167DC Climbing through [altitude last passed through. If at 1675, call it 1600]

Departure:

Diamond 7DC radar contact (Instructions)

Departure:

Diamond 7DC (Fly heading\_\_\_\_) (proceed on course)

-If told to proceed on course, you are allowed to deviate from the previously assigned heading and proceed to destination

-When told "Maintain VFR," or "VFR Altitude," we can go to any altitude we would like. The "at or below 3,000" restriction no longer applies. If unsure, ask for clarification.

Us:

On course, Diamond 7DC

**Approach** 120.15 East, 120.75 West

Us:

Lexington approach, Diamond 167DC, [distance and direction from LEX, or position relative to another local airport] [intentions] [ATIS information]

Approach:

Diamond 7DC squawk \_\_\_\_\_

Us:

[Given code], Diamond 7DC

Approach:

Diamond 7DC radar contact [possibly also distance and direction from airport, confirming it's you] specific instructions; fly a heading for traffic, enter down wind, base, final, etc.

Us:

Diamond 7DC [repeat instructions]

Approach:

Diamond 7DC contact tower 119.1

Us:

Contacting tower, Diamond 7DC

**Tower 119.1**

Us:

Lexington Tower Diamond 7DC [approach instructions. I.E. “straight in runway 4.” “right base runway 22, Etc.”]

Tower:

Diamond 7DC Lexington tower, (Cleared to land runway \_\_\_) (extend downwind) Etc.

Us:

Repeat instructions, Diamond 7DC

(After Landing)

Tower:

Diamond 7DC [exit runway instructions. I.E. Turn left at Golf, or turn right when able] and contact ground 121.9 (or sometimes “point niner”)

Us:

Read back instructions “Left on Charlie, contact ground, 7DC”

**Ground 121.9**

Us:

Lexington ground, Diamond 7DC on taxiway \_\_\_ taxi to NexGen

Ground:

Diamond 7DC taxi to the ramp via Alpha and Charlie

Us:

Taxi via Alpha and Charlie, Diamond 7DC

## Cross Country Planning Guide

### 1. CHOOSE YOUR DESTINATION

Sometimes this is simple, other times it isn't. A flight to Asheville, NC with one airport requires no decision making. If you want to go to Asheville, your destination airport is Asheville Regional. If you want to go to Indianapolis, there are nearly a dozen choices. Generally, you'll choose an airport close to whatever it is you want to do in the city you're visiting, but other factors such as services available, rental cars, landing fees, and fuel prices may influence your decision.

Don't assume just because an airport sells fuel you'll be able to stop and get all you need. Some self-serve pumps are closed at night, and even at large airports fuel could be sold out or the truck could be broken. If you will be relying on a fuel stop, call ahead.

### 2. CHOOSE YOUR ROUTE

The best route is usually the shortest route, and that means a direct route. Unfortunately, it's not always that easy. Terrain, airspace, and temporary flight restrictions (TFR) often prevent flying direct. Map out your route on a sectional, choosing a route that avoids airspace conflicts, flight over hazardous terrain such as extended flights over water, and clear of TFR's.

VFR visual checkpoints should be spaced about every 5 minutes, although that number isn't set in stone. Feel free to choose more frequent checkpoints. Sometimes there is no choice but to space checkpoints further apart. Have a method of maintaining awareness of where you are at all times that doesn't involve looking at the GPS map.

### 3. GET A WEATHER BRIEFING/ CHECK NOTAMS

The best option is to call Flight Service at 1-800-wx-brief and ask for a weather briefing. It's a free service that puts you in contact with a trained weather briefer that will provide you with a complete picture of the weather, as well as any Notices to Airmen (NOTAMS) that may be relevant to you.

The next best option is ForeFlight. It is an iPad app (sorry Android and Windows people, although you have similar and honestly just as good options such as Garmin Pilot and Aerovie) Ask your instructor or use the ForeFlight online training to learn how to use the File and Brief feature.

### 4. CHOOSE AN ALTITUDE AND CALCULATE CLIMB/CRUISE/DESCENT PERFORMANCE

Based on the winds aloft report from the weather briefing, and the terrain and airspace restrictions found earlier, you'll choose the most advantageous altitude for your trip. Your instructor will teach you how to use the performance charts for your aircraft to find true airspeed, ground speed, and fuel flow.

## **5. COMPUTE TIME, AND FUEL CONSUMPTION**

Using the data from the previous step, as well as the distance for each leg, use an E6B (manual or electronic. Give the manual one a try, you'll find it's simple and quick to use) to calculate time and fuel for each leg as well as total time and total fuel. Be sure to have 1 hour of extra fuel reserves.

## **6. FAMILIARIZE YOURSELF WITH THE DESTINATION AIRPORT.**

There is nothing more embarrassing than landing at a large airport with several FBO's and not having an answer to the ground controller when he asks "say parking." Choose an FBO (if there are more than one) based on fuel prices and services available. Many pilots find it helpful to read reviews on ForeFlight or Airnav when making a decision. Once you decide on an FBO, find them on a map and make an educated guess on what taxi routes you're likely to be assigned. Even at non-towered airports with a single FBO its good practice to do the same. Some of the biggest surprises come from non-towered airports.

Another important consideration to be aware of is hours of operation for both FBO's and ATC. Many towered airports are part time.

## **7. DOUBLE CHECK EQUIPMENT**

Is the aircraft equipment functional and up to date? What your your charts? Don't overlook the small things like having spare batteries for a flashlight and headset, as well as a charged phone and tablet. Be sure to take a spare phone charger with you, and consider investing in a USB battery pack.

## **8. GET AN UPDATED BRIEFING**

Weather can change quickly and unexpectedly. Check the weather again within half an hour of your departure to see if anything has changed. Be prepared to change your plans if the weather changes.

## **9. FILE A FLIGHT PLAN**

A VFR flight plan is a valuable tool that adds a layer of safety to every flight. They can be filed through flight service or online through a variety of services. Once filed, a VFR flight plan can be opened several ways.

- In flight through FSS radio frequencies found on sectional charts
- Over the phone prior to departure. Tell the briefer you want to activate your flight plan 10 minutes from now, or however long you think it will take to depart.
- ForeFlight now allows app based flight plan activation. Just click activate.

Upon landing, be sure to close your flight plan. A good way to remind yourself is with an alarm or location based reminder on your smart phone.

## **10. BE PREPARED FOR CHANGES**

Weather changes prior to departure may force you to delay or cancel your departure. Weather changes enroute can have the same impact. It's always best to divert to an airport along your way early while you have plenty of options rather than to push through into worsening

conditions hoping for the best. Many times an early “pit stop” can give you an opportunity to take on additional fuel, reevaluate the weather, and come up with a new plan to fly around troublesome weather. Rarely is racing the weather the best option.

## Checkout form

Prior to rental, this rental form shall be completed for each make and model you wish to rent.

This checkout form does not intend to provide all relevant information for the safe operation of an aircraft. Rather, it serves as a guide to work through the aircraft flight manual or pilots operating handbook to gain a better understanding of the operation of the aircraft. In addition to a through flight checkout with an instructor, all parts of the AFM or POH should be read and understood prior to operation of an aircraft.

### Chapter 2- Operating Limitations

1. What is  $V_a$  at maximum gross weight? \_\_\_\_\_
2. What is the maximum load in the standard baggage compartment? \_\_\_\_\_
3. What is the maximum zero fuel weight? \_\_\_\_\_
4. What is the maximum speed with Takeoff flaps? \_\_\_\_\_ How is this depicted on the airspeed indicator? \_\_\_\_\_
5. What is the maximum speed with Landing flaps? \_\_\_\_\_ How is this depicted on the airspeed indicator? \_\_\_\_\_
6. Does the aircraft use a 12 or 24 volt electrical system? \_\_\_\_\_
7. Does the maximum load factor limit change with flap position? \_\_\_\_\_
8. What is the total usable fuel quantity? \_\_\_\_\_
9. What is the maximum demonstrated crosswind component? \_\_\_\_\_

### Chapter 3- Emergency Procedures

1. What is the best glide speed with flaps up? \_\_\_\_\_
2. What is the best glide speed with flaps in takeoff position? \_\_\_\_\_
3. What steps should be taken following an engine failure after takeoff?  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
4. What steps should be taken if the engine is running rough in flight? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
5. What steps should be taken for a cabin fire during flight  
\_\_\_\_\_  
\_\_\_\_\_
6. Describe the recommended spin recovery technique. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

### Chapter 4- Normal Procedures

1. What is  $V_x$  for flaps in takeoff position? \_\_\_\_\_
2. What is  $V_y$  for flaps up? \_\_\_\_\_
3. What is the approach speed with flaps in landing position? \_\_\_\_\_
4. Does the aircraft have a maximum structural temperature? \_\_\_\_\_
5. Can the canopy be open slightly while on the ground for cooling? \_\_\_\_\_
6. Describe the cold engine starting procedure. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
7. What is the recommended rotation speed? \_\_\_\_\_

8. How and when should the engine be leaned? \_\_\_\_\_  
\_\_\_\_\_

### Chapter 5- Performance

1. What is CAS at  $V_x$  with takeoff flaps? \_\_\_\_\_
2. What is the take off distance at 1,000' pressure altitude, 72°F, 340 pounds of pilots/passengers, full fuel and no wind, over a 50 foot obstacle? \_\_\_\_\_
3. What is the true airspeed during cruise at 5,000', 15°C and 65% power? \_\_\_\_\_
4. How much would cruise speed be reduced without wheel fairings? \_\_\_\_\_
5. What is the cruise fuel flow at 65% power and 6,000' and best power leaning technique \_\_\_\_\_
  - a. What is the endurance with full fuel? \_\_\_\_\_

### Chapter 6- Weight and Balance

1. Calculate the weight and balance using your own weight, an instructor weighing 170 Lbs, full fuel and 15 pounds baggage.
2. How does the center of gravity move as fuel is burned? \_\_\_\_\_
3. Would the CG move out of the acceptable range on a 2 hour flight at 65% power at 6,000 feet? \_\_\_\_\_

### Chapter 7- Systems

1. Can/ How are the pedals/seat adjusted \_\_\_\_\_
  - a. Can they be adjusted in flight? \_\_\_\_\_
2. How does the parking brake work? \_\_\_\_\_
3. Should the mixture be leaned prior to takeoff? \_\_\_\_\_
4. What is the minimum oil level? \_\_\_\_\_
5. Describe the fuel system \_\_\_\_\_
6. When should the fuel shutoff valve be used? \_\_\_\_\_
7. How many fuel sumps does the aircraft have? \_\_\_\_\_

## Nexgen Pilot Package

Available on the NexGen Website

1. All renters will follow **Instrument/Commercial Student Weather Minimums**. What is the minimum flight visibility for a cross country flight under VFR?  
\_\_\_\_\_
- A. What is the maximum peak wind gusts? \_\_\_\_\_
2. What task shall be completed prior to taxing an aircraft? \_\_\_\_\_
3. How shall a correct runway be verified prior to takeoff? \_\_\_\_\_
4. Describe the Nexgen minimum fuel requirements. \_\_\_\_\_
5. What is the procedure for renting an aircraft after 6 months of not flying with NexGen?  
\_\_\_\_\_
6. NexGen hangars are heated. Below what temperature should the doors be kept closed?  
\_\_\_\_\_

## Flight Training Record

### Mandatory Tasks

STUDENT:  
INSTRUCTOR:  
DATE:  
AIRCRAFT MODEL:

Normal Procedures	Completed/ Notes
Preflight	
Engine starting	
Before Taxi/ Taxi	
Before takeoff/ briefing	
Normal takeoff	
Climb	
Cruise	
Descent	
Traffic Pattern	
Normal Landing	
Crosswind Landing	
After Landing/ Shutdown	
Aircraft Securing	
Avionics Management	
Autopilot Management	
Single Pilot Resource Management	
Maneuvers	Completed/ Notes
Power On Stall (in a turn)	
Power Off Stall	
Autopilot Stall	
Slow Flight	
Steep turns	

STUDENT:  
 INSTRUCTOR:  
 DATE:  
 AIRCRAFT MODEL:

Choose 3 Plus Go Around

Special Procedures	Completed/ Notes
Short Field Takeoff	
Short Field Landing	
Soft Field Takeoff	
Soft Field Landing	
Partial Flap Landing	
Flap Up Landing	
Power Off Landing	
Go Around	

Choose 3

Abnormal Procedures	Completed/ Notes
Electrical Malfunction	
PFD/ Primary flight instrument malfunction	
Engine Malfunction	
Door Open (IF safe to do so)	
Inadvertent IMC or icing	

Choose 4

Emergency Procedures	Completed/ Notes
Engine Failure on Takeoff	
Engine Failure over Airport	
Engine Failure no Airport	
Engine Fire	
Electrical Fire	
Bird Strike	
Spin Recovery	
Control System Failure	

Completed and Approved by: \_\_\_\_\_

Date: \_\_\_\_\_

Student:  
Instructor:  
Date:

# Nexgen Aircraft Performance Data Worksheet

## WEIGHT AND BALANCE

	Weight	CG Location
Takeoff		
Landing		

## WEATHER AND NOTAMS

TAF	Airport	Time	Winds	Vis.	Clouds	Temp/DP	Altimeter	Remarks

Relevant NOTAMS or weather conditions:

## TAKEOFF/ LANDING PERFORMANCE

Calculate for each:

- New runway you have never landed on before
- Any runway less than 5,000'
- Any airport above 2,000' field elevation

Airport	Runway	TODA	LDA	Pressure Altitude	Wind component	Temp	Slope	Takeoff distance required 50' obstacle	Landing distance required 50' obstacle	% of TO dist. Required	% of LNG dist. Required