Instrument Rating Syllabus

ASEL

Simulator Classroom. Airplane Showroom.

Earning your Instrument Rating will not only open up a whole new world of flying, it will make you a more proficient, safer, and more confident pilot. The simulator is an extremely effective tool that will allow you to learn and practice instrument maneuvers with many different variables over and over. It will also allow you to practice at different airports with different departures, arrivals and approaches that would not be available to you in your local flights. In this syllabus, you will have the opportunity to learn in the simulator before demonstrating your skills in the airplane. After that, you will put it all together from take off to touchdown with a series of cross- countries and review flights for your checkride.

Lesson Format:

Explain: Discuss the task with your instructor
Sim: Practice in the simulator until you meet the standard
Fly: Demonstrate the task in the airplane

How to Use This Syllabus

This syllabus is broken down into four stages. Each stage contains multiple lessons.
Below is an explanation of the components in each lesson.

Prerequisites – Lists the tasks that help form part of the foundation for a new task and therefore should have been introduced and practiced prior to the current lesson.

Home Study – Subject areas that should be read and reviewed prior to the lesson.

Primary Tasks – Maneuvers and tasks that you will practice during the sim and/or flight lessons.

Objective – A short description of the main goal(s) for the lesson.

Description – An explanation of the objectives and tasks for the lesson.

Preflight Discussion – Concepts that you will discuss with your instructor to ensure a full understanding of the tasks and maneuvers.

Ground – The section will present scenarios for discussion with your instructor to help you gain a well-rounded understanding of what you are learning. Some parts of the ground lesson may also be assigned as home study.

Simulator – Guided instruction in the simulator to practice the lesson tasks to proficiency to prepare for the flight in the airplane.

Flight – A suggested format for the flight lesson and the tasks being performed.

Lesson Task and Completion Standards – A list of each new task broken down by components to ensure full understanding of what is being evaluated. Tasks that are being reviewed are also listed with paraphrased completion standards.

Grade Sheets– Fill out a Grade Sheet for each simulator or flight lesson.

The order of the lessons in each stage are not necessary fixed in stone. You and your instructor may choose to perform elements of one lesson before another, as appropriate. Within a stage, lessons and individual tasks may be combined or presented in a different sequence than how it is laid out in this document. For example, Lesson 8, "DME Arcs", might be introduced, combined, and incorporated in to other flight lessons throughout Stage 2.

Learner Centered Grading

You will be asked to assess your own performance on each lesson; this concept of *Learner Centered Grading* allows you to quickly determine if there is any difference in how you and your instructor perceive your progress and how best to customize your training. Your assessments, along with those of your instructor, should be discussed as you complete a grade sheet for each flight.

Grading Standards

An assessment of "Practice" will be given when you practice the task, but have not met the completions standards of the Stage. You will get an assessment of "Perform" when you have met the completion standards established for the Stage of training. You will get an assessment of "Manage/Decide" when you manage the available resources effectively and make sound decisions.

Proficiency Based Training

This syllabus is designed to accommodate your experience level and how fast you learn. You may proficiency advance in all Stages, and you may take the practical test when you have completed all the Phase requirements and met the standards prescribed by the applicable Practical Test Standards.

Grading Scale (Tasks)

Describe (D): Able to describe characteristics and cognitive elements of the task/scenario. Instructor assistance is required.
Explain (E): Describe the task/scenario and understand underlying concepts. Significant instructor effort is required.
Practice (Pr): Plan and execute the task/scenario. Verbal feedback from instructor to correct errors.
Perform (Pe): Perform task/scenario without assistance from CFI.
Not Observed (No): Not accomplished.

Grading Scale (Single Pilot Resource Management)
Explain (E): Needs prompting to identify risks and decisions.
Practice (Pr): Able to identify, understand, and apply SRM principles to the flight situation. The pilot in training is an active decision maker, with minor errors corrected by CFI.
Manage/Decide (Md): Can correctly gather the most important data available to evaluate the risks and make the appropriate decision. CFI intervention is not required for safe completion.
Not Observed (No): Not accomplished.

Home Study Abbreviations

AAH: Advanced Avionics Handbook, FAA-H- 8083-6

IFH: Instrument Flying Handbook, FAA-H-8083-15B

IPH: Instrument Procedures Handbook, FAA-H-8083-16B

FAR: Federal Aviation Regulations

AIM: Aeronautical Information Manual

ACS: Instrument Rating Airman Certification Standards

Maneuvers Guide: Any recommended maneuvers or standardization guide for the airplane you are flying (commercially or individually produced)

Non-Precision and Precision Approach Profiles: Any recommended or standardized approach profile for the airplane you are flying (commercially or individually produced)

Many of these publications are available for free at www.faa.gov/regulations_policies/handbooks_manuals/aviation/.

Course Overview

Stage	Lesson	Student Lesson Name	Tasks	Simulator	Airplane	Ground
1	1	Keep Your Eyes Inside	Introduction to Instruments and the Instrument Scan	2.0	0.5	1.0
	2	Always Trust Your Instruments	Instrument Flight Maneuvers, Pattern A & B	2.0	0	1.0
	3	Never Say Always	Instrument Flight Maneuvers Partial Panel, Pattern A & B	2.0	0	1.0
	4	VOR Navigation	VOR Operation, Orientation, Intercepting and Tracking	2.0	0	1.0
	5	GPS Navigation	GPS Operation, Orientation, Intercepting and Tracking	2.0	0	1.0
	Stage 1 Progress Check - SIMULATOR			1.0	0	1.0
			Stage 1 Minimum Hours	**11.0**	**0.5**	**6.0**
2	6	Going Nowhere Fast- Holds	Holding Procedures, Entries, Wind Correction and Timing	2.0	.5	1.0
	7	DME Arcs	Published and Non-published DME Arcs	2.0	.5	1.0
	8	Non- Precision Approaches	Non- Precision Approaches	2.0	1.0	1.0
	9	Precision Approaches	Precision Approaches	2.0	1.0	1.0
	10	My Friend Otto	Autopilot Operation (If Applicable), Errors and Limitations	2.0	0	1.0
	11	Standard Instrument Departure (SID) and Obstacle Departure Procedures (ODPs)	Departure and Arrival Procedures	2.0	0	1.0
	12	Standard Terminal Arrival Routes (STARs)	Obstacle Departure Procedures	1.0	.5	1.0
	13	Lets Talk Alternates	Standard and Non Standard Alternates, When They are Required, Weather Requirements	1.0	.5	1.0
	14	Can You Hear Me Now?	Lost Comm Requirements	1.0	.5	1.0
	Stage 2 Progress Check – SIMULATOR or AIRPLANE			1.5	1.5	1.5
			Stage 2 Minimum Hours	**16.5**	**6.0**	**10.5**
3	15	Instrument Cross Country	Dual Instrument Cross Country Including Towered and Non-towered Airports with a Published or Unpublished Arc, Diversion and Missed Approach	4.0	2.5	1.0
	16	Instrument Cross Country	Dual Instrument Cross Country Including Towered and Non-towered Airports with a Published or Unpublished Hold, and Circle to Land	4.0	2.5	1.0
	17	Instrument Cross Country	Dual Instrument Cross Country into a Class B Airport with a SID and/or STAR, Lost Comm Procedure	4.0	5.0	1.0
	Stage 3 Progress Check - AIRPLANE			0.0	1.5	1.0
			Stage 3 Minimum Hours	**12.0**	**11.5**	**4.0**
4	18	Checkride Review	Precision and Non-precision Approaches with Missed Approach, Circle to Land, Hold and/or Arc	1.5	1.5	1.0
	19	Checkride Review	Full panel and Partial Panel Precision and Non Precision Approaches with Missed Approach, Procedure Turn, and Circle to Land	1.5	1.5	1.0
	20	Checkride Review	Checkride Prep	1.0	1.0	2.0
	Stage 4 Progress Check - AIRPLANE			0	2.0	2.0
			Stage 4 Minimum Hours	**4.0**	**6.0**	**6.0**
			Course Minimum Hours	**43.5**	**24**	**26.5**

Keep Your Eyes Inside

PREREQUISITES

Private Pilot

HOME STUDY

IFH: Chapters 5, 6 (section II) and 7 (section II)

PRIMARY TASKS

Checklist Use

Preflight

Taxi Check (New)

Instrument Straight & Level Flight (New)

Instrument Climbs and Descents (New)

Instrument Turns (Level, Climbing, & Descending) (New)

OBJECTIVE

Back to the basics! Preflights and taxi checks have always been important, but now that you will be relying solely on instruments you will need to understand your systems and add a few more checks to your checklist. In flight, you will focus on how to control the airplane by the instruments.

DESCRIPTION

This lesson is all about pitch and power. Instrument flight is very precise, and by setting an exact pitch attitude and corresponding power setting you can expertly configure the aircraft in any phase of flight to your desired rate or airspeed. Additionally you will practice standard rate turns using time to roll out on an exact heading.

PREFLIGHT DISCUSSION

Develop and demonstrate an understanding of characteristics associated with these tasks:

- Preflight: Test the pitot tube heat and discuss when it should be used. What other equipment is required for instrument flight?
- Taxiing: Instrument taxi check and before take off review, Airport markings- ILS critical area
- Straight & Level Flight: Instrument scan for level flight
- Climbs & Descents: Instrument scan for climbs and descents Appropriate pitch, power and bank settings.
- Turns (Level, Climbing & Descending): Instrument scan for a turn, Appropriate pitch, power and bank settings

GROUND

With your instructor, discuss the different types of instruments on board.

1. Which instruments use the pitot- static system? How does the system operate? What errors could occur?
2. What properties do gyros use to operate? Which instruments use rigidity in space, and which use precession? What is the difference between the two and how many gimbals do they have? Which ones are electrically driven and which are vacuum?
3. How does a compass work and what are its errors?
4. What are the differences between Indicated Airspeed, True Airspeed, and Groundspeed?

SIMULATOR

1. (Dual) Redbird Flight IR #1

You are going to practice basic flight maneuvers in the simulator. These include straight and level flight, turns, climbs, and descents. Finally, you'll try a few, more complex maneuvers, including climbing turns and descending turns.

2. (Solo)

Using the table you filled out with your instructor below, practice your instrument scan, and setting pitch and power settings for each phase of flight. While you can always use the table as a cheat sheet, you should be familiar with each setting by the end of the flight.

* Flap and airspeeds are suggestions only, use aircraft suggested descent speed and flap settings.

3. GIFT Module

Perform Steep Turn module and Slow Flight module until you consistently earn a passing score.

	Power Setting	Attitude Indicator	Configuration	Airspeed
Climb Vy			No Flaps	
Cruise Climb			No Flaps	
Level	Cruise:		No Flaps	120 kt*
Level			No Flaps	110 kt*
Level			10° Flaps *	100 kt*
500 FPM Descent			10° Flaps *	
600 FPM Descent			10° Flaps *	
800 FPM Descent			10° Flaps *	
1000 FPM Descent			10° Flaps *	

(Flight portion continued on the next page)

FLIGHT

Takeoff and depart from your home airport to the local practice area to practice instrument straight and level flight, climbs, descents, and turns. Repeat filling the table in the simulator portion for your airplane.

Departure	**Enroute/Practice Area**	**Return**
Brief the elements of an instrument take off brief and what to do in an emergency. Perform an instrument taxi check, normal take off and climb	Your instructor will provide an introduction and demonstration of how to scan your instruments for straight and level flight, turn to a heading, and climb and descend. You will set pitch and power settings for different phases of flight and note where exactly the pitch attitude, rate of climb/descents and airspeeds are on the instruments. You will then get to perform those maneuvers with assistance and guidance.	Using your new skills and knowledge you will practice using instrument navigation, and instrument scan to fly and navigate back to the airport.

Lesson Tasks and Completion Standards

Task	Element	Completion Standards
Checklists	Perform all checklists appropriate for the flight	Perform
	Taxi Checklist – introduce instrument check, verify clock on board in hours, minutes, seconds and check OAT to determine if pitot heat will be requires.	Practice
	Before Take off Checklist- Brief instrument departure, rate of climb required, emergency brief	Practice
Planning and Preflight	Obtain Weather Data, Performance Numbers and Weight & Balance- Discuss icing charts, NOTAMS pertinent to instrument flight	Practice
	Preflight to determine airworthy for instrument flight	Practice
Basic Airmanship	Exercising PIC authority in control of the aircraft, situational awareness and communication	Practice
Straight and Level Flight	Use attitude indicator to set level flight, cross check with altimeter, airspeed and vertical speed (+/- 150 ft)	Practice
	Appropriate pitch and power settings for airplane for various cruise speeds	Practice
	Use of trim in straight and level flight to relieve control pressures.	Perform
Turns	Use attitude indicator to set a bank and slightly nose up pitch attitude, and turn rate indicator to establish standard rate turns to a heading,	Practice
	Use heading indicator to roll out on precise heading (+/- 10 deg)	Practice
	Cross check with altimeter, vertical speed, and airspeed indicator to maintain level turn	Practice
	Practice using timed turns to roll out on a precise heading in a standard rate turn (+/- 15 deg)	Practice
Climbs	Set pitch and power for VY climb	Practice
	Set pitch and power for 600 FPM climb- note airspeed (Repeat with 700, 800, 900, 1000)	Practice
	Level off at assigned altitude +/- 150 feet; heading +/- 15 and airspeed +/- 105knots.	Practice
Descents	Set pitch and power for 300 FPM descent at 110 kt (may vary by aircraft)	Practice
	Set pitch and power for 400 FPM descent at 110kt (repeat 500, 600… -1000)	Practice
	Set pitch and power for 300-1000 FPM descent at 100 kt WITH 10 degrees flaps (speed and flap settings could vary by aircraft)	Practice
	Level off at assigned altitude +/- 150 feet; heading +/- 15 and airspeed +/- 105knots.	Practice
Climbing Turns	Level off at assigned altitude +/- 150 feet; heading +/- 15 and airspeed +/- 15 knots.	Practice
Descending Turns	Level off at assigned altitude +/- 150 feet; heading +/- 15 and airspeed +/- 15 knots.	Practice
Navigation	Practice intercepting and tracking a radial in or to the practice area	Practice
	Practice GPS direct to back to the airport	Practice
Risk Management	Identify, assess and mitigate risks encompassing: • The hazards of not performing an instrument cockpit check • Flying IMC in near freezing temperatures • Paying particular attention to NOTAMS that could change an IFR route or approach	Practice

Always Trust Your Instruments

PREREQUISITES

Instrument Straight & Level Flight

Instrument Climbs & Descents

Instrument Standard Rate Turns

HOME STUDY

IFH 10-2 through 10-5

IFH 1-27

IPH 1-14

AIM 4-4-3

AIM 4-4-7

PRIMARY TASKS

Instrument Straight & Level Flight

Instrument Turns

Instrument Climbs & Descents

Instrument Climbing Turns

Instrument Descending Turns

Pattern A (New)

Pattern B (New)

Vertical S (New)

Unusual Attitudes (New)

OBJECTIVE

The objective of this lesson is to learn to trust your instruments, practice your scan and build on the foundations of basic flight from the last lesson to practice more complex maneuvers

DESCRIPTION

You will now be introduced to Pattern A and Pattern B and Vertical S maneuvers where you will implement the pitch and power settings from the last lesson, perfect your scan all while juggling reading your chart and watching the clock for when to start and stop your standard rate turns. You will also learn how to recover from unusual attitudes in the event that you become disoriented. It's a balancing act that will help prepare you for the busyness of instrument flight

PREFLIGHT DISCUSSION

Develop and demonstrate an understanding of characteristics associated with these tasks:

- Climbs/ descents: Setting an exact pitch attitude and power setting for the rate and airspeed desired, with and without flaps
- Turns: Discuss standard rate turns and what affects them, what instrument to use to set a standard rate turn. Practice rolling in and out on a specific heading based on time

GROUND

You and a friend need to take the plane to its maintenance facility at a near by airport for a 100 hour but the ceilings are too low for VFR flight

1. What must the weather be for an airport to be considered IFR
2. How do you fill out an IFR flight plan
3. What is a clearance and how do you write it down? Read it back? (CRAFT)
4. How can you pick up a clearance at a towered airport? Non- towered airport?
5. When is an alternate required for the destination airport
6. What are the fuel requirements when planning an IFR flight? What if an alternate is required?

SIMULATOR

1. (Dual) Redbird Flight 2

Takeoff and depart from KDHN to introduce and practice Pattern A and B and Vertical S maneuvers.

2. (Solo)

Practice Pattern A & B until they are at the Perform level for your next lesson.

3. GIFT Module

Practice Pattern A module until you consistently earn an overall score of 70% or higher, then practice and master Pattern B.

Lesson Tasks and Completion Standards

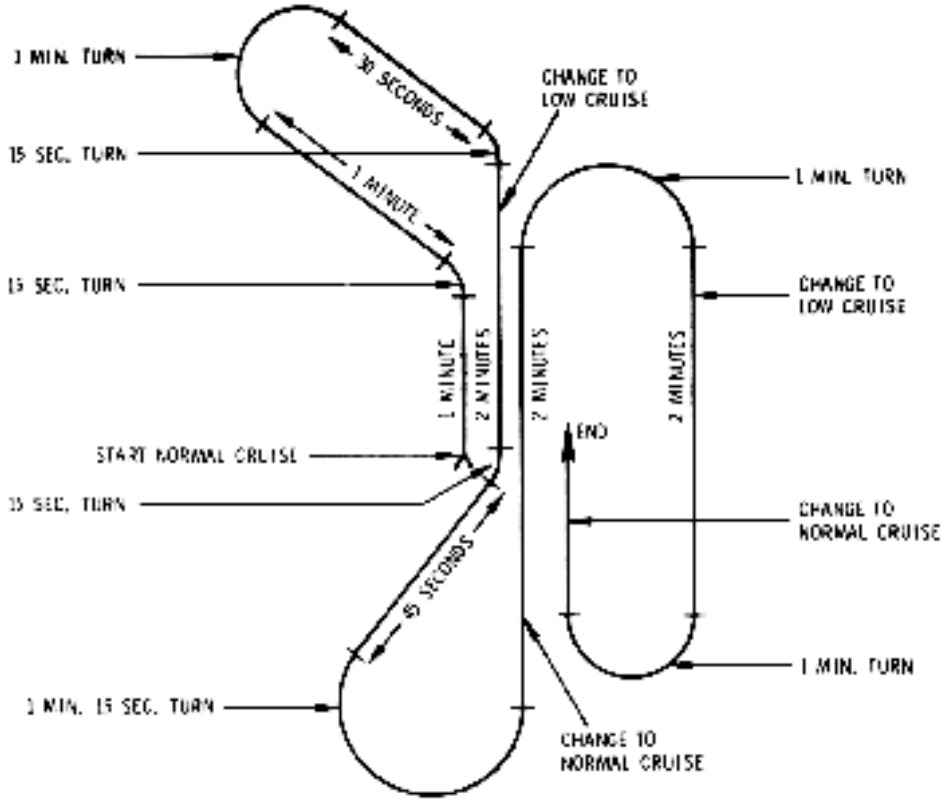
Review		
Task	**Element**	**Completion Standards**
Checklists	Perform all checklists appropriate for the flight	**Perform**
Preflight & Planning	Instrument Check	Practice
Taxiing	Before Take off Checklist- Brief instrument departure, rate of climb required, emergency brief	Practice
Planning and Preflight	Obtain Weather Data, Performance Numbers and Weight & Balance and NOTAMs	Practice
Basic Airmanship	Exercising PIC authority in control of the aircraft, situational awareness and communication	Practice
Straight and Level Flight	Use attitude indicator to set level flight, cross check with altimeter, airspeed and vertical speed (+/- 150 ft)	Practice
	Use of trim in straight and level flight to relive control pressures.	Practice

New		
Task	**Element**	**Completion Standards**
Departure	Write down and read back simulate instrument clearance	Practice
	Brief Departure, rate of climb requirements, emergency brief	Practice
Pattern A & B	Clear the area with a clearing turn- verbally verify with your instructor	Practice
	Using appropriate pitch and power settings, clock and instrument scan technique practice Pattern A & B, altitude +/- 150 feet; heading +/- 15 and airspeed +/- 15 knots.	Practice
Vertical S	Set pitch and power for VY climb	Practice
	Level off at assigned altitude +/- 150 feet; heading +/- 15 and airspeed +/- 15 knots.	Practice
	Set pitch and power for designated rate of descent at designated airspeed	Practice
	Level off at assigned altitude +/- 150 feet; heading +/- 15 and airspeed +/- 15 knots.	Practice
Unusual Attitudes	Use proper instrument cross check to identify an unusual attitude	Practice
	Apply appropriate pitch, bank, and power corrections in correct sequence for recovery	Practice
Arrival	Descend and perform checklists under the hood for as long as practical	Practice
	Using GPS and/or NAVAIDs, navigate toward the airport	Practice
Risk Management	Identify, assess and mitigate risks encompassing: • Situations that could lead to loss of control or unusual flight attitudes (e.g., stress, task saturation, and distractions). • Instrument scan to divide attention between aircraft control and orientation • Situational awareness using GPS and NAVAIDs • Cockpit Management • Task Management	Practice

Pattern "A"

The purpose of both Pattern "A" and Pattern "B" is to further develop the pilot's ability to control the aircraft without deliberate thought. These patterns help prepare the student for the holding patterns and procedure turns he will fly during radio navigation. Initial practice should be on cardinal headings for simplification; however, as proficiency increases the student should be able to accomplish the patterns on any heading. The instructor may make various changes in the patterns, or, the patterns may be flown over a navigational facility, correcting for drift on each leg.

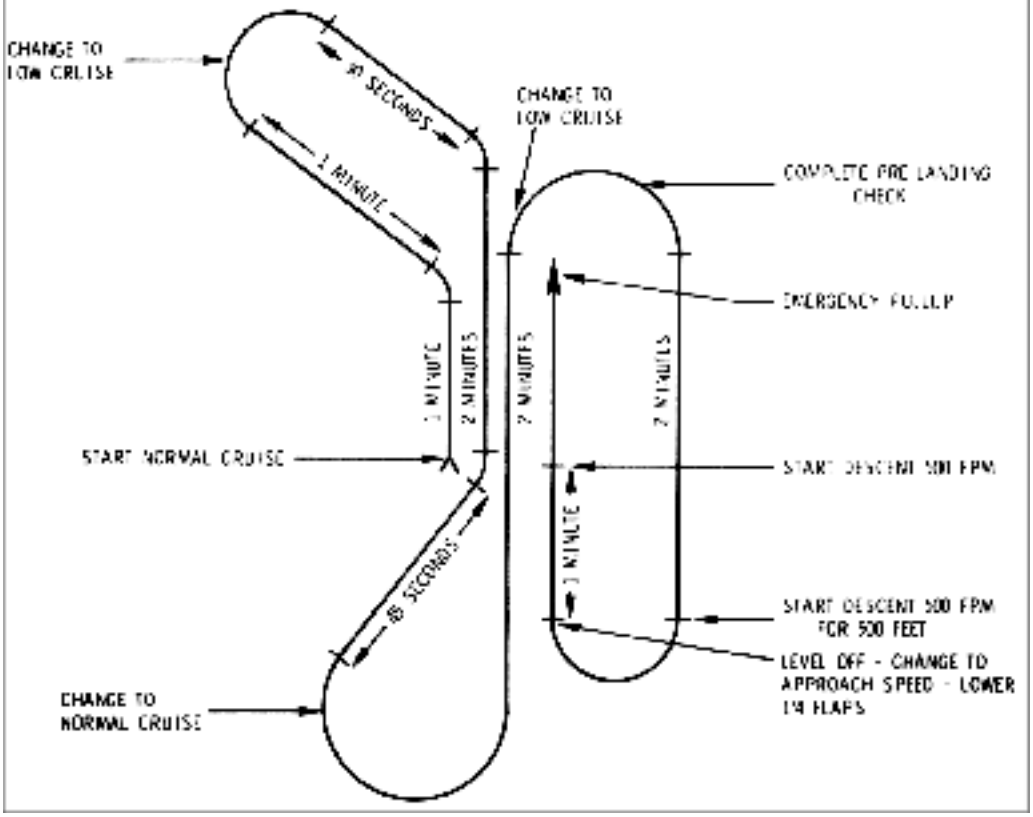
1. *Brief Student Thoroughly Prior to the Flight*
2. *Performance of Maneuver in the Aircraft*
   a. This maneuver should be performed first with all available instruments, then on partial panel.
   b. Start Pattern "A" and demonstrate through the first three turns, then have the student continue.
   c. Timing should start when the clock second hand is on a cardinal point, preferably the 12 o'clock position.
   d. The timing for this pattern is consecutive in that the time for each leg is started when control pressure is applied to recover from the preceding turn.
   e. After recovery from turns, allow sufficient time for the compass card to stop oscillating, then note the heading and correct if necessary. An exception is the 30-second leg. If you note an error in heading here, compensate for it by lengthening or shortening the time allotted for the next turn.



   f. The turn coordinator and magnetic compass must be observed closely at all times. To correct a heading, use a timed turn (for small heading changes, use a half-standard rate turn).
   g. An efficient cross-check is required during airspeed changes so that corrections may be applied immediately.

Pattern "B"

1. *Brief Student Thoroughly Prior to the Flight*
2. *Performance of Maneuver in the Aircraft*
   a. Do not demonstrate unless absolutely necessary.
   b. All available instruments are used.
   c. Roll out on headings regardless of time.
   d. When changing airspeed in turns, *simultaneously* change bank and power, also pitch if applicable.
   e. The descending final turn is made at an absolute rate.
   f. The final descent is made to a minimum altitude set by the instructor, or until the time expires, whichever comes first.
   g. The emergency pull-up is made as a normal go-around procedure, climbing to the original altitude.



Vertical S

Climb 1000', Descend 1000'

Climb 800', Descend 800'

Climb 600', Descend 600'…

(Instructor will designate rate or airspeed for climbs and descents)

Never Say Always

PREREQUISITES

Checklist Usage

Instrument Straight & Level Flight

Instrument Climbs & Descents

Instrument Turns

HOME STUDY

IFH 7-36 Partial Panel Flight

FAR 61.57

AAH: Chapter 2

PRIMARY TASKS

Instrument straight and level flight

Instrument Climbs, Descents and Turns

Partial Panel Straight and Level Flight (New)

Partial Panel Climbs and Descents (New)

Partial Panel Level Turns (New)

Systems Troubleshoot (New)

OBJECTIVE

The dreaded partial panel. You are going to learn how to fly safely in the event that one or more of your instruments fail while maintaining the same ACS standards that you would full panel.

DESCRIPTION

Now that you have mastered the full panel scan it is time to learn the partial panel scan. You will learn what will happen to your instruments when certain systems fail, how to interpret them to discern which ones have failed and how to continue a safe flight with your new partial panel scan. (Hint: SMALL corrections!!!)

PREFLIGHT DISCUSSION

- Pitot Static Errors: What are the possible errors and how does it affect each instrument
- AHRS Failure: What instruments are inoperative
- ADC Failure: What instruments are inoperative
- Vacuum System and Electrical System failures: What instruments are inoperative
- Partial Panel Scan
- When and how to declare an emergency

GROUND

It's a crisp fall rainy day, and while everyone else is home raking leaves and sipping pumpkin spice lattes you decide to take a friend up for some approaches so you can maintain your instrument currency. Everything is going smoothly till suddenly your airspeed seems to be increasing and ATC queries you about your altitude "N39QA confirm altitude 3000?". You check and your altitude reads 3000 but for this power setting your airspeed is way too fast! You raise the nose but even though your airspeed begins to slow down the altimeter doesn't change. What's going on??

1. What system is inoperative? What would you do first?
2. What do you need in order to maintain instrument currency? How long does it last?
3. If it lapses, what can you do (in the next 6 months?)
4. After 12 months what can you do to get your instrument currency back? Who can do this with you?

SIMULATOR

1. (Dual) Redbird Flight 3:

You and a friend are planning to hike Mt. Rainier in Washington. You depart from your hometown in Hoquiam (KHQM) to Olympia (KOLM) where you plan on meeting up and driving the rest of the way. Ceilings are 1200 feet and you are a newly minted instrument rated pilot so you happily file an IFR flight plan to your destination. You plan on departing RWY 06 since winds are 050@8. Visibility 4 SM

Departure	Enroute/Practice Area	Return
• Make all appropriate non-towered airport advisory calls • Obtain a clearance via FSS • Depart Rwy 06 • Fly the Obstacle Departure Procedure (climbing right turn to heading 110) then intercept V204 to Docra at 5000 ft • With your instructors help fill out an IFR flight plan and practice filing it	Once on the Victor Airway, your instructor will simulate an instrument failure, continue flying IMC while requesting ATC help to get you to VMC and land at your destination. Depending on traffic they may have you fly Pattern A or Pattern B for spacing.	ATC can finally descend you lower into VMC so you can arrive at your destination safely. Hope they have a maintenance facility there!

2. (Solo)

Practice Pattern A and B Partial Panel until at the Perform level

3. GIFT Module

Practice Pattern A Partial Panel until you consistently earn an overall score of 70%, then practice Pattern B to mastery.

Lesson Tasks and Completion Standards

Review		
Task	**Element**	**Completion Standards**
Checklists	Perform all checklists appropriate for the flight	**Perform**
Preflight & Planning	Instrument Check	**Perform**
Taxiing	Before Take off Checklist- Brief instrument departure, rate of climb required, emergency brief	**Perform**
Planning and Preflight	Obtain Weather Data, Performance Numbers and Weight & Balance and NOTAMs	**Perform**
Basic Airmanship	Exercising PIC authority in control of the aircraft, situational awareness and communication	**Perform**
Straight and Level Flight	Use attitude indicator to set level flight, cross check with altimeter, airspeed and vertical speed (+/- 150 ft)	**Perform**
	Use of trim in straight and level flight to relieve control pressures.	**Perform**

New		
Task	**Element**	**Completion Standards**
Partial Panel Straight and Level	Perform clearing turn before any maneuvers. Verify with instructor the area is clear.	**Perform**
	Simulate an emergency radio call to ATC when instructor fails instruments.	Practice
	Partial panel scan	Practice
	Altitude +/- 200 ft, heading +/- 15 deg, airspeed +/- 15 kts	Practice
Partial Panel Climbs and Descents	Set pitch and power setting for approximate 500 fpm climb (based on full panel settings)	Practice
	Level off at selected altitude +/- 200 ft, airspeed +/- 15 kts	Practice
	Set pitch and power for Vy Climb, note exact pitch attitude on standby attitude indicator	Practice
	Set pitch and power setting for approximate 500 fpm descent at designated airspeed +/- 15 kt	Practice
Partial Panel Turns	Level Turns altitude+/- 200 ft, heading +/- 15 deg, airspeed +/- 15 kt	Practice
	Climbing and Descending Turns, Level off at altitude +/- 200 ft, heading +/- 20 deg, airspeed +/- 10 kt	Practice
	Use the clock and compass for timed and compass turns, roll onto headings +/- 15 deg	Practice
	*Bonus- discuss no gyro approaches and simulate following no-gyro ATC instructions with your instructor	Practice
Partial Panel Pattern A & B	With your instructors assistance, put it all together by practicing Pattern A or B partial panel. Altitude +/- 200 ft, Heading +/- 15 degrees, +/- 15 kts	Practice
Risk Management	Identify, assess, and mitigate risks encompassing: • Flying into precipitation at freezing temperatures and known icing • Systems failure and troubleshooting	Practice

VOR Navigation

PREREQUISITES

Instrument Straight & Level

Instrument Climbs and Descents

Instrument Standard Rate Turns

HOME STUDY

IFH: 9-8 through 9-18

FAR 91.171

AIM 1-1-3 through 1-1-8

PRIMARY TASKS

VOR check (New)

Tune and Identify VOR (New)

Intercept and Track VOR radials (New)

Navigate to VOR waypoints (New)

OBJECTIVE

Once upon a time, before WAAS, before GPS, (but after LORAN) there was the VHF Omnidirectional Range (VOR). Even though today we have more precise and easy to use navigation systems, VORs are an integral part to the navigation database and are still widely used today. You will learn how VORs work, situational awareness, how to track VOR radials, intercept, and find VOR waypoints.

DESCRIPTION

VORs are a key part of instrument navigation; without ever looking at the ground you can know exactly where you are and they are used from Departures to Approaches and everything in between. VORs that are paired with Distance Measuring Equipment (DME) can give you an even more precise location. By understanding how VORs work and how to read your instruments you will be equipped with the skills to navigate IMC even without your pretty pink line.

PREFLIGHT DISCUSSION

Develop and demonstrate an understanding of characteristics associated with these new tasks:

- VOR situational awareness- using the VOR to know where you are in relation to it
- Tracking and intercepting VOR radials
- Using dual VORS and VOR/DME to find an exact point or intersection

Your Best Friend is getting married! You are the best man/maid of honor and have organized an epic weekend in Vegas for the wedding party. You are departing KVNY and arriving at KHND just in time for the festivities and your friends are more than happy to beat the weekend traffic in to the hot Vegas Desert but the update for your GPS corrupted the receiver and now you are no longer receiving GPS signal.

- VOR: How does it operate?
- Differences between VOR, VOR/DME and VORTAC?
- What are the 3 different service volumes for VORs?
- What is HIWAS – how can you find it?
- How to perform a VOR check and what the limits are, and how to log the result?

SIMULATOR

1. (Dual) Redbird Flight 4:

KVNY – KHND using departure and victor airways
Ceilings: broken at 1500, Winds: 150@5, Visibility: 3 SM

Departure	Enroute/Practice Area	Return
Depart from RWY 16R at KVNY. Follow the NUAL9.PMD SID (No GPS overlay)	(For more practice simulate return to VNY before reaching PMD- vector onto the STAR)	KVNY via PMD.LYNXX8 STAR

2. (Solo)

Come up with a plan with your instructor to practice what you learned today

Lesson Tasks and Completion Standards

Review		
Task	**Element**	**Completion Standards**
Checklists	Perform all checklists appropriate for the flight	**Perform**
Preflight & Planning	Instrument Check	**Perform**
Taxiing	Before Take off Checklist- Brief instrument departure, rate of climb required, emergency brief	**Perform**
Planning and Preflight	Obtain Weather Data, Performance Numbers and Weight & Balance and NOTAMs	**Perform**
Basic Airmanship	Exercising PIC authority in control of the aircraft, situational awareness and communication	**Perform**
Instrument Straight and Level Flight	Use attitude indicator to set level flight, cross check with altimeter, airspeed and vertical speed (+/- 150 ft)	**Perform**
	Use of trim in straight and level flight to relieve control pressures.	**Perform**
Instrument Climbs and Descents	Set proper pitch and power for appropriate rate of climb/ descent	**Perform**
	Level off altitude +/- 150 ft, airspeed +/- 15 kt, heading +/- 15 degrees	**Perform**
Instrument Turns	Set proper bank and pitch for level, coordinated, standard rate turns.	**Perform**
	Roll out heading +/- 15 degrees, altitude +/- 150 ft, airspeed +/- 15 kt	**Perform**

New		
Task	**Element**	**Completion Standards**
Communications	Towered and Non- Towered Operations- Receiving and following an IFR clearance	Practice
VOR Use & Navigation	Tune and Identify VOR frequency	**Perform**
	Intercept and track a given course, radial, or bearing, as appropriate.	**Perform**
	Recognize and describe the indication of station passage, if appropriate.	**Perform**
	Navigate to a waypoint using VOR/DME	Practice
	Navigate to a waypoint using 2 crossing radials	Practice
	Recognize signal loss and take appropriate action.	Practice
	Situational awareness via the VOR	Practice
	Create user waypoint using VOR/DME or Crossing VORs	Practice
Risk Management	Identify, assess, and mitigate risks encompassing: • Verifying NAVAID frequency and course • Situational awareness with reference to instruments only	Practice

RNAV

PREREQUISITES

Instrument Straight & Level

Instrument Climbs & Descents

Instrument Turns to a Heading

HOME STUDY

AIM 1-1-17, 1-1-18, 1-2-1

IPH 1-33

IPH 2-25 through 2-26

IFH 9-31

PRIMARY TASKS

Flight Plan (New)

Direct To (New)

Intercepting a GPS track (New)

VNAV Direct (New)

VNAV offset (New)

Check RAIM (in the air and on the ground) (New)

Database Currency Check (New)

OBJECTIVE

In this lesson you will learn about Area Navigation (RNAV), what systems it encompasses and how to use it for navigation. You will discuss how it operates, learn what errors could happen and how to verify that it is fully functional, and what your avionics will do if it receives a corrupted signal.

DESCRIPTION

Navigation is more precise and reliable than ever before thanks to satellites. The most common RNAV systems in the United States is Global Positioning System (GPS) which can also incude Wide Area Augmentation System (WAAS). Not only can they provide lateral navigation but they can also provide vertical navigation and can perform many functions- their only limit is pilot proficiency. The more you understand how these systems and your avionics work the more you can lighten pilot workload and improve Single Resource Management (SRM).

PREFLIGHT DISCUSSION

Develop and demonstrate an understanding of characteristics associated with these new tasks:

- How does RAIM work and where can you check it
- How often GPS databases must be updated for IFR flight
- Discuss how to load a flight plan
- What functions the GPS can do to aid pilots- Direct to, VNAV Direct, VNAV offset
- How to determine if a GPS unit installed in the airplane is IFR certified

2. What are random RNAV route rules?
3. What is GPS?
    a. How many satellites are part of the GPS constellation?
    b. How many are needed to determine your position?
    c. What is RAIM? How do you check it?
    d. What is WAAS?
4. What is an RNP approach? Who can use them?

SIMULATOR

1. (Dual) Redbird Flight 5:

Your sister recently became a tour guide at the Smithsonian Air and Space museum. You offer to help her move out of her dorm at the University of Richmond KRIC to her new apartment near 2W6 before ~~using her employee discount to stock up on space ice cream~~ getting a personal tour of the museum.

Winds 270@8, Ceilings 2200, Visibility 5 SM

Departure	**Enroute/Practice Area**	**Arrival**
Depart from KRIC RWY 25, climb via LUCYL5 departure. Climb to 5000 ft.	Practice proceeding direct to destination, then resuming the flight plan, and different VNAV functions	With your instructors assistance fly RNAV 29

2. (Solo)

Come up with a plan with your instructor to practice what you learned today

Lesson Tasks and Completion Standards

Review		
Task	**Element**	**Completion Standards**
Checklists	Perform all checklists appropriate for the flight	**Perform**
Preflight & Planning	Instrument Check	**Perform**
Taxiing	Before Take off Checklist- Brief instrument departure, rate of climb required, emergency brief	**Perform**
Planning and Preflight	Obtain Weather Data, Performance Numbers and Weight & Balance & NOTAMS	**Perform**
Basic Airmanship	Exercising PIC authority in control of the aircraft, situational awareness and communication	**Perform**
Instrument Straight and Level Flight	Use attitude indicator to set level flight, cross check with altimeter, airspeed and vertical speed (+/- 150 ft)	**Perform**
	Use of trim in straight and level flight to relieve control pressures.	**Perform**
Instrument Climbs and Descents	Set proper pitch and power for appropriate rate of climb/ descent	**Perform**
	Level off altitude +/- 150 ft, airspeed +/- 15 kt, heading +/- 15 degrees	**Perform**
Instrument Turns	Set proper bank and pitch for level, coordinated, standard rate turns.	**Perform**
	Roll out heading +/- 15 degrees, altitude +/- 150 ft, airspeed +/- 15 kt	**Perform**
Communications	Towered and Non- Towered Operations- Receiving and following an IFR clearance	Practice

New		
Task	**Element**	**Completion Standards**
GPS Use & Navigation	Load a flight plan using departures/arrivals, waypoints and airways	Practice
	Proceed direct to waypoint, then resume flight plan	Practice
	Demonstrate how to create a user waypoint	Practice
	Create a VNAV direct path to a waypoint, then adjust the descent rate	Practice
	Create a VNAV offset to descend a certain distance before a waypoint	Practice
	Load and activate an approach via an initial fix	Practice
	Load and activate an approach via vectors to final	Practice
Risk Management	Identify, assess, and mitigate risks encompassing: • GPS Signal loss • RAIM • Automation confusion/errors	Practice

Stage 1 Grade Sheet

D	E	Pr	Pe	No	**Preflight Prep**
					Weather Information & NOTAMS
					Pilot Qualifications
					Airworthiness
					Performance & Limitations
					Operation of Systems

D	E	Pr	Pe	No	**Preflight/Postflight Procedures**
					Preflight Assessment
					Engine Starting
					Taxiing
					Parking and Securing
					Use of Checklists & Cockpit Management
					Compliance with Clearances

D	E	Pr	Pe	No	**Basic Airmanship**
					Normal & Cross Wind Takeoffs
					Normal & Cross Wind Landings
					Go -Arounds
					Equipment Malfunction

D	E	Pr	PE	No	**Navigation**
					Basic Use of GPS
					Basic Use of NAVAIDs
					IFR Enroute Chart

D	E	Pr	Pe	No	**Basic Instrument Fundamentals**
					Instrument Cockpit Check
					Straight and Level Flight
					Change of Airspeed
					Constant Airspeed Climb/ Descent
					Constant Rate Climb/Descent
					Timed Turns to Magnetic Headings
					Recovery From Unusual Attitudes
					Intercepting and Tracking Courses
					Vertical S Maneuvers
					Departure Procedures
					Arrival Procedures

D	E	Pr	Md	No	**Resource/Risk Management**
					Decision Making
					Risk Management
					Situational Awareness
					Resource Management
					Automation Management

D	E	Pr	Pe	No	**Additional Items**

Date: _____ Lesson(s): _____ Make Model: _____ N#: _____

Profile/Route: _____

	Total	Instruction Received	Day TO/Lndgs.	PIC	XC Instruct. Received	XC Solo/PIC	Simulated Instrument	Instrument	Night Instruct. Rcvd.	Night TO/Lndgs.	Night PIC
Airplanes											
ATD											

I certify I have received/performed the training indicated above.

Customer: _____ Date: _____

Instructor: _____ Date: _____

Grade Sheet key and explanations can be found at the beginning of this syllabus.

D: Describe E: Explain Pr: Practice Pe: Perform No: Not Observed
Md: Manage/Decide (Resource/Risk Management)

STAGE CHECK 1 – SIMULATOR

PHASE 2	INSTRUMENT AIRPLANE
STAGE 1	**FUNDAMENTALS OF INSTRUMENT FLIGHT**
Prereq.	You must have successfully practiced and been introduced to all tasks for this stage (lesson 1-5). You must demonstrate proficiency on tasks lists below prior to your Stage 1 Check.
Objective	Demonstrate proficiency in basic instrument flight tasks by reference to your instruments.
Scenario	In the simulator, you will perform a short flight given to you by your evaluator. Prior to the evaluation, you will calculate weight and balance for yourself and the evaluator in an assigned aircraft. Obtain weather information for the day of the stage check.

GROUND EVALUATION [1 HR]

Completion Standards: Demonstrates satisfactory knowledge and basic understanding of the topics and tasks listed below. (S=satisfactory; U=unsatisfactory)

S	U	Preflight Planning	S	U	Instrument Systems
		Obtaining Weather Information			Pitot- Static Instrument System
		Computing Weight & Balance			Gyroscopic/ electric/ vacuum instrument system
		Familiarity with Instrument Charts			Electrical systems
		Obtaining NOTAMs/ TFRs			Magnetic Compass
		IFR airworthiness			
			S	U	**Navigation Systems**
S	**U**	**Special Emphasis Areas**			VOR, DME systems
		CFIT			RNAV, GPS, WAAS systems
		Runway Incursion Avoidance			
		Collision Avoidance	S	U	**Unusual Attitudes**
					Procedures for recovery
					Causal factors: physiological, system and equipment failures, environmental

AATD EVALUATION [1 HR]

Completion Standards: Maintain altitude within 150 feet, airspeed within 15 knots and heading within 15 degrees, with minimal assistance from the evaluator. (S=satisfactory; U=unsatisfactory)

S	U	General	S	U	Area of Operations
		Use of Checklists			Straight & Level Instrument Flight
		Instrument Cockpit Check			Vy Instrument Climb
		Read Back and Comply IFR Clearance			Instrument Descents at various rates, airspeeds and configurations
					Standard Rate Turns to a heading
S	**U**	**Navigation**			Unusual Attitudes
		VOR Navigation			Partial Panel Straight & Level, Turns, Climbs & Descents
		GPS Navigation and Familiarization			

Going Nowhere Fast - Holds

PREREQUISITES

Basic Instrument Airmanship

Timed Turns to a Heading

VOR Navigation

GPS Navigation

HOME STUDY

IPH 3-21

IFH 10-10 through 10-13

AIM 5-3-8 through 5-3-21

5-3-3 (f) (g)

4-4-3 (e)

PRIMARY TASKS

Instrument Straight and Level

Instrument Standard Rate Turns

Instrument Turns to Heading

ATC Communications (New)

Hold Clearance (New)

Entry/ Exit Reports (New)

Understanding the Hold (New)

Hold Entries (New)

Flying the Hold (New)

OBJECTIVE

Holds are an important part of Instrument flight when either the pilot or Air Traffic Control (ATC) needs extra time and/or space. You will learn what a hold is, how to enter it, and how to use time and wind correction to execute the perfectly timed, accurate hold.

DESCRIPTION

A hold is a specified area in which the pilot is safe from obstacles and can remain in a pattern while awaiting further instruction. They can be used in missed approaches, waiting out weather, aircraft spacing, course reversal and much more. Holds and Procedure Turns can be published (depicted on a chart) or unpublished. It is crucial to have good orientation to understand the hold and how to enter it. Timing and wind correction will keep the pilot within the safe boundary of the hold.

PREFLIGHT DISCUSSION

Develop and demonstrate an understanding of characteristics associated with these new tasks:

- Components of a Hold: terminology
- Standard Holds: length, direction of turns, clearances and how to draw an unpublished hold
- Entries: The different entries and how to fly them
- Wind Correction (headwind/tailwind): How to adjust outbound leg time depending on headwind/ tailwind component to estimate a 1 minute inbound leg
- Wind Correction (Crosswind): How to adjust crosswind on outbound leg to compensate for the turns
- ATC reports: What to say when entering and exiting the hold

GROUND

- What is the difference between a standard and a non- standard holding pattern?
- When should a pilot begin timing for the outbound leg during a holding pattern over a VOR? What about an intersection defined by two VOR radials?
- What is the difference between a timed hold and a DME hold?
- Draw out these holds and entries:
    - You are due west of the ABC VOR flying east on the 270 radial at 10 DME when you receive your instructions. How do you enter the following holds?
    - Hold North East on the 030 radial of ABC VOR, non- standard turns
    - Hold South on the 10 DME fix of the ABC VOR, standard turns

SIMULATOR

1. (Dual) Redbird Flight 6:

Your quirky van-living buddy is driving up the coast of California and invites you to fly up to Eureka to hike through the Redwood forest. It's the middle of June and the June gloom has rolled in full force. You are on the last stretch of your journey after grabbing some fuel at KUKI and you grab your clearance for KACV. Winds are out of the northwest so you plan on flying the ILS 32. The two planes ahead of you could not get in but it was very close so they are trying again, in the meantime ATC requests you hold at VOMAC. (Your instructor will decide if you can make it in, or if you will proceed missed to hold at FOT)

Winds 300@12, Ceilings Broken 800, Visibility 4 SM

Departure	**Enroute/Practice Area**	**Arrival**
KUKI rwy 33, Your instructor will guide you through Take Off Minimums and Departure Procedures	V607, ACV, Climb and Maintain 10,000	Fly ILS 32, plan on flying 1 or more of the published holds

2. (Solo)

Come up with a plan with your instructor to practice what you learned today.

3. GIFT Module

Perform Holds module using Direct, Teardrop, and Parallel entry methods until you consistently earn a passing score.

Perform Holds module with Winds option selected until you consistently earn a passing score.

(Flight portion continued on the next page)

FLIGHT

Conduct a flight in your local practice area. Plan a flight to another airport ~30 miles away,

Departure	Enroute/Practice Area	Return
Normal takeoff and climb	if IFR ask ATC for an unpublished hold, if VFR practice your own, go missed at destination and fly the published hold	Fly an approach with a procedure turn

Lesson Tasks and Completion Standards

Review		
Task	**Element**	**Completion Standards**
Checklists	Perform all checklists appropriate for the flight	**Perform**
Preflight & Planning	Instrument Check	**Perform**
Taxiing	Before Take off Checklist- Brief instrument departure, rate of climb required, emergency brief	**Perform**
Planning and Preflight	Obtain Weather Data, Performance Numbers and Weight & Balance, NOTAMS	**Perform**
Basic Airmanship	Exercising PIC authority in control of the aircraft, situational awareness and communication	**Perform**
Instrument Straight and Level Flight	Use attitude indicator to set level flight, cross check with altimeter, airspeed and vertical speed (+/- 100 ft)	**Perform**
	Use of trim in straight and level flight to relieve control pressures.	**Perform**
Instrument Climbs and Descents	Set proper pitch and power for appropriate rate of climb/ descent	**Perform**
	Level off altitude +/- 100 ft, airspeed +/- 10 kt, heading +/- 10 degrees	**Perform**
Instrument Turns	Set proper bank and pitch for level, coordinated, standard rate turns.	**Perform**
	Roll out heading +/- 10 degrees, altitude +/- 100 ft, airspeed +/- 10 kt	**Perform**
Communications	Towered and Non- Towered Operations- Receiving and complying with an IFR clearance	**Perform**
Navigation	Load a flight plan using GPS waypoints and NAVAIDs	**Perform**

New		
Task	**Element**	**Completion Standards**
Holds	Enter and fly a standard or nonstandard, published or non- published hold with no GPS	Practice
	Load an unpublished hold in the GPS	Practice
	Load a published hold in GPS	Practice
	Appropriate communications with ATC –Entry and Exit calls	Practice
	Comply with ATC instructions	Practice
	Correct entry into the hold	Practice
	Recognize arrival at holding fix and promptly initiate entry into the holding pattern	Practice
	Apply wind correction and time turns correctly – Racetrack pattern, headings +/- 10 degrees, airspeed +/- 10 deg, altitude +/- 100 ft	Practice
Risk Management	Identify, assess, and mitigate risks encompassing: • Wind correction and staying within the hold boundary • Recalculating fuel reserves if assigned an unanticipated expect further clearance time • Scenarios that could lead to holding • Improper holding entry and improper wind correction while holding	Practice

DME Arcs

PREREQUISITES

Basic Instrument Airmanship

VOR navigation

GPS Navigation

HOME STUDY

IFH 9-17

IPH 4-43

PRIMARY TASKS

Arc Clearance (New)

Arc Entry (New)

Flying the Arc (New)

Wind Correction (New)

Exiting the Arc (New)

OBJECTIVE

Arcs are a segment of many approaches as a way to use a ground base NAVAID (although now we can fly via the GPS as well) to connect from one point on the approach to another. They are a true test of instrument skill and VOR knowledge. You will learn how to join the arc, apply wind correction and stay on course and then exit the arc at the appropriate point.

DESCRIPTION

A DME arc is a constant radius track around a VOR/DME or VORTAC. These are used to funnel airplanes onto the final approach course of an approach (generally). Just like holds you can have a published or unpublished arc, although the likelihood of being assigned an unpublished arc is very rare. However understanding how to intercept and track an arc is a crucial skill that will improve VOR radial tracking, wind correction technique and instrument situational awareness. Other than GPS there are two ways to fly an arc- the turn and twist method and the bearing needle method. The key to any arc is to verify, verify, verify. Verify your NAVAID source for the arc, verify the NAVAID source for departing the arc onto your approach course, and verify the exit radial is set!

PREFLIGHT DISCUSSION

Develop and demonstrate an understanding of characteristics associated with these new tasks:

- Arc Clearance: How ATC phrases Arc clearances and how to draw it out
- Entering the Arc: Situational awareness and understanding the initial heading turn to enter the Arc
- Flying the Arc: Turn ten, twist ten or using the bearing needle to keep the VOR 90 degrees to you
- Wind Correction: Watching DME to see if your course is being blown in or out and adjusting accordingly
- Exiting the Arc: setting up the exit radial or the final approach course

GROUND

1. **Discuss arc entries.**
2. **How do you fly an arc using the turn ten, twist ten method?**
3. **How do you fly an arc using the bearing needle?**
4. **How do you apply wind correction while flying an arc?**
5. **Draw out the following arc and arc entry**
    - **You are flying due west on the 090 radial at 20 DME, ATC gives you the following clearance " intercept the 15 mile arc, arc south east of the ABC VOR"**

SIMULATOR

1. (Dual) Redbird Flight 7:

"What is the name of a rock group that has four members yet none of them sing?" This was one of the many classic parental jokes you told your kids as you flew them around Mt. Rushmore as a special treat on your family vacation. (They were thrilled) While the ceilings held off long enough for the tour, you now realize you need an approach back in to KRAP and request an IFR clearance from ATC. They clear you for VOR 14 via the 238 radial.

Winds 160@8, Ceilings Broken 2000, Visibility 5 SM

Departure	**Enroute/Practice Area**	**Arrival**
Start over the CUT airport at 7,700 feet, fly heading 030		Request the VOR 14 approach

2. (Solo)

Come up with a plan with your instructor to practice what you learned today

FLIGHT

Conduct a flight in your local practice area.

Departure	**Enroute/Practice Area**	**Return**
Normal Takeoff	Fly to the practice area - your instructor will give you a un-published DME arc	Choose a local approach with a published DME arc. Your instructor may or may not take away your GPS

Lesson Tasks and Completion Standards

Review		
Task	**Element**	**Completion Standards**
Checklists	Perform all checklists appropriate for the flight	**Perform**
Preflight & Planning	Instrument Check	**Perform**
Taxiing	Before Take off Checklist- Brief instrument departure, rate of climb required, emergency brief	**Perform**
Planning and Preflight	Obtain Weather Data, Performance Numbers and Weight & Balance, NOTAMS	**Perform**
Basic Airmanship	Exercising PIC authority in control of the aircraft, situational awareness and communication	**Perform**
Instrument Straight and Level Flight	Use attitude indicator to set level flight, cross check with altimeter, airspeed and vertical speed (+/- 100 ft)	**Perform**
	Use of trim in straight and level flight to relieve control pressures.	**Perform**
Instrument Climbs and Descents	Set proper pitch and power for appropriate rate of climb/ descent	**Perform**
	Level off altitude +/- 100 ft, airspeed +/- 10 kt, heading +/- 10 degrees	**Perform**
Instrument Turns	Set proper bank and pitch for level, coordinated, standard rate turns.	**Perform**
	Roll out heading +/- 10 degrees, altitude +/- 100 ft, airspeed +/- 10 kt	**Perform**
Communications	Towered and Non- Towered Operations- Receiving and complying with an IFR clearance	**Perform**
Navigation	Load a flight plan using GPS waypoints and NAVAIDs	**Perform**

New		
Task	**Element**	**Completion Standards**
Communications	Appropriate ATC communications and proper communication phraseology	Practice
VOR/DME Arc	Load an approach with an arc, fly arc via the GPS	Practice
	Fly a non- published arc via NAVAIDs	Practice
	Entering the arc at the correct DME and to the correct heading (.5 DME before arc) heading +/- 5 degrees, altitude +/- 100, airspeed +/- 10 kts	Practice
	Understand and comply with ATC instructions and clearance	Practice
	Apply wind correction and maintaining DME +/- 1 DME, no more than ¾ scale CDI deflection	Practice
	Input correct NAVAID frequency for the arc and exit radial	Practice
	Exit on the correct radial	Practice
	Use MFD and other graphical navigational displays, if installed, to monitor position, track, wind drift and maintain situational awareness.	Practice
Risk Management	Identify, assess, and mitigate risks encompassing: • Failure to manage automated navigation and autoflight systems • Distractions, loss of situational awareness and/or improper task management • Limitations of navigation system in use	Practice

Non-Precision Approaches

PREREQUISITES

Basic Instrument Airmanship

Instrument Descents in Various Configurations

Non- Precision Approach Profile Memorized

HOME STUDY

IPH 4-1,

4-37 through 4-41

4-49, 4-53,

4-60 through 4-61,

4-75 through 4-76

IFH Chapter 1,

AIM 5-4-4 through 5-4-7

5-4-20 through 5-4-21, 5-4-23

FAR 91.175 – 91.176

PRIMARY TASKS

Pitch and Power Settings

Approach Clearance Request and Read Back (New)

Approach Brief and Set Up (New)

Navigate via the Approach Plate (New)

Descend via the Approach Plate (New)

Follow Non- Precision Approach Profile (New)

Complete all Appropriate Checklists and Callouts (New)

REDBIRD FLIGHT SIMULATIONS, INC.

OBJECTIVE

Non-precision approaches navigate the pilot to the field but do not give any vertical guidance, instead they use step down altitudes to aid the descent. You will learn how to read an approach plate, navigate via the approach plate and descend to minimums. In addition, you will use the pitch and power settings you practiced previously to descend at the required speed and rate as required by the non- precision approach profile for your particular airplane.

DESCRIPTION

Finally, after learning how to fly in instrument conditions and perfecting your maneuvers, you get to learn the anticipated approaches. Examples of non-precision approaches are VOR, GPS, NDB and Localizer approaches as well as circle to land approaches. Because you do not have vertical guidance you will have to read the approach plate to know what altitude to maintain at each fix. You can “step down” to each fix by descending as soon as possible and then leveling off, or you can set a glide path and by assessing if you are high or low adjust your rate of descent accordingly. At your Minimum Descent Altitude (MDA) you will have to level off until you see the runway environment or reach your Missed Approach Point (MAP).

PREFLIGHT DISCUSSION

Develop and demonstrate an understanding of characteristics associated with these new tasks:

- Terminology: Minimum Descent Altitude, Missed Approach Point, Visual Descent Point, Runway Environment, Initial Approach Fix, Approach Fix, Final Approach Fix, Final Approach Course, Vectors to Final, Circle to Land
- How to read and brief an approach plate, differences between Jeppesen and Government/Naco charts
- Discuss flying the approach and approach profiles, when to start descents, run checklists, talk to ATC (towered and non-towered airports)

GROUND

1. What are the differences between GPS LPV, LP+V, LNAV, LNAV/VNAV, and LNAV +V approaches?
2. What approaches is your aircraft certified to fly?
3. How do you enter a circle for a circle to land approach?
4. What is the radius for protected space for your category of aircraft in a circle approach?

SIMULATOR

1. (Dual) Redbird Flight 8:

You are returning your company's skydiving plane from maintenance in KFZY back to B16 to resume operations.

Ceilings at B16 are overcast at 600 with winds 180@8, visibility 3 SM, while the ceilings are forecasted to lift, you are prepared to return to KFZY if they stay low.

Alternate: KFZY, Ceilings at KFZY are overcast at 1,000 with winds at 180@ 8, visibility 3 SM. However, the ILS there is NOTAM'd inoperative and you do not have a WAAS capable aircraft

Departure	**Enroute/Practice Area**	**Arrival**
Normal takeoff and departure from KFZY		If unable to land at B16 proceed missed and return to KFZY, consider RNAV or LOC 33 circle to land 15 to save time

2. (Solo)
Come up with a plan with your instructor to practice what you learned today

3. GIFT Module
Perform VOR Approach, RNAV-LNAV Approach, and Localizer Approach modules until you consistently earn a passing score.

Perform a VOR Approach, an RNAV-LNAV Approach, or a Localizer Approach with the Circle to Land option selected until you consistently earn a passing score.

FLIGHT

Plan a flight with 3 airports at least 20 nm apart (triangle)

Departure	Enroute/Practice Area	Return
Normal takeoff and departure	2 full panel non- precision approaches, include at least 1 hold or DME arc, 1 circle to land and one missed approach.	1 partial panel/ reversionary mode non-precision approach

Lesson Tasks and Completion Standards

Review		
Task	**Element**	**Completion Standards**
Checklists	Perform all checklists appropriate for the flight	**Perform**
Preflight & Planning	Instrument Check	**Perform**
Taxiing	Before Take off Checklist- Brief instrument departure, rate of climb required, emergency brief	**Perform**
Planning and Preflight	Obtain Weather Data, Performance Numbers and Weight & Balance, NOTAMS	**Perform**
Basic Airmanship	Exercising PIC authority in control of the aircraft, situational awareness and communication	**Perform**
Instrument Straight and Level Flight	Use attitude indicator to set level flight, cross check with altimeter, airspeed and vertical speed (+/- 100 ft)	**Perform**
	Use of trim in straight and level flight to relieve control pressures.	**Perform**
Instrument Climbs and Descents	Set proper pitch and power for appropriate rate of climb/ descent	**Perform**
	Level off altitude +/- 100 ft, airspeed +/- 10 kt, heading +/- 10 degrees	**Perform**
Instrument Turns	Set proper bank and pitch for level, coordinated, standard rate turns.	**Perform**
	Roll out heading +/- 10 degrees, altitude +/- 100 ft, airspeed +/- 10 kt	**Perform**
Communications	Towered and Non- Towered Operations- Receiving and complying with an IFR clearance	**Perform**
	Appropriate ATC communications and proper communication phraseology	**Perform**
Navigation	Load a flight plan using GPS waypoints and NAVAIDs	**Perform**

New		
Task	**Element**	**Completion Standards**
Non-Precision Approach	Load an approach in the flight plan, or use appropriate NAVAIDS	Practice
	Select, tune, identify and confirm the operational status of navigation equipment	Practice
	Brief the approach	Practice
	Configure the airplane and set pitch and power settings for stabilized descent	Practice
	Appropriate communications with ATC	Practice
	Understand and comply ATC instructions	Practice
	Verify all checklists and callouts	Practice
	Maintain altitude +/- 100 ft, heading +/- 10 deg, airspeed +/- 10 kts, prior to beginning the final approach segment	Practice
	Activate approach when cleared for the approach	Practice
	Apply adjustments to published MDA and visibility criteria for approach category, NOTAMS, inoperative equipment or visual aids etc.	Practice
	Final approach segment – maintain no more than a ¾ scale deflection of the FDI, maintain airspeed +/- 10 kt,	Practice
	Do not descend below required altitudes	Practice
	Apply wind correction for final approach course	Practice
	Level off at MDA, altitude -0/+100	Practice

	Execute a missed approach procedure if required visual references are not distinctly visible and identifiable by the missed approach point	Practice
Circle to Land Approach	Select and comply with the circling approach procedure considering turbulence, windshear, and the maneuvering capabilities of the airplane.	Practice
	Confirm the direction of traffic and adhere to all restrictions and instructions issued by ATC or instructor	Practice
	Maneuver the airplane, at or above the MDA, 90° or more from the final approach course, on a flightpath permitting a normal landing on a suitable runway.	Practice
	Avoid circling beyond visibility requirements	Practice
	Maintain the appropriate circling altitude until in a position from which a descent to a normal landing can be made.	Practice
	Maintain altitude +100/-0 feet until a descent to a normal landing can be made.	Practice
Missed Approach	Initiate the missed approach promptly by applying power, establishing a climb attitude, and configuring the airplane in accordance with the airplane's manufacturer's recommendations.	Practice
	Report to ATC upon beginning the missed approach procedure.	Practice
	Comply with the published or alternate missed approach procedure.	Practice
	Advise ATC or the evaluator if unable to comply with a clearance, restriction, or climb gradient.	Practice
	Follow the recommended checklist items appropriate to the missed approach/go-around procedure.	Practice
	Request, if appropriate, ATC clearance to the alternate airport, clearance limit, or as directed by the evaluator.	Practice
	Maintain the recommended airspeed ±10 knots; heading, course, or bearing ±10°; and altitude(s) ±100 feet during the missed approach procedure.	Practice
	Use an MFD and other graphical navigation displays, if installed, to monitor position and track to help navigate the missed approach.	Practice
Risk Management	Identify, assess, and mitigate risks encompassing: • Descending below the minimum descent altitude (MDA) without proper visual references • Deteriorating weather conditions on approach • An unstable approach, including excessive descent rates • Failure to ensure proper airplane configuration during an approach and missed approach • Failure to manage automated navigation and autoflight systems • Failure to follow prescribed circling approach procedures. • Executing a circling approach at night or with marginal visibility • Low altitude maneuvering including stall, spin, or CFIT. • Executing an improper missed approach after the MAP while circling.	Practice

Precision Approaches

PREREQUISITES

Basic Instrument Airmanship

Non - Precision Approaches

Precision Approach Profile Memorized

HOME STUDY

AFH: 8-25, Chapter 16

PRIMARY TASKS

Pitch and Power Settings

Approach Clearance Request and Read Back

Approach Brief and Set Up

Navigate via the Approach Plate

Descend via the Approach Plate

Follow Precision Approach Profile (New)

Complete all Appropriate Checklists and Callouts

OBJECTIVE

Use pitch and power settings to set a glide path down to the Decision Altitude (DA) while following the appropriate navigation aid.

DESCRIPTION

Precision Approaches give a pilot vertical guidance to the runway as well as horizontal guidance either with a glideslope (ILS) or VNAV (WAAS). You will learn how to intercept these vertical paths and set a stable descent to follow making minor adjustments to stay on course to break out and land or reach your Decision Altitude and go missed.

PREFLIGHT DISCUSSION

Develop and demonstrate an understanding of characteristics associated with these new tasks:

- Terminology: WAAS, ILS, Decision Altitude
- Components of an ILS
- How to read and brief an approach plate for a Precision Approach
- Precision Approach profile and how to fly it.

GROUND

1. Approach Clearances: Towered vs Non-Towered Airports- how can you receive an IFR clearance?

2. How is an IFR clearance cancelled?

3. What are the differences between an MDA and DA?

4. What modes should the GPS read when flying a WAAS approach?

SIMULATOR

1. (Dual) Redbird Flight 9:

After spending the morning eating delicious pancakes at Wings Café in KFUL you decide to zip over to KSNA to grab a part for your upcoming annual inspection and save your mechanic a trip. Unfortunately you reach the DA and have to go missed, when ATC asks your intentions you decide to head back to your home airport KLGB and request the ILS 30.

Winds 220@8, Ceilings Overcast 300, Visibility 2 SM

Departure	**Enroute/Practice Area**	**Return**
KFUL RWY 24 ODP	KSNA 20R ILS to minimums Go missed- begin flying the published missed until you can state your intentions and get set up for KLGB	Fly KLGB 30 ILS

2. (Solo)

Come up with a plan with your instructor to practice what you learned today

3. GIFT Module

Perform ILS Approach, RNAV-LPV approach, and RNAV-LNAV+VNAV approaches until you consistently earn a passing score.

Perform ILS Approach, RNAV-LPV approach, and RNAV-LNAV+VNAV approaches with Go Missed option selected until you consistently earn a passing score.

FLIGHT

Plan a flight with 3 airports at least 25 nm apart- Towered and Non-towered airports

Departure	Enroute/Practice Area	Return
Home airport	2 normal precision approaches- one to land, one missed,	Partial panel or reversionary mode precision approach

Lesson Tasks and Completion Standards

Review		
Task	**Element**	**Completion Standards**
Checklists	Perform all checklists appropriate for the flight	**Perform**
Preflight & Planning	Instrument Check	**Perform**
Taxiing	Before Take off Checklist- Brief instrument departure, rate of climb required, emergency brief	**Perform**
Planning and Preflight	Obtain Weather Data, Performance Numbers and Weight & Balance, NOTAMS	**Perform**
Basic Airmanship	Exercising PIC authority in control of the aircraft, situational awareness and communication	**Perform**
Instrument Straight and Level Flight	Use attitude indicator to set level flight, cross check with altimeter, airspeed and vertical speed (+/- 100 ft)	**Perform**
	Use of trim in straight and level flight to relieve control pressures.	**Perform**
Instrument Climbs and Descents	Set proper pitch and power for appropriate rate of climb/ descent	**Perform**
	Level off altitude +/- 100 ft, airspeed +/- 10 kt, heading +/- 10 degrees	**Perform**
Instrument Turns	Set proper bank and pitch for level, coordinated, standard rate turns.	**Perform**
	Roll out heading +/- 10 degrees, altitude +/- 100 ft, airspeed +/- 10 kt	**Perform**
Communications	Towered and Non- Towered Operations- Receiving and complying with an IFR clearance	**Perform**
	Appropriate ATC communications and proper communication phraseology	**Perform**
Navigation	Load a flight plan using GPS waypoints and NAVAIDs	**Perform**

New		
Task	**Element**	**Completion Standards**
Precision Approach	Load an approach in the flight plan, or use appropriate NAVAIDS	Practice
	Select, tune, identify and confirm the operational status of navigation equipment	Practice
	Brief the approach	Practice
	Configure the airplane and set pitch and power settings for stabilized descent	Practice
	Appropriate communications with ATC	Practice
	Understand and comply ATC instructions	Practice

	Verify all checklists and callouts	Practice
	Maintain altitude +/- 100 ft, heading +/- 10 deg, airspeed +/- 10 kts, prior to beginning the final approach segment	Practice
	Activate approach when cleared for the approach	Practice
	Apply adjustments to published MDA and visibility criteria for approach category, NOTAMS, inoperative equipment or visual aids etc.	Practice
	Final approach segment – maintain no more than a ¾ scale deflection of the CDI, maintain airspeed +/- 10 kt,	Practice
	Do not descend below required altitudes	Practice
	Apply wind correction for final approach course	Practice
	Fly to (Decision Altitude) DA and if required visual references are visible, make a normal descent to land	Practice
	Immediately execute a missed approach procedure if required visual references are not distinctly visible and identifiable by the DA	Practice
Missed Approach	Initiate the missed approach promptly by applying power, establishing a climb attitude, and configuring the airplane in accordance with the airplane's manufacturer's recommendations.	Practice
	Report to ATC upon beginning the missed approach procedure.	Practice
	Comply with the published or alternate missed approach procedure.	Practice
	Advise ATC or the evaluator if unable to comply with a clearance, restriction, or climb gradient.	Practice
	Follow the recommended checklist items appropriate to the missed approach/go-around procedure.	Practice
	Request, if appropriate, ATC clearance to the alternate airport, clearance limit, or as directed by the evaluator.	Practice
	Maintain the recommended airspeed ±10 knots; heading, course, or bearing ±10°; and altitude(s) ±100 feet during the missed approach procedure.	Practice
	Use an MFD and other graphical navigation displays, if installed, to monitor position and track to help navigate the missed approach.	Practice
Risk Management	Identify, assess, and mitigate risks encompassing: • Choosing an appropriate approach based on weather, direction of flight, and minimums. • Determining an alternate course of action if the approach cannot be completed • Descending below the Decision Altitude (DA) without proper visual references • Deteriorating weather conditions on approach • An unstable approach, including excessive descent rates • Failure to ensure proper airplane configuration during an approach and missed approach • Failure to manage automated navigation and autoflight systems	Practice

My Friend “George”

PREREQUISITES

Non- Precision Approaches

Precision Approaches

HOME STUDY

AAH- Chapter 4

PRIMARY TASKS

Autopilot Modes

Sequence of Operation

Coupled Approaches

OBJECTIVE

Autopilots and flight directors are a pilot’s best friend but if they are not used properly can be a nightmare. Today you will learn how these systems operate and what functions you can utilize in flight.

DESCRIPTION

Understanding limitations, autopilot errors and what exactly each function of the autopilot and flight director does is key for safe and smooth operations. While most work in the same way, as technology has improved, many newer models have upgraded and can do more and more for the pilot. In today’s discussion you will discuss how autopilots and flight directors work in general, any specific functions your autopilot can do, and the best order in which to operate the different functions.

PREFLIGHT DISCUSSION

Develop and demonstrate an understanding of characteristics associated with these new tasks:

- How the system operates
- Servos and how they work
- Autopilot limitations
- Testing, Errors and Disengaging
- Autopilot functions
- Order of operation

An oceanographer friend based at the Long Beach aquarium has been asked to research a sea otter habitat in Santa Barbara and asks if you would want to make a day of it and grab lunch at the Elephant Bar. You've never been one to turn down a $100 burger so you agree.

Winds 070@ 10, Ceilings Overcast 900, Visibility 3 SM

Departure	**Enroute/Practice Area**	**Arrival**
Depart from RWY 8L at KLGB, Climb via the HAWWC3.IKAYE departure Climb to 6000 ft.	Use your flight director and autopilot	Attempt the VOR or GPS 25 approach circle to land at KSBA, simulate weather deteriorated – go missed, fly published hold, then fly ILS 07

2. (Solo)

Come up with a plan with your instructor to practice what you learned today

3. GIFT Module

Perform a precision approach and a non-precision approach coupled with the autopilot until you consistently earn a passing grade.

Lesson Tasks and Completion Standards

Review		
Task	**Element**	**Completion Standards**
Checklists	Perform all checklists appropriate for the flight	**Perform**
Preflight & Planning	Instrument Check	**Perform**
Taxiing	Before Take off Checklist- Brief instrument departure, rate of climb required, emergency brief	**Perform**
Planning and Preflight	Obtain Weather Data, Performance Numbers and Weight & Balance, NOTAMS	**Perform**
Basic Airmanship	Exercising PIC authority in control of the aircraft, situational awareness and communication	**Perform**
Instrument Straight and Level Flight	Use attitude indicator to set level flight, cross check with altimeter, airspeed and vertical speed (+/- 100 ft)	**Perform**
	Use of trim in straight and level flight to relieve control pressures.	**Perform**
Instrument Climbs and Descents	Set proper pitch and power for appropriate rate of climb/ descent	**Perform**
	Level off altitude +/- 100 ft, airspeed +/- 10 kt, heading +/- 10 degrees	**Perform**
Instrument Turns	Set proper bank and pitch for level, coordinated, standard rate turns.	**Perform**
	Roll out heading +/- 10 degrees, altitude +/- 100 ft, airspeed +/- 10 kt	**Perform**
Communications	Towered and Non- Towered Operations- Receiving and complying with an IFR clearance	**Perform**
	Appropriate ATC communications and proper communication phraseology	**Perform**
Navigation	Load a flight plan using GPS waypoints and NAVAIDs	**Perform**
Precision and Non-Precision Approaches	Load an approach in the flight plan, or use appropriate NAVAIDS	**Perform**
	Select, tune, identify and confirm the operational status of navigation equipment	**Perform**
	Brief the approach	**Perform**
	Configure the airplane and set pitch and power settings for stabilized descent	**Perform**
	Appropriate communications with ATC	**Perform**
	Understand and comply ATC instructions	**Perform**
	Verify all checklists and callouts	**Perform**
	Maintain altitude +/- 100 ft, heading +/- 10 deg, airspeed +/- 10 kts, prior to beginning the final approach segment	**Perform**
	Activate approach when cleared for the approach	**Perform**
	Apply adjustments to published MDA or DA and visibility criteria for approach category, NOTAMS, inoperative equipment or visual aids etc.	**Perform**
	Final approach segment – maintain no more than a ¾ scale deflection of the FDI, maintain airspeed +/- 10 kt,	**Perform**
	Do not descend below required altitudes	**Perform**
	Apply wind correction for final approach course	**Perform**
	Level off at MDA, altitude -0/+100 until visual references are visible or Fly to DA and if required visual references are visible, make a normal descent to land	**Perform**
	Execute a missed approach procedure if required visual references are not distinctly visible and identifiable by the missed approach point or DA	**Perform**
Circle to Land Approach	Select and comply with the circling approach procedure considering turbulence, windshear, and the maneuvering capabilities of the airplane.	**Perform**
	Confirm the direction of traffic and adhere to all restrictions and instructions issued by ATC or instructor	**Perform**
	Maneuver the airplane, at or above the MDA, 90° or more from the final approach course, on a flightpath permitting a normal landing on a suitable runway.	**Perform**
	Avoid circling beyond visibility requirements	**Perform**

	Maintain the appropriate circling altitude until in a position from which a descent to a normal landing can be made.	**Perform**
	Maintain altitude +100/-0 feet until a descent to a normal landing can be made.	**Perform**
Missed Approach	Initiate the missed approach promptly by applying power, establishing a climb attitude, and configuring the airplane in accordance with the airplane's manufacturer's recommendations.	**Perform**
	Report to ATC upon beginning the missed approach procedure.	**Perform**
	Comply with the published or alternate missed approach procedure.	**Perform**
	Advise ATC or the evaluator if unable to comply with a clearance, restriction, or climb gradient.	**Perform**
	Follow the recommended checklist items appropriate to the missed approach/go-around procedure.	**Perform**
	Request, if appropriate, ATC clearance to the alternate airport, clearance limit, or as directed by the evaluator.	**Perform**
	Maintain the recommended airspeed ±10 knots; heading, course, or bearing ±10°; and altitude(s) ±100 feet during the missed approach procedure.	**Perform**
	Use an MFD and other graphical navigation displays, if installed, to monitor position and track to help navigate the missed approach.	**Perform**

New		
Task	**Element**	**Completion Standards**
Autopilot Use	Before take off test autopilot operation and disconnect	Practice
	On departure engage flight director or autopilot and use FLC or VS modes for climb out, select Altitude mode for altitude capture	Practice
	Use Nav and Heading modes for enroute	Practice
	Fly non- precision coupled approach in Nav or Apr mode as appropriate to minimums	Practice
	Fly precision coupled approach in Apr mode to minimums	Practice
	Use CWS to maneuver and return to AP	Practice
	Perform a missed approach from a coupled approach to minimums	Practice
	Follow published missed approach and remain at least one turn in holding	Practice
Risk Management	Identify, assess, and mitigate risks encompassing: - Disconnecting the autopilot in case of malfunction - Use of Control Wheel Steering (CWS) button to "pause" autopilot - Full understanding of each mode - Confusion/errors with order of events and automation	Practice

Let's Talk Alternates

PREREQUISITE

Non- Precision Approaches

Precision Approaches

HOME STUDY

IPH 1-13 through 1-14

IFH 1- 16, 1-27, 2-13

FAR 91. 169

PRIMARY TASKS

IFR Flight Planning

OBJECTIVE

When flying in inclement weather it's always a good idea to have a plan B, in fact in some cases it's required. Today you will learn when it's required to have an alternate airport on your flight plan and what are the requirements for that airport.

DESCRIPTION

When the ceilings and visibility do not meet certain minimums at your destination you are required to file an alternate on your flight plan. Depending on what approaches that airport has, the weather at the alternate must also meet certain minimums and you must also have enough fuel on board to reach that alternate with a reserve. All of this is for planning purposes, once you are in the air you have the freedom to make decisions based on the current information you have, but you always have that plan B in your back pocket.

PREFLIGHT DISCUSSION

Develop and demonstrate an understanding of characteristics associated with new tasks:

- When an alternate airport is required
- If an alternate has non- standard weather minimums how do you find them?
- Once you are in the air what options are available if you have to go missed, are you required to proceed to your alternate?

1. How much fuel is required on board?
2. While planning, what must the weather be at the alternate airport at the time of arrival?
3. Can airports with only a GPS approach be used as an alternate?
4. Can airports without an approach ever be used as an alternate?

SIMULATOR

1. (Dual) Redbird Flight 11:

You and a friend are flying from KSAF to KAXX to snow ski. Weather within 1 hour of your estimated arrival time is 1600 overcast and 2 sm visibility. Is an alternate required?

If an alternate is required, you decide to use KSKX, the ceilings there at your estimated time of arrival should you go missed are 900/2. Since you are planning on the GPS approach into KAXX you would have to use the VOR approach for your alternate, will the ceilings work to use as an alternate? Why or why not? If you can't use KSKX you decide to have KSAF as your alternate.

Winds 160@10, Ceilings Broken 1400, Visibility 4 SM

Departure	Enroute/Practice Area	Return
KSAF ODP 15	Fly to KAXX- go missed. Decide whether to attempt again, proceed to KSKX or back to KSAF	If you choose KSKX go missed and proceed to KSAF

2. (Solo)

Come up with a plan with your instructor to practice what you learned today

3. GIFT Module

Perform an approach with Go Missed option selected.

FLIGHT

Plan a flight between 2 airports ~25 nm apart. Plan an alternate.

Departure	Enroute/Practice Area	Return
Normal departure- ODP if applicable	Go missed at planned airport. Your instructor will give you simulated "weather" for a few other airports for you to decide what the best course of action is	Proceed to alternate, original or other airport of your choice.

Lesson Tasks and Completion Standards

Review		
Task	**Element**	**Completion Standards**
Checklists	Perform all checklists appropriate for the flight	**Perform**
Preflight & Planning	Instrument Check	**Perform**
Taxiing	Before Take off Checklist- Brief instrument departure, rate of climb required, emergency brief	**Perform**
Planning and Preflight	Obtain Weather Data, Performance Numbers and Weight & Balance, NOTAMS	**Perform**
Basic Airmanship	Exercising PIC authority in control of the aircraft, situational awareness and communication	**Perform**
Instrument Straight and Level Flight	Use attitude indicator to set level flight, cross check with altimeter, airspeed and vertical speed (+/- 100 ft)	**Perform**
	Use of trim in straight and level flight to relieve control pressures.	**Perform**
Instrument Climbs and Descents	Set proper pitch and power for appropriate rate of climb/ descent	**Perform**
	Level off altitude +/- 100 ft, airspeed +/- 10 kt, heading +/- 10 degrees	**Perform**
Instrument Turns	Set proper bank and pitch for level, coordinated, standard rate turns.	**Perform**
	Roll out heading +/- 10 degrees, altitude +/- 100 ft, airspeed +/- 10 kt	**Perform**
Communications	Towered and Non- Towered Operations- Receiving and complying with an IFR clearance	**Perform**
	Appropriate ATC communications and proper communication phraseology	**Perform**
Navigation	Load a flight plan using GPS waypoints and NAVAIDs	**Perform**
Precision and Non-Precision Approaches	Load an approach in the flight plan, or use appropriate NAVAIDS	**Perform**
	Select, tune, identify and confirm the operational status of navigation equipment	**Perform**
	Brief the approach	**Perform**
	Configure the airplane and set pitch and power settings for stabilized descent	**Perform**
	Appropriate communications with ATC	**Perform**
	Understand and comply ATC instructions	**Perform**
	Verify all checklists and callouts	**Perform**
	Maintain altitude +/- 100 ft, heading +/- 10 deg, airspeed +/- 10 kts, prior to beginning the final approach segment	**Perform**
	Activate approach when cleared for the approach	**Perform**
	Apply adjustments to published MDA or DA and visibility criteria for approach category, NOTAMS, inoperative equipment or visual aids etc.	**Perform**
	Final approach segment – maintain no more than a ¾ scale deflection of the FDI, maintain airspeed +/- 10 kt,	**Perform**
	Do not descend below required altitudes	**Perform**
	Apply wind correction for final approach course	**Perform**
	Level off at MDA, altitude -0/+100 until visual references are visible or Fly to DA and if required visual references are visible, make a normal descent to land	**Perform**
	Execute a missed approach procedure if required visual references are not distinctly visible and identifiable by the missed approach point or DA	**Perform**
Circle to Land Approach	Select and comply with the circling approach procedure considering turbulence, windshear, and the maneuvering capabilities of the airplane.	**Perform**
	Confirm the direction of traffic and adhere to all restrictions and instructions issued by ATC or instructor	**Perform**
	Maneuver the airplane, at or above the MDA, 90° or more from the final approach course, on a flightpath permitting a normal landing on a suitable runway.	**Perform**
	Avoid circling beyond visibility requirements	**Perform**

	Maintain the appropriate circling altitude until in a position from which a descent to a normal landing can be made.	**Perform**
	Maintain altitude +100/-0 feet until a descent to a normal landing can be made.	**Perform**
Missed Approach	Initiate the missed approach promptly by applying power, establishing a climb attitude, and configuring the airplane in accordance with the airplane's manufacturer's recommendations.	**Perform**
	Report to ATC upon beginning the missed approach procedure.	**Perform**
	Comply with the published or alternate missed approach procedure.	**Perform**
	Advise ATC or the evaluator if unable to comply with a clearance, restriction, or climb gradient.	**Perform**
	Follow the recommended checklist items appropriate to the missed approach/go-around procedure.	**Perform**
	Request, if appropriate, ATC clearance to the alternate airport, clearance limit, or as directed by the evaluator.	**Perform**
	Maintain the recommended airspeed ±10 knots; heading, course, or bearing ±10°; and altitude(s) ±100 feet during the missed approach procedure.	**Perform**
	Use an MFD and other graphical navigation displays, if installed, to monitor position and track to help navigate the missed approach.	**Perform**

New		
Task	**Element**	**Completion Standards**
Flying to an Alternate	Load an initial approach in the flight plan, or use appropriate NAVAIDS	**Perform**
	Fly the approach to ACS standards	**Perform**
	At or before the Decision Altitude (DA) or (MDA) execute the missed approach	Practice
	Communicate with ATC and comply with instructions	Practice
	Determine a course of action and communicate intentions with ATC	Practice
	Configure the GPS and reload the flight plan	Practice
	Recalculate time and fuel to destination	Practice
Risk Management	Identify, assess, and mitigate risks encompassing: • Choosing an appropriate approach based on weather, direction of flight, and minimums. • Choosing an appropriate alternate based on weather, the mission, approaches at the alternate and checking any non-standard minimums • Determining an alternate course of action if the approach cannot be completed using all available resources • Situational awareness on the approach at all times	Practice

Can You Hear Me Now?

PREREQUISITE

Instrument Approaches

Arrivals and Departures

HOME STUDY

FAR 91.185

AIM Chapter 6, Section 4

IPH: 1-26

PRIMARY TASKS

Lost Comm Procedures

OBJECTIVE

In this lesson you will learn what to do if you are in instrument conditions and lose communications with ATC

DESCRIPTION

You've tried everything - jiggling your headset cord, checking the last frequency, calling 121.5 and radio silence. You're thick in the soup so landing VMC is not an option. What do you do? Luckily ATC has a plan for that. The key to lost comms is for everyone to be on the same page. If ATC sees you following the lost comm plan then they can make sure to keep everyone out of your way until you make a safe landing.

PREFLIGHT DISCUSSION

Develop and demonstrate an understanding of characteristics associated with new tasks:

- Before starting the Lost Comm Procedure what else can you try?
- Clearance Limits- what are they, why are they important
- Navigation- How will ATC expect you to navigate to your destination? (A.V.E.F.)
- Altitudes- What altitudes will ATC expect you to fly? (M.E.A.)
- What code should you squawk
- If you break out early into VMC should you continue this procedure?
- When would you declare an emergency? What options would that give you? Does it count if you declare it to yourself and not to ATC?

GROUND

Look at the FLIPR SIX Arrival at KMIA with your instructor. You are flying in from the Bahamas MYAK after visiting your mildly eccentric parents who decided to spend their retirement traveling the world in a sailboat. Discuss the lost comm procedure on the arrival and what you would do in various situations. How would it differ if the lost comm instructions were not written up?

SIMULATOR

1. (Dual) Redbird Flight 12:

5B2- KBOS via the Gardner Four (ALB.GDM4) arrival

Winds 060@9, Ceilings Overcast 400, Visibility 3 SM

Departure	Enroute/Practice Area	Return
Create a sample IFR flight plan and obtain a clearance from your instructor using non-towered airport procedures. Depart 5B2 Rwy 5 via the ODP. "ATC" will guide you onto the arrival	At some point your instructor will simulate a lost comm. Continue your flight safely by using lost comm procedures	Land at KBOS or divert to another airport

2. (Solo)

Come up with a plan with your instructor to practice what you learned today

FLIGHT

Fly to another airport ~ 25 nm via airways

Departure	Enroute/Practice Area	Return
Normal departure from home airport	If able fly VFR so you and your instructor can simulate a lost comm scenario and determine what steps to take. If IFR and ATC can accommodate your requests, continue communicating but make requests based on what you would be doing in a lost comm situation (climb/descend/hold)	Go missed and return to home airport

Lesson Tasks and Completion Standards

Review		
Task	**Element**	**Completion Standards**
Checklists	Perform all checklists appropriate for the flight	**Perform**
Preflight & Planning	Instrument Check	**Perform**
Taxiing	Before Take off Checklist- Brief instrument departure, rate of climb required, emergency brief	**Perform**
Planning and Preflight	Obtain Weather Data, Performance Numbers and Weight & Balance, NOTAMS	**Perform**
Basic Airmanship	Exercising PIC authority in control of the aircraft, situational awareness and communication	**Perform**
Instrument Straight and Level Flight	Use attitude indicator to set level flight, cross check with altimeter, airspeed and vertical speed (+/- 100 ft)	**Perform**
	Use of trim in straight and level flight to relieve control pressures.	**Perform**
Instrument Climbs and Descents	Set proper pitch and power for appropriate rate of climb/ descent	**Perform**
	Level off altitude +/- 100 ft, airspeed +/- 10 kt, heading +/- 10 degrees	**Perform**
Instrument Turns	Set proper bank and pitch for level, coordinated, standard rate turns.	**Perform**
	Roll out heading +/- 10 degrees, altitude +/- 100 ft, airspeed +/- 10 kt	**Perform**
Communications	Towered and Non- Towered Operations- Receiving and complying with an IFR clearance	**Perform**
	Appropriate ATC communications and proper communication phraseology	**Perform**
Navigation	Load a flight plan using GPS waypoints and NAVAIDs	**Perform**
Precision and Non-Precision Approaches	Load an approach in the flight plan, or use appropriate NAVAIDS	**Perform**
	Select, tune, identify and confirm the operational status of navigation equipment	**Perform**
	Brief the approach	**Perform**
	Configure the airplane and set pitch and power settings for stabilized descent	**Perform**
	Appropriate communications with ATC	**Perform**
	Understand and comply ATC instructions	**Perform**
	Verify all checklists and callouts	**Perform**
	Maintain altitude +/- 100 ft, heading +/- 10 deg, airspeed +/- 10 kts, prior to beginning the final approach segment	**Perform**
	Activate approach when cleared for the approach	**Perform**
	Apply adjustments to published MDA or DA and visibility criteria for approach category, NOTAMS, inoperative equipment or visual aids etc.	**Perform**
	Final approach segment – maintain no more than a ¾ scale deflection of the FDI, maintain airspeed +/- 10 kt,	**Perform**
	Do not descend below required altitudes	**Perform**
	Apply wind correction for final approach course	**Perform**
	Level off at MDA, altitude -0/+100 until visual references are visible or Fly to DA and if required visual references are visible, make a normal descent to land	**Perform**
	Execute a missed approach procedure if required visual references are not distinctly visible and identifiable by the missed approach point or DA	**Perform**
Circle to Land Approach	Select and comply with the circling approach procedure considering turbulence, windshear, and the maneuvering capabilities of the airplane.	**Perform**
	Confirm the direction of traffic and adhere to all restrictions and instructions issued by ATC or instructor	**Perform**
	Maneuver the airplane, at or above the MDA, 90° or more from the final approach course, on a flightpath permitting a normal landing on a suitable runway.	**Perform**
	Avoid circling beyond visibility requirements	**Perform**

	Maintain the appropriate circling altitude until in a position from which a descent to a normal landing can be made.	**Perform**
	Maintain altitude +100/-0 feet until a descent to a normal landing can be made.	**Perform**
Missed Approach	Initiate the missed approach promptly by applying power, establishing a climb attitude, and configuring the airplane in accordance with the airplane's manufacturer's recommendations.	**Perform**
	Report to ATC upon beginning the missed approach procedure.	**Perform**
	Comply with the published or alternate missed approach procedure.	**Perform**
	Advise ATC or the evaluator if unable to comply with a clearance, restriction, or climb gradient.	**Perform**
	Follow the recommended checklist items appropriate to the missed approach/go-around procedure.	**Perform**
	Request, if appropriate, ATC clearance to the alternate airport, clearance limit, or as directed by the evaluator.	**Perform**
	Maintain the recommended airspeed ±10 knots; heading, course, or bearing ±10°; and altitude(s) ±100 feet during the missed approach procedure.	**Perform**
	Use an MFD and other graphical navigation displays, if installed, to monitor position and track to help navigate the missed approach.	**Perform**

New		
Task	**Element**	**Completion Standards**
Lost Communications Procedure	Verify lost comms on previous radio frequency and 121.5	Practice
	Check circuit breakers are all in, headset fully plugged in, volume up	Practice
	Any other modes of communication possible? Satellite phone, cell phone, wifi?	Practice
	Squawk 7600	Practice
	Follow procedures for maintaining altitude through out duration of flight	Practice
	Follow procedures for navigating to clearance limit through out duration of flight	Practice
	Follow procedures for navigating from clearance limit to land	Practice
Risk Management	Identify, assess, and mitigate risks encompassing: • Possible reasons for loss of communication • Failure to follow procedures for lost communications	Practice

Departures

PREREQUISITE

Instrument Basic Airmanship

Chart Symbology

GPS Navigation

VOR Navigation

HOME STUDY

AIM: 5-2-8 b through 5-2-9

IFH: 1-12 through 1-14

10-5 through 10-7

IPH: 1-23 through 1-44

PRIMARY TASKS

IFR Flight Planning

ATC Communications- Obtaining and Reading Back Clearances

Departure Charts- Reading and Understanding (New)

Following Departure Plates (New)

OBJECTIVE

The two types of departures are Standard Instrument Departures (SIDs) and Obstacle Departure Procedures (ODPs). In todays lesson you will learn the difference between the two, how to file, brief and fly them.

DESCRIPTION

At larger airports with busy airspace, departures (and arrivals) help ATC create a flow in order to keep aircraft properly spaced and orderly, while also maintaining obstacle clearances. These departures are called Standard Instrument Departures. Other airports that have terrain, or other obstacles may have an Obstacle Departure Procedure – these procedures are purely for safety purposes.

PREFLIGHT DISCUSSION

Develop and demonstrate an understanding of characteristics associated with new tasks:

- Reading Departure Charts- where to find SIDs and ODP's and how to read the procedures and chart symbols

GROUND

1. Filing- If there is a SID for an airport, is it required to file and fly it? Is there a way to note that you do not want to fly a SID on your flight plan? If you want to fly an ODP do you need to file it?
2. Take Off Minimums- What does it mean by take off minimums? What are standard weather takeoff minimums? Who do they apply to? What climb rate do they expect you to climb unless otherwise noted
3. "Climb via the __ Departure" – What does it mean when ATC tells you to climb via __, how to comply

SIMULATOR

1. (Dual) Redbird Flight 13:

Create a sample flight plan from KDPA- 8C4 (no alternate required), What will the departure procedure be at 8C4 if you had to depart for the return flight?

Winds 120@4, Ceilings Broken 700, Visibility 4 SM

Departure	Enroute/Practice Area	Arrival
Depart KDPA Rwy 10 Obene 3 SID Climb via the SID		Arrive 8C4 VOR or RNAV Rwy 11

2. (Solo)

Come up with a plan with your instructor to practice what you learned today

FLIGHT

Plan a flight to a nearby airport with an ODP

Departure	Enroute/Practice Area	Return
Normal departure from home airport	Land at airport, taxi back and depart via the ODP	Fly an approach back in

Lesson Tasks and Completion Standards

Review		
Task	**Element**	**Completion Standards**
Checklists	Perform all checklists appropriate for the flight	**Perform**
Preflight & Planning	Instrument Check	**Perform**
Taxiing	Before Take off Checklist- Brief instrument departure, rate of climb required, emergency brief	**Perform**
Planning and Preflight	Obtain Weather Data, Performance Numbers and Weight & Balance, NOTAMS	**Perform**
Basic Airmanship	Exercising PIC authority in control of the aircraft, situational awareness and communication	**Perform**
Instrument Straight and Level Flight	Use attitude indicator to set level flight, cross check with altimeter, airspeed and vertical speed (+/- 100 ft)	**Perform**
	Use of trim in straight and level flight to relieve control pressures.	**Perform**
Instrument Climbs and Descents	Set proper pitch and power for appropriate rate of climb/ descent	**Perform**
	Level off altitude +/- 100 ft, airspeed +/- 10 kt, heading +/- 10 degrees	**Perform**
Instrument Turns	Set proper bank and pitch for level, coordinated, standard rate turns.	**Perform**
	Roll out heading +/- 10 degrees, altitude +/- 100 ft, airspeed +/- 10 kt	**Perform**
Communications	Towered and Non- Towered Operations- Receiving and complying with an IFR clearance	**Perform**
	Appropriate ATC communications and proper communication phraseology	**Perform**
Navigation	Load a flight plan using GPS waypoints and NAVAIDs	**Perform**
Precision and Non-Precision Approaches	Load an approach in the flight plan, or use appropriate NAVAIDS	**Perform**
	Select, tune, identify and confirm the operational status of navigation equipment	**Perform**
	Brief the approach	**Perform**
	Configure the airplane and set pitch and power settings for stabilized descent	**Perform**
	Appropriate communications with ATC	**Perform**
	Understand and comply ATC instructions	**Perform**
	Verify all checklists and callouts	**Perform**
	Maintain altitude +/- 100 ft, heading +/- 10 deg, airspeed +/- 10 kts, prior to beginning the final approach segment	**Perform**
	Activate approach when cleared for the approach	**Perform**
	Apply adjustments to published MDA or DA and visibility criteria for approach category, NOTAMS, inoperative equipment or visual aids etc.	**Perform**
	Final approach segment – maintain no more than a ¾ scale deflection of the FDI, maintain airspeed +/- 10 kt,	**Perform**
	Do not descend below required altitudes	**Perform**
	Apply wind correction for final approach course	**Perform**
	Level off at MDA, altitude -0/+100 until visual references are visible or Fly to DA and if required visual references are visible, make a normal descent to land	**Perform**
	Execute a missed approach procedure if required visual references are not distinctly visible and identifiable by the missed approach point or DA	**Perform**
Circle to Land Approach	Select and comply with the circling approach procedure considering turbulence, windshear, and the maneuvering capabilities of the airplane.	**Perform**
	Confirm the direction of traffic and adhere to all restrictions and instructions issued by ATC or instructor	**Perform**
	Maneuver the airplane, at or above the MDA, 90° or more from the final approach course, on a flightpath permitting a normal landing on a suitable runway.	**Perform**
	Avoid circling beyond visibility requirements	**Perform**

	Maintain the appropriate circling altitude until in a position from which a descent to a normal landing can be made.	**Perform**
	Maintain altitude +100/-0 feet until a descent to a normal landing can be made.	**Perform**
Missed Approach	Initiate the missed approach promptly by applying power, establishing a climb attitude, and configuring the airplane in accordance with the airplane's manufacturer's recommendations.	**Perform**
	Report to ATC upon beginning the missed approach procedure.	**Perform**
	Comply with the published or alternate missed approach procedure.	**Perform**
	Advise ATC or the evaluator if unable to comply with a clearance, restriction, or climb gradient.	**Perform**
	Follow the recommended checklist items appropriate to the missed approach/go-around procedure.	**Perform**
	Request, if appropriate, ATC clearance to the alternate airport, clearance limit, or as directed by the evaluator.	**Perform**
	Maintain the recommended airspeed ±10 knots; heading, course, or bearing ±10°; and altitude(s) ±100 feet during the missed approach procedure.	**Perform**
	Use an MFD and other graphical navigation displays, if installed, to monitor position and track to help navigate the missed approach.	**Perform**

New		
Task	**Element**	**Completion Standards**
Departures	Plan and file appropriate departure for route of flight, type of aircraft, altitude, airspeed and equipment on board	Practice
	Obtain clearance and load departure into the GPS properly or required NAVAIDs	Practice
	Brief departure and load any required frequencies	Practice
	Fly the departure following the departure plate	Practice
	Navigate from the departure to the enroute portion by following ATC instructions	Practice
Risk Management	Identify, assess, and mitigate risks encompassing: • Failure to meet departure requirements • Failure to recognize limitations of traffic avoidance equipment • Failure to use see and avoid techniques when possible • Failure to communicate with ATC or follow published procedures	Practice

Arrivals

PREREQUISITE

Basic Instrument Airmanship

Chart Symbology

GPS Navigation

VOR Navigation

HOME STUDY

AIM: 5 - 4-1 through 5-4-4

IFH: 1-12, 10 - 9,

IPH: Chapter 3

PRIMARY TASKS

IFR Flight Planning

Arrival Charts- Reading and Understanding

ATC Communications- Obtaining and Reading Back Clearances

Following Arrival Plates

Descent Planning (New)

OBJECTIVE

Similar to Standard Instrument Departures (SIDS) are Standard Terminal Arrival Routes (STARs). You will learn how to choose, file, brief and read arrival procedures.

DESCRIPTION

Just like departures, arrivals provide obstacle clearance but are mainly to aid ATC in traffic flow and spacing.

PREFLIGHT DISCUSSION

Develop and demonstrate an understanding of characteristics associated with new tasks:

- Reading Arrival Charts- where to find STARs and how to read the procedures and chart symbols
- "Descend via the __ Arrival" – What does it mean when ATC tells you to descend via __, how to comply
- Filing- If there is a STAR for an airport, is it required to file and fly it? Is there a way to note that you do not want to fly a STAR on your flight plan?

SIMULATOR

1. (Dual) Redbird Flight 14:

Create a sample flight plan for KEPH- KGEG via EPH.ZOOMR1 STAR.

Winds are 220@3, Ceilings Overcast 800, Visibility 2 SM

Departure	Enroute/Practice Area	Return
Depart RWY 21 via the ODP	Write and read back arrival clearance. Join the ZOOMR1 arrival by following ATC instructions.	Fly the arrival. Write and read back approach clearance then fly ILS 21 into KGEG

2. (Solo)

Come up with a plan with your instructor to practice what you learned today

FLIGHT

Plan on incorporating an arrival in at least one of your three cross countries

Lesson Tasks and Completion Standards

Review		
Task	**Element**	**Completion Standards**
Checklists	Perform all checklists appropriate for the flight	**Perform**
Preflight & Planning	Instrument Check	**Perform**
Taxiing	Before Take off Checklist- Brief instrument departure, rate of climb required, emergency brief	**Perform**
Planning and Preflight	Obtain Weather Data, Performance Numbers and Weight & Balance, NOTAMS	**Perform**
Basic Airmanship	Exercising PIC authority in control of the aircraft, situational awareness and communication	**Perform**
Instrument Straight and Level Flight	Use attitude indicator to set level flight, cross check with altimeter, airspeed and vertical speed (+/- 100 ft)	**Perform**
	Use of trim in straight and level flight to relieve control pressures.	**Perform**
Instrument Climbs and Descents	Set proper pitch and power for appropriate rate of climb/ descent	**Perform**
	Level off altitude +/- 100 ft, airspeed +/- 10 kt, heading +/- 10 degrees	**Perform**
Instrument Turns	Set proper bank and pitch for level, coordinated, standard rate turns.	**Perform**
	Roll out heading +/- 10 degrees, altitude +/- 100 ft, airspeed +/- 10 kt	**Perform**
Communications	Towered and Non- Towered Operations- Receiving and complying with an IFR clearance	**Perform**
	Appropriate ATC communications and proper communication phraseology	**Perform**
Navigation	Load a flight plan using GPS waypoints and NAVAIDs	**Perform**
Precision and Non-Precision Approaches	Load an approach in the flight plan, or use appropriate NAVAIDS	**Perform**
	Select, tune, identify and confirm the operational status of navigation equipment	**Perform**
	Brief the approach	**Perform**
	Configure the airplane and set pitch and power settings for stabilized descent	**Perform**
	Appropriate communications with ATC	**Perform**
	Understand and comply ATC instructions	**Perform**
	Verify all checklists and callouts	**Perform**
	Maintain altitude +/- 100 ft, heading +/- 10 deg, airspeed +/- 10 kts, prior to beginning the final approach segment	**Perform**
	Activate approach when cleared for the approach	**Perform**
	Apply adjustments to published MDA or DA and visibility criteria for approach category, NOTAMS, inoperative equipment or visual aids etc.	**Perform**
	Final approach segment – maintain no more than a ¾ scale deflection of the FDI, maintain airspeed +/- 10 kt,	**Perform**
	Do not descend below required altitudes	**Perform**
	Apply wind correction for final approach course	**Perform**
	Level off at MDA, altitude -0/+100 until visual references are visible or Fly to DA and if required visual references are visible, make a normal descent to land	**Perform**
	Execute a missed approach procedure if required visual references are not distinctly visible and identifiable by the missed approach point or DA	**Perform**
Circle to Land Approach	Select and comply with the circling approach procedure considering turbulence, windshear, and the maneuvering capabilities of the airplane.	**Perform**
	Confirm the direction of traffic and adhere to all restrictions and instructions issued by ATC or instructor	**Perform**
	Maneuver the airplane, at or above the MDA, 90° or more from the final approach course, on a flightpath permitting a normal landing on a suitable runway.	**Perform**
	Avoid circling beyond visibility requirements	**Perform**

	Maintain the appropriate circling altitude until in a position from which a descent to a normal landing can be made.	**Perform**
	Maintain altitude +100/-0 feet until a descent to a normal landing can be made.	**Perform**
Missed Approach	Initiate the missed approach promptly by applying power, establishing a climb attitude, and configuring the airplane in accordance with the airplane's manufacturer's recommendations.	**Perform**
	Report to ATC upon beginning the missed approach procedure.	**Perform**
	Comply with the published or alternate missed approach procedure.	**Perform**
	Advise ATC or the evaluator if unable to comply with a clearance, restriction, or climb gradient.	**Perform**
	Follow the recommended checklist items appropriate to the missed approach/go-around procedure.	**Perform**
	Request, if appropriate, ATC clearance to the alternate airport, clearance limit, or as directed by the evaluator.	**Perform**
	Maintain the recommended airspeed ±10 knots; heading, course, or bearing ±10°; and altitude(s) ±100 feet during the missed approach procedure.	**Perform**
	Use an MFD and other graphical navigation displays, if installed, to monitor position and track to help navigate the missed approach.	**Perform**

New		
Task	**Element**	**Completion Standards**
Arrivals	Plan and file appropriate arrival for route of flight, type of aircraft, altitude, airspeed and equipment on board	Practice
	Obtain clearance and load arrival into the GPS properly or required NAVAIDs	Practice
	Brief arrival and load any required frequencies	Practice
	Fly the arrival following the arrival plate	Practice
	Navigate from the arrival to the approach segment of the flight by following ATC instructions	Practice
Risk Management	Identify, assess, and mitigate risks encompassing: • Failure to meet arrival requirements • Failure to recognize limitations of traffic avoidance equipment • Failure to use see and avoid techniques when possible • Failure to communicate with ATC or follow published procedures	Practice

Stage 2 Grade Sheet

D	E	Pr	Pe	No	**Preflight Prep**
					Weather Information & NOTAMS
					Pilot Qualifications
					Airworthiness Requirements
					Performance and Limitations
					Operation of Systems
					File IFR Flight Plan

D	E	Pr	Pe	No	**Preflight/Postflight Procedures**
					Preflight Assessment
					Engine Start & Taxi
					Cockpit Management
					Checklist Use
					Compliance with Clearances
					Parking & Securing

D	E	Pr	Pe	No	**Approaches**
					Precision- ILS or WAAS approach
					Non Precision- Localizer,VOR, GPS, or NDB approach
					Missed Approach
					Circling Approach
					Loss of Pri. Attitude Approach
					Holding Procedures
					Single Engine Approach

D	E	Pr	Pe	No	**Navigation**
					GPS Use
					NAVAID Use
					Lost Comm Procedures

D	E	Pr	Pe	No	**Basic Instrument Fundamentals**
					Instrument Cockpit Check
					Straight and Level Flight
					Change of Airspeed
					Constant Airspeed Climb & Descent
					Constant Rate Climb & Descent
					Timed Turns to a Magnetic Heading
					Recovery From Unusual Attitudes
					Intercepting and Tracking Courses
					Vertical S Maneuvers
					Departure Procedures
					Arrival Procedures

D	E	Pr	Pe	No	**Basic Airmanship**
					Normal & Cross Wind Takeoffs
					Normal & Cross Wind Landings from an Approach
					Equipment Malfunction

D	E	Pr	Md	No	**Resource/Risk Management**
					Decision Making
					Risk Management
					Situational Awareness
					Resource Management
					Task Management
					Automation Management

D	E	Pr	Md	No	**Additional Items**

Date: _____ Lesson(s): _____ Make Model: _____ N#: _____

Profile/Route: _____

	Total	Instruction Received	Day TO/Lndgs.	PIC	XC Instruct. Received	XC Solo/PIC	Simulated Instrument	Instrument	Night Instruct. Rcvd.	Night TO/Lndgs.	Night PIC
Airplanes											
ATD											

I certify I have received/performed the training indicated above.

Customer:_____ Date:_____

Instructor:_____ Date:_____

PHASE 2	INSTRUMENT AIRPLANE
STAGE 2	**Instrument Procedures**
Prereq.	You must have successfully practiced and been introduced to all tasks for this stage (lessons 6-14). You must demonstrate proficiency on tasks lists below prior to your Stage 2 Check.
Objective	Demonstrate proficiency and competency as pilot in command to continue to next stage.
Scenario	You will perform a flight from your home airport to an appropriate practice area and return in the simulator or aircraft as determined by your evaluator. Prior to the evaluation, you will calculate weight and balance for yourself and the evaluator in an assigned aircraft. Obtain weather information for the day of the stage check.

GROUND EVALUATION [1H30]

Completion Standards: Demonstrates satisfactory knowledge and basic understanding of the topics and tasks listed below. (S=satisfactory; U=unsatisfactory)

S	U		S	U	
		Preflight Planning			**Instrument Procedures**
		Obtaining Weather Information			Holds and Arcs entries and wind correction
		Obtain NOTAMs/TFRs			Approach Chart Familiarization
		Computing Weight & Balance			Departure and Arrival Chart Familiarization
		Filing an IFR Flight Plan			Alternate Requirements
					Lost Comm Procedures
S	**U**	**Special Emphasis Areas**			PIC emergency authority
		Collision Avoidance			Required Reports

AATD or AIRPLANE EVALUATION [1H30]

Completion Standards: Maintain altitude within 150 feet, airspeed within 10 knots, heading within 10 degrees, and complete stable approaches, communicate and comply with ATC instructions, situational awareness, and SRM. (S=satisfactory; U=unsatisfactory)

S	U		S	U	
		General			**Area of Operations**
		Use of Checklists			Fundamentals of Instrument Flight
		Instrument Cockpit Check			Departure and/or Obstacle Departure Procedure
		IFR clearances and ATC instructions			Holds
					Arcs
S	**U**	**Navigation**			Precision Approaches
		VOR Navigation			Non- Precision Approaches
		GPS Navigation			Circle to Land
		Departure and Arrival Plates and Instructions			Missed Approach
		Approach Plates and Instructions			Diversion
		Enroute Charts			Lost Comm Procedures
					Autopilot Procedures (If applicable)
					Systems Failure- Precision and Non- precision Approach Partial Panel

Instrument Cross Country

PREREQUISITES

Completed Stage One & Stage Two Lessons

HOME STUDY

IFH: 10-2 through 10-5

PRIMARY TASKS

Cross-Country Flight Planning (New)

Obtain IFR Clearance (Towered and Non-towered airport)

Load Flight Plans Using NAVAIDs and/or GPS

Instrument Taxi Check

Instrument Departure Brief

STAR Procedures

Approach Procedures

Intercepting and Tracking an Arc

OBJECTIVE

Learn how to plan, conduct, and safely fly cross- country flights to other airports using GPS, radio navigation and victor airways

DESCRIPTION

From planning to touchdown you are going to experience every part of an IFR flight first hand in order to put together all the elements of your training so far.

PREFLIGHT DISCUSSION

Develop and demonstrate an understanding of characteristics associated with these tasks:

- Cross-Country Flight Planning: Route planning, including consideration of special use airspace, fuel planning, altitude selection, elements of an IFR flight plan
- NOTAMS: Do any affect the airways or approaches you anticipate using?
- Non- Towered Airports: What are different ways to pick up an IFR clearance
- Diversion: Avoiding automation distractions, communicating and complying with ATC instructions

SIMULATOR

1. (Dual) Redbird Flight 15:

Create a flight plan for KHXD- KCHS via BAGGY.DDENA1 arrival and expect the VOR Rwy 15 approach via the arc. (The ILS is out of service)

Ceilings in the area are 400 overcast, winds are 190@8, Visibility 3 SM

Departure	Enroute/Practice Area	Arrival
Normal Takeoff/ Departure	Focus on pitch attitudes, altitude control and staying ahead of the airplane	Fly the Baggy Arrival and VOR rwy 15 via the ARC

2. (Solo)

Plan and fly your assigned cross-country from your home airport.

FLIGHT

Plan a flight with 3 airports at least 50 nm apart- at least 1 towered airport, and 1 non- towered airport. Assume ceilings in the area are overcast at 800.

Departure	Enroute/Practice Area	Arrival
Practice filing IFR flight plans for each leg and picking up clearances at towered and non-towered airports	Include in your planning an approach with a DME arc.	Plan 3 different types of approaches, anticipate which ones to use based on winds and weather.

Lesson Tasks and Completion Standards

Review		
Task	**Element**	**Completion Standards**
Checklists	Perform all checklists appropriate for the flight	**Perform**
Preflight & Planning	Instrument Check	**Perform**
Taxiing	Before Take off Checklist- Brief instrument departure, rate of climb required, emergency brief	**Perform**
Planning and Preflight	Obtain Weather Data, Performance Numbers and Weight & Balance, NOTAMS	**Perform**
Basic Airmanship	Exercising PIC authority in control of the aircraft, situational awareness and communication	**Perform**
Instrument Straight and Level Flight	Use attitude indicator to set level flight, cross check with altimeter, airspeed and vertical speed (+/- 100 ft)	**Perform**
	Use of trim in straight and level flight to relieve control pressures.	**Perform**
Instrument Climbs and Descents	Set proper pitch and power for appropriate rate of climb/ descent	**Perform**
	Level off altitude +/- 100 ft, airspeed +/- 10 kt, heading +/- 10 degrees	**Perform**
Instrument Turns	Set proper bank and pitch for level, coordinated, standard rate turns.	**Perform**
	Roll out heading +/- 10 degrees, altitude +/- 100 ft, airspeed +/- 10 kt	**Perform**
Communications	Towered and Non- Towered Operations- Receiving and complying with an IFR clearance	**Perform**
	Appropriate ATC communications and proper communication phraseology	**Perform**
Navigation	Load a flight plan using GPS waypoints and NAVAIDs	**Perform**
Precision and Non-Precision Approaches	Load an approach in the flight plan, or use appropriate NAVAIDS	**Perform**
	Select, tune, identify and confirm the operational status of navigation equipment	**Perform**
	Brief the approach	**Perform**
	Configure the airplane and set pitch and power settings for stabilized descent	**Perform**
	Appropriate communications with ATC	**Perform**
	Understand and comply ATC instructions	**Perform**
	Verify all checklists and callouts	**Perform**
	Maintain altitude +/- 100 ft, heading +/- 10 deg, airspeed +/- 10 kts, prior to beginning the final approach segment	**Perform**
	Activate approach when cleared for the approach	**Perform**
	Apply adjustments to published MDA or DA and visibility criteria for approach category, NOTAMS, inoperative equipment or visual aids etc.	**Perform**
	Final approach segment – maintain no more than a ¾ scale deflection of the FDI, maintain airspeed +/- 10 kt,	**Perform**
	Do not descend below required altitudes	**Perform**
	Apply wind correction for final approach course	**Perform**
	Level off at MDA, altitude -0/+100 until visual references are visible or Fly to DA and if required visual references are visible, make a normal descent to land	**Perform**
	Execute a missed approach procedure if required visual references are not distinctly visible and identifiable by the missed approach point or DA	**Perform**
Circle to Land Approach	Select and comply with the circling approach procedure considering turbulence, windshear, and the maneuvering capabilities of the airplane.	**Perform**
	Confirm the direction of traffic and adhere to all restrictions and instructions issued by ATC or instructor	**Perform**
	Maneuver the airplane, at or above the MDA, 90° or more from the final approach course, on a flightpath permitting a normal landing on a suitable runway.	**Perform**
	Avoid circling beyond visibility requirements	**Perform**

	Maintain the appropriate circling altitude until in a position from which a descent to a normal landing can be made.	**Perform**
	Maintain altitude +100/-0 feet until a descent to a normal landing can be made.	**Perform**
Missed Approach	Initiate the missed approach promptly by applying power, establishing a climb attitude, and configuring the airplane in accordance with the airplane's manufacturer's recommendations.	**Perform**
	Report to ATC upon beginning the missed approach procedure.	**Perform**
	Comply with the published or alternate missed approach procedure.	**Perform**
	Advise ATC or the evaluator if unable to comply with a clearance, restriction, or climb gradient.	**Perform**
	Follow the recommended checklist items appropriate to the missed approach/go-around procedure.	**Perform**
	Request, if appropriate, ATC clearance to the alternate airport, clearance limit, or as directed by the evaluator.	**Perform**
	Maintain the recommended airspeed ±10 knots; heading, course, or bearing ±10°; and altitude(s) ±100 feet during the missed approach procedure.	**Perform**
	Use an MFD and other graphical navigation displays, if installed, to monitor position and track to help navigate the missed approach.	**Perform**
Departures and Arrivals	Plan and file appropriate departure or arrival for route of flight, type of aircraft, altitude, airspeed and equipment on board	**Perform**
	Obtain clearance and load departure or arrival into the GPS properly or required NAVAIDs	**Perform**
	Brief departure or arrival and load any required frequencies	**Perform**
	Fly the departure or arrival following the navigation plate	**Perform**
	Navigate from the departure or arrival to the next segment of the flight by following ATC instructions	**Perform**

New		
Task	**Element**	**Completion Standards**
Cross Country Flight Planning	Update fuel planning/manage fuel.	Practice
	Select appropriate routes, altitudes, and checkpoints.	Practice
	Recalculate fuel reserves based on scenario.	Practice
	Create and file an IFR flight plan.	Practice
	Interpret departure, enroute, arrival route with reference to proper charts.	Practice
	Explain or demonstrate diversion to alternate.	Practice
	Applies pertinent information from Chart Supplement Guide, NOTAMs relative to airport, runway and taxiway closures; and other flight publications.	Practice
Instrument Navigation	Prepare a document or electronic equivalent to be used in flight for comparisons with planned fuel usages and times over waypoints while using instrument navigation and GPS	Practice
Navigation & Radar Services	Demonstrate the ability to use installed electronic navigation system.	Practice
	Locate the airplane's position using the electronic navigation and/or NAVAIDs	Practice
	Intercept and track a given course, radial, or bearing, as appropriate.	Practice
	Recognize and describe the indication of station passage, if appropriate.	Practice
	Recognize signal loss and take appropriate action.	Practice
	Use proper communication procedures when utilizing radar services.	Practice
	Maintain the appropriate altitude, ±100 feet and headings ±10°.	Practice
Diversion	Select an appropriate diversion airport and route.	Practice
	Make an accurate estimate of heading, groundspeed, arrival time, and fuel consumption to the divert airport.	Practice
	Maintain the appropriate altitude, ±100 feet and heading, ±10°.	Practice
Risk Management	Identify, assess and mitigate risks encompassing: • Recognizing a deteriorating situation and seeking assistance • Task management • Cockpit management and organization	Practice

	• Situations that can affect physiology and degrade instrument cross-check. • Spatial disorientation and optical illusions. • Flying unfamiliar airplanes, or operating with unfamiliar flight display systems and avionics.	

Instrument Cross Country

PREREQUISITES

Completed Stage One & Stage Two Lessons

HOME STUDY

Airplane POH

PRIMARY TASKS

Cross-Country Flight Planning (New)

Obtain IFR Clearance (Towered and Non-towered airport)

Load Flight Plans Using NAVAIDs and/or GPS

Instrument Taxi Check

Instrument Departure Brief

STAR Procedures

Approach Procedures

Intercepting and Tracking an Arc

Diversion

OBJECTIVE

Learn how to plan, conduct, and safely fly cross- country flights to other airports using GPS, radio navigation and victor airways

DESCRIPTION

From planning to touchdown you are going to experience every part of an IFR flight first hand in order to put together all the elements of your training so far.

PREFLIGHT DISCUSSION

Develop and demonstrate an understanding of characteristics associated with these tasks:

- Cross-Country Flight Planning: Route planning, including consideration of special use airspace, fuel planning, altitude selection, elements of an IFR flight plan
- NOTAMS: Do any affect the airways or approaches you anticipate using?

SIMULATOR

1. (Dual) Redbird Flight 16:

Create an IFR flight plan from KPSF- KALB (Alternate KGFL). Winds are 300@20G25, ceilings are 400 overcast, visibility is 2 sm, so you plan on the RNAV 28 approach. The ceilings are too low so you proceed on the published missed approach and decide to head to KGFL for the ILS 1 circle to land 30 instead. Ceilings at KGFL are 800 overcast, visibility is 2 SM, winds are 290@10G15

Departure	Enroute/Practice Area	Arrival
Normal Takeoff and Departure		Plan for RNAV 28, missed then ILS 1 circle to land 30 at KGFL

2. (Solo):

Plan and fly your assigned cross - country from your home airport.

FLIGHT

Plan a flight to an airport at least 50 nm away, include an alternate in your planning. 1 towered airport, and 1 non-towered airport. Assume weather in the area is overcast 600 and 3 sm visibility. (winds are whatever is current for the flight)

Departure	Enroute/Practice Area	Arrival
Practice filing IFR flight plans for each leg and picking up clearances at towered and non-towered airports	Your instructor will provide a opportunity for a possible diversion and/or missed approach	Plan 2 different types of approaches, anticipate which ones to use based on winds and weather. One approach should be circle to land - decide which one based on the direction you are coming from or which one makes the most sense with weather.

Lesson Tasks and Completion Standards

Review		
Task	**Element**	**Completion Standards**
Checklists	Perform all checklists appropriate for the flight	**Perform**
Preflight & Planning	Instrument Check	**Perform**
Taxiing	Before Take off Checklist- Brief instrument departure, rate of climb required, emergency brief	**Perform**
Planning and Preflight	Obtain Weather Data, Performance Numbers and Weight & Balance, NOTAMS	**Perform**
Basic Airmanship	Exercising PIC authority in control of the aircraft, situational awareness and communication	**Perform**
Instrument Straight and Level Flight	Use attitude indicator to set level flight, cross check with altimeter, airspeed and vertical speed (+/- 100 ft)	**Perform**
	Use of trim in straight and level flight to relieve control pressures.	**Perform**
Instrument Climbs and Descents	Set proper pitch and power for appropriate rate of climb/ descent	**Perform**
	Level off altitude +/- 100 ft, airspeed +/- 10 kt, heading +/- 10 degrees	**Perform**
Instrument Turns	Set proper bank and pitch for level, coordinated, standard rate turns.	**Perform**
	Roll out heading +/- 10 degrees, altitude +/- 100 ft, airspeed +/- 10 kt	**Perform**
Communications	Towered and Non- Towered Operations- Receiving and complying with an IFR clearance	**Perform**
	Appropriate ATC communications and proper communication phraseology	**Perform**
Navigation	Load a flight plan using GPS waypoints and NAVAIDs	**Perform**
Precision and Non-Precision Approaches	Load an approach in the flight plan, or use appropriate NAVAIDS	**Perform**
	Select, tune, identify and confirm the operational status of navigation equipment	**Perform**
	Brief the approach	**Perform**
	Configure the airplane and set pitch and power settings for stabilized descent	**Perform**
	Appropriate communications with ATC	**Perform**
	Understand and comply ATC instructions	**Perform**
	Verify all checklists and callouts	**Perform**
	Maintain altitude +/- 100 ft, heading +/- 10 deg, airspeed +/- 10 kts, prior to beginning the final approach segment	**Perform**
	Activate approach when cleared for the approach	**Perform**
	Apply adjustments to published MDA or DA and visibility criteria for approach category, NOTAMS, inoperative equipment or visual aids etc.	**Perform**
	Final approach segment – maintain no more than a ¾ scale deflection of the FDI, maintain airspeed +/- 10 kt,	**Perform**
	Do not descend below required altitudes	**Perform**
	Apply wind correction for final approach course	**Perform**
	Level off at MDA, altitude -0/+100 until visual references are visible or Fly to DA and if required visual references are visible, make a normal descent to land	**Perform**
	Execute a missed approach procedure if required visual references are not distinctly visible and identifiable by the missed approach point or DA	**Perform**
Circle to Land Approach	Select and comply with the circling approach procedure considering turbulence, windshear, and the maneuvering capabilities of the airplane.	**Perform**
	Confirm the direction of traffic and adhere to all restrictions and instructions issued by ATC or instructor	**Perform**
	Maneuver the airplane, at or above the MDA, 90° or more from the final approach course, on a flightpath permitting a normal landing on a suitable runway.	**Perform**
	Avoid circling beyond visibility requirements	**Perform**

	Maintain the appropriate circling altitude until in a position from which a descent to a normal landing can be made.	**Perform**
	Maintain altitude +100/-0 feet until a descent to a normal landing can be made.	**Perform**
Missed Approach	Initiate the missed approach promptly by applying power, establishing a climb attitude, and configuring the airplane in accordance with the airplane's manufacturer's recommendations.	**Perform**
	Report to ATC upon beginning the missed approach procedure.	**Perform**
	Comply with the published or alternate missed approach procedure.	**Perform**
	Advise ATC or the evaluator if unable to comply with a clearance, restriction, or climb gradient.	**Perform**
	Follow the recommended checklist items appropriate to the missed approach/go-around procedure.	**Perform**
	Request, if appropriate, ATC clearance to the alternate airport, clearance limit, or as directed by the evaluator.	**Perform**
	Maintain the recommended airspeed ±10 knots; heading, course, or bearing ±10°; and altitude(s) ±100 feet during the missed approach procedure.	**Perform**
	Use an MFD and other graphical navigation displays, if installed, to monitor position and track to help navigate the missed approach.	**Perform**
Departures and Arrivals	Plan and file appropriate departure or arrival for route of flight, type of aircraft, altitude, airspeed and equipment on board	**Perform**
	Obtain clearance and load departure or arrival into the GPS properly or required NAVAIDs	**Perform**
	Brief departure or arrival and load any required frequencies	**Perform**
	Fly the departure or arrival following the navigation plate	**Perform**
	Navigate from the departure or arrival to the next segment of the flight by following ATC instructions	**Perform**

New		
Task	**Element**	**Completion Standards**
Cross Country Flight Planning	Update fuel planning/manage fuel.	Practice
	Select appropriate routes, altitudes, and checkpoints.	Practice
	Recalculate fuel reserves based on scenario.	Practice
	Create and file an IFR flight plan.	Practice
	Interpret departure, enroute, arrival route with reference to proper charts.	Practice
	Explain or demonstrate diversion to alternate.	Practice
	Applies pertinent information from Chart Supplement Guide, NOTAMs relative to airport, runway and taxiway closures; and other flight publications.	Practice
Instrument Navigation	Prepare a document or electronic equivalent to be used in flight for comparisons with planned fuel usages and times over waypoints while using instrument navigation and GPS	Practice
Navigation & Radar Services	Demonstrate the ability to use installed electronic navigation system.	Practice
	Locate the airplane's position using the electronic navigation and/or NAVAIDs	Practice
	Intercept and track a given course, radial, or bearing, as appropriate.	Practice
	Recognize and describe the indication of station passage, if appropriate.	Practice
	Recognize signal loss and take appropriate action.	Practice
	Use proper communication procedures when utilizing radar services.	Practice
	Maintain the appropriate altitude, ±100 feet and headings ±10°.	Practice
Diversion	Select an appropriate diversion airport and route.	Practice
	Make an accurate estimate of heading, groundspeed, arrival time, and fuel consumption to the divert airport.	Practice
	Maintain the appropriate altitude, ±100 feet and heading, ±10°.	Practice
Risk Management	Identify, assess and mitigate risks encompassing: • Recognizing a deteriorating situation and seeking assistance • Task management • Cockpit management and organization	Practice

	• Situations that can affect physiology and degrade instrument cross-check. • Spatial disorientation and optical illusions. • Flying unfamiliar airplanes, or operating with unfamiliar flight display systems and avionics.	

Instrument Cross Country

PREREQUISITES

Completed Stage One & Stage Two Lessons

HOME STUDY

Airplane POH

PRIMARY TASKS

Cross-Country Flight Planning

Obtain IFR Clearance (Towered and Non-towered airport)

Load Flight Plans Using NAVAIDs and/or GPS

Instrument Taxi Check

Instrument Departure Brief

STAR Procedures

Approach Procedures

Intercepting and Tracking an Arc

Diversion

OBJECTIVE

Learn how to plan, conduct, and safely fly cross- country flights to other airports using GPS, radio navigation and victor airways

DESCRIPTION

Now that you have a few local cross-countries under your belt it's time to move up to the big leagues. Class B! In todays cross country you will fly to 3 airports, with a different approach at each one, a total of 250 nm or greater along airways.

PREFLIGHT DISCUSSION

Develop and demonstrate an understanding of characteristics associated with these tasks:

- Cross-Country Flight Planning: Route planning, including consideration of special use airspace, fuel planning, altitude selection, elements of an IFR flight plan
- NOTAMS: Do any affect the airways or approaches you anticipate using?
- Departure and/or Arrival: if applicable/practical include in your flight plan.

SIMULATOR

1. (Dual) Redbird Flight 17:

(**This would NOT meet criteria for the cross country- for practice purposes only**)

Create an IFR flight plan from KUIL- TOU.JAWBN6- KSEA – 34R.OZWLD1.OZWLD- KUIL

Winds and ceilings in the area are 360@6, overcast at 1100, Visibility 3 SM

Departure	Enroute/Practice Area	Arrival
KUIL Rwy 04- Normal Takeoff and Departure	JAWBN 6 arrival into KSEA Depart KSEA- OZWLD 1 Departure	Arrive KUIL

2. (Solo):

Plan and fly your assigned cross- country from your home airport.

3. GIFT Module

FLIGHT

Plan a flight to a total of 3 airports, 250 nm or greater total along airways, fly 3 different types of approaches, 1 at each airport. Use current weather along your route.

Departure	Enroute/Practice Area	Arrival
Practice filing IFR flight plans for each leg and picking up clearances at towered and non-towered airports	Your instructor will give you a Lost Comm scenario enroute for you to describe what you would do in that situation.	Plan 3 different types of approaches, anticipate which ones to use based on winds and weather

Lesson Tasks and Completion Standards

Review		
Task	**Element**	**Completion Standards**
Checklists	Perform all checklists appropriate for the flight	**Perform**
Preflight & Planning	Instrument Check	**Perform**
Taxiing	Before Take off Checklist- Brief instrument departure, rate of climb required, emergency brief	**Perform**
Planning and Preflight	Obtain Weather Data, Performance Numbers and Weight & Balance, NOTAMS	**Perform**
Basic Airmanship	Exercising PIC authority in control of the aircraft, situational awareness and communication	**Perform**
Instrument Straight and Level Flight	Use attitude indicator to set level flight, cross check with altimeter, airspeed and vertical speed (+/- 100 ft)	**Perform**
	Use of trim in straight and level flight to relieve control pressures.	**Perform**
Instrument Climbs and Descents	Set proper pitch and power for appropriate rate of climb/ descent	**Perform**
	Level off altitude +/- 100 ft, airspeed +/- 10 kt, heading +/- 10 degrees	**Perform**
Instrument Turns	Set proper bank and pitch for level, coordinated, standard rate turns.	**Perform**
	Roll out heading +/- 10 degrees, altitude +/- 100 ft, airspeed +/- 10 kt	**Perform**
Communications	Towered and Non- Towered Operations- Receiving and complying with an IFR clearance	**Perform**
	Appropriate ATC communications and proper communication phraseology	**Perform**
Navigation	Load a flight plan using GPS waypoints and NAVAIDs	**Perform**
Precision and Non-Precision Approaches	Load an approach in the flight plan, or use appropriate NAVAIDS	**Perform**
	Select, tune, identify and confirm the operational status of navigation equipment	**Perform**
	Brief the approach	**Perform**
	Configure the airplane and set pitch and power settings for stabilized descent	**Perform**
	Appropriate communications with ATC	**Perform**
	Understand and comply ATC instructions	**Perform**
	Verify all checklists and callouts	**Perform**
	Maintain altitude +/- 100 ft, heading +/- 10 deg, airspeed +/- 10 kts, prior to beginning the final approach segment	**Perform**
	Activate approach when cleared for the approach	**Perform**
	Apply adjustments to published MDA or DA and visibility criteria for approach category, NOTAMS, inoperative equipment or visual aids etc.	**Perform**
	Final approach segment – maintain no more than a ¾ scale deflection of the FDI, maintain airspeed +/- 10 kt,	**Perform**
	Do not descend below required altitudes	**Perform**
	Apply wind correction for final approach course	**Perform**
	Level off at MDA, altitude -0/+100 until visual references are visible or Fly to DA and if required visual references are visible, make a normal descent to land	**Perform**
	Execute a missed approach procedure if required visual references are not distinctly visible and identifiable by the missed approach point or DA	**Perform**
Circle to Land Approach	Select and comply with the circling approach procedure considering turbulence, windshear, and the maneuvering capabilities of the airplane.	**Perform**
	Confirm the direction of traffic and adhere to all restrictions and instructions issued by ATC or instructor	**Perform**
	Maneuver the airplane, at or above the MDA, 90° or more from the final approach course, on a flightpath permitting a normal landing on a suitable runway.	**Perform**
	Avoid circling beyond visibility requirements	**Perform**

	Maintain the appropriate circling altitude until in a position from which a descent to a normal landing can be made.	**Perform**
	Maintain altitude +100/-0 feet until a descent to a normal landing can be made.	**Perform**
Missed Approach	Initiate the missed approach promptly by applying power, establishing a climb attitude, and configuring the airplane in accordance with the airplane's manufacturer's recommendations.	**Perform**
	Report to ATC upon beginning the missed approach procedure.	**Perform**
	Comply with the published or alternate missed approach procedure.	**Perform**
	Advise ATC or the evaluator if unable to comply with a clearance, restriction, or climb gradient.	**Perform**
	Follow the recommended checklist items appropriate to the missed approach/go-around procedure.	**Perform**
	Request, if appropriate, ATC clearance to the alternate airport, clearance limit, or as directed by the evaluator.	**Perform**
	Maintain the recommended airspeed ±10 knots; heading, course, or bearing ±10°; and altitude(s) ±100 feet during the missed approach procedure.	**Perform**
	Use an MFD and other graphical navigation displays, if installed, to monitor position and track to help navigate the missed approach.	**Perform**
Departures and Arrivals	Plan and file appropriate departure or arrival for route of flight, type of aircraft, altitude, airspeed and equipment on board	**Perform**
	Obtain clearance and load departure or arrival into the GPS properly or required NAVAIDs	**Perform**
	Brief departure or arrival and load any required frequencies	**Perform**
	Fly the departure or arrival following the navigation plate	**Perform**
	Navigate from the departure or arrival to the next segment of the flight by following ATC instructions	**Perform**

New		
Task	**Element**	**Completion Standards**
Cross Country Flight Planning	Update fuel planning/manage fuel.	Practice
	Select appropriate routes, altitudes, and checkpoints.	Practice
	Recalculate fuel reserves based on scenario.	Practice
	Create and file an IFR flight plan.	Practice
	Interpret departure, enroute, arrival route with reference to proper charts.	Practice
	Explain or demonstrate diversion to alternate.	Practice
	Applies pertinent information from Chart Supplement Guide, NOTAMs relative to airport, runway and taxiway closures; and other flight publications.	Practice
Instrument Navigation	Prepare a document or electronic equivalent to be used in flight for comparisons with planned fuel usages and times over waypoints while using instrument navigation and GPS	Practice
Navigation & Radar Services	Demonstrate the ability to use installed electronic navigation system.	Practice
	Locate the airplane's position using the electronic navigation and/or NAVAIDs	Practice
	Intercept and track a given course, radial, or bearing, as appropriate.	Practice
	Recognize and describe the indication of station passage, if appropriate.	Practice
	Recognize signal loss and take appropriate action.	Practice
	Use proper communication procedures when utilizing radar services.	Practice
	Maintain the appropriate altitude, ±100 feet and headings ±10°.	Practice
Diversion	Select an appropriate diversion airport and route.	Practice
	Make an accurate estimate of heading, groundspeed, arrival time, and fuel consumption to the divert airport.	Practice
	Maintain the appropriate altitude, ±100 feet and heading, ±10°.	Practice
Risk Management	Identify, assess and mitigate risks encompassing: • Recognizing a deteriorating situation and seeking assistance • Task management • Cockpit management and organization	Practice

	• Situations that can affect physiology and degrade instrument cross-check. • Spatial disorientation and optical illusions. • Flying unfamiliar airplanes, or operating with unfamiliar flight display systems and avionics.	

Stage 3 Grade Sheet

D	E	Pr	Pe	No	**Preflight Prep**
					Pilot Qualifications
					Weather Information & NOTAMS
					Airworthiness Requirements
					Cross Country Flight Planning
					Performance & Limitations
					Operation of Systems
					File IFR Flight Plan

D	E	Pr	Pe	No	**Preflight/Postflight Procedures**
					Preflight Assessment
					Cockpit Management
					Checklist Use
					Engine Start & Taxi
					Parking & Securing
					Towered and Non- Towered Ops

D	E	Pr	Pe	No	**Approaches**
					Precision- ILS or WAAS approach
					Non Precision- Localizer,VOR, GPS, or NDB approach
					Missed Approach
					Circling Approach
					Loss of Pri. Attitude Approach
					Holding Procedures
					Arc Procedures
					Single Engine Approach

D	E	Pr	Pe	No	**Navigation**
					GPS Use
					NAVAID use
					Diversion
					Lost Comm Procedures

D	E	Pr	Pe	No	**Basic Instrument Fundamentals**
					Instrument Cockpit Check
					Straight and Level Flight
					Change of Airspeed
					Constant Airspeed Climb & Descent
					Constant Rate Climb & Descent
					Timed Turns to a Magnetic Heading
					Recovery From Unusual Attitudes
					Intercepting and Tracking Courses
					Vertical S Maneuvers
					Departure Procedures
					Arrival Procedures
					Constant Arspd. Climbs & Descents
					Turn to Headings
					Unusual Attitude Recovery
					Use of Instrument Charts

D	E	Pr	Pe	No	**Basic Airmanship**
					Normal & Cross Wind Takeoffs
					Normal & Cross Wind Landings From an Approach
					Equipment Malfunction

D	E	Pr	Md	No	**Resource/Risk Management**
					Decision Making
					Situational Awareness
					Resource Management
					Task Management
					Automation Management
					Automation Management

Date: _____ Lesson(s): _____ Make Model: _____ N#: _____

Profile/Route: _____

	Total	Instruction Received	Day TO/Lndgs.	PIC	XC Instruct. Received	XC Solo/PIC	Simulated Instrument	Instrument	Night Instruct. Rcvd.	Night TO/Lndgs.	Night PIC
Airplanes											
ATD											

I certify I have received/performed the training indicated above.

Customer: _____ Date:_____

Instructor: _____ Date:_____

PHASE 2	INSTRUMENT AIRPLANE
STAGE 3	**Putting it all Together**
Prereq.	You must demonstrate proficiency on all Stage 3 tasks (Lessons 18-20) in an airplane prior to the Stage 3 Check.
Objective	You will demonstrate proficiency in all flight tasks learned to date, with emphasis on cross-country flying
Scenario	You will perform a flight from your home airport to an appropriate practice area and return. Prior to the evaluation, you will calculate weight and balance for yourself and the evaluator in an assigned aircraft. Obtain weather information for the day of the stage check.

GROUND EVALUATION [1 HOUR]

Completion Standards: Demonstrates satisfactory knowledge and basic understanding of the topics and tasks listed below. (S=satisfactory; U=unsatisfactory)

S	U	Preflight Planning	S	U	Special Emphasis Areas
		Obtaining Weather Information			Stall/Spin Awareness
		Obtain NOTAMs/TFRs			ADM and Risk Management
		Computing Weight & Balance			SRM
		Filing an IFR Flight Plan			
			S	**U**	**Weather**
S	**U**	**Cross-Country Planning**			Meteorology Charts and Radar
		Calculations: Headings / Times / Fuel			Thunderstorms and Microbursts
		En Route Checkpoints / Hazards			Icing and Freezing Levels
		NOTAMs / TFRs			Weather Systems
		Altitude selection: IFR cruising alt, wind and oxygen requirements			Fog
		Planning an Alternate			Frost
		Activating and Closing IFR flight plan in controlled and uncontrolled airspace			
			S	**U**	**Instrument Procedures**
S	**U**	**Certification and Recency**			Procedures and limitations with non-precision & precision approaches
		Certification Requirements			Differences between LP and LNAV approach
		Recency of Experience			Navigation system annunciations expected during an RNAV approach
		Record Keeping			Elements related to missed approach procedures
					Elements related to circling approach procedures
S	**U**	**Icing**			
		Operational characteristics and limitations of applicable anti-icing and deicing systems			

(Continue to next page for airplane flight evaluation)

AIRPLANE EVALUATION [1H30]

Completion Standards: You will successfully complete this stage check when you can maintain altitude within 100 feet, airspeed within 10 knots, heading with 10 degrees, navigate via instruments and communicate and comply with ATC instructions. (S=satisfactory; U=unsatisfactory)

S	U	General	S	U	Area of Operations
		Use of Checklists			Fundamentals of Instrument Flight
		Instrument Cockpit Check			Departure and/or Obstacle Departure Procedure
		IFR clearances and ATC instructions			Holds

					Arcs
S	**U**	**Navigation**			Precision Approaches
		VOR Navigation			Non- Precision Approaches
		GPS Navigation			Circle to Land
		Departure and Arrival Plates and Instructions			Missed Approach
		Approach Plates and Instructions			Diversion
		Enroute Charts			Lost Comm Procedures
					Autopilot Procedures (If applicable)
S	**U**	**Single Pilot Resource Management**			Systems Failure- Precision and Non- precision Approach Partial Panel
		Decision Making			
		Situational Awareness			
		Resource Management			
		Task Management			
		Automation Management			

Getting Ready for the Big Day

PREREQUISITES

Completion of Stage 1, Stage 2 & Stage 3

HOME STUDY

Knowledge Exam Prep
Oral Exam Prep
Checkride Prep

PRIMARY TASKS

Tasks covered in all previous lessons (refer to the Stage 4 grade sheet and the Airmen Certification Standards)

Mock Oral Test

Mock Checkride

OBJECTIVE

Meet the requirements laid out in the Airmen Certification Standards of all required tasks to ensure a successful Instrument Practical test.

DESCRIPTION

You are nearing the final flights of your instrument pilot flight training. This is your opportunity to fine tune your flying and to prepare for your checkride. During these flights, you should treat your instructor as an observer.

PREFLIGHT DISCUSSION

There is no specific preflight discussion for this lesson. You and your instructor will work together to make sure that you are prepared and ready to complete your stage check and your instrument practical test.

GROUND

Review topics, discuss various situations and scenarios, and prep for your oral exam and check ride.

SIMULATOR

Practice and perform to proficiency tasks as needed, determined by you and your flight instructor.

1. (Dual or Solo) Redbird Instrument Flight 18:
(KTHV-KMDT- KLNS)
Depart KTHV, fly the ILS 13 into KMDT, go missed and fly published hold, proceed to WILEN for the VOR 8 KLNS circle to land 13
Winds 150@6, Ceilings Overcast 200, Visibility 2 SM

Departure	Enroute	Arrival
Depart KTHV Rwy 17 Normal Takeoff and Departure	Fly the ILS 13 at KMDT and go missed, fly published missed	Proceed to WILEN for the VOR 8 at KLNS circle to land 13

2. GIFT Module
Perform Pattern B module, a precision approach module, a non-precision approach module, and Holds module utilizing all three entry types with scores of 80% or higher.

FLIGHT

Tasks as needed, determined by you and your flight instructor. Perform a mock checkride.

Getting Ready for the Big Day

PREREQUISITES

Completion of Stage 1, Stage 2 & Stage 3

HOME STUDY

Knowledge Exam Prep
Oral Exam Prep
Checkride Prep

PRIMARY TASKS

Tasks covered in all previous lessons (refer to the Stage 4 grade sheet and the Airmen Certification Standards)

Mock Oral Test

Mock Checkride

OBJECTIVE

Meet the requirements laid out in the Airmen Certification Standards of all required tasks to ensure a successful instrument practical test.

DESCRIPTION

You are nearing the final flights of your instrument flight training. This is your opportunity to fine tune your flying and to prepare for your checkride. During these flights, you should treat your instructor as an observer and continue to gain confidence as pilot in command. The key to a successful Checkride is to properly prepare and have confidence in your abilities as a pilot.

PREFLIGHT DISCUSSION

There is no specific preflight discussion for this lesson. You and your instructor will work together to make sure that you are prepared and ready to complete your stage check and your private pilot practical test.

GROUND

Review topics, discuss various situations and scenarios, and prep for your oral exam and check ride.

SIMULATOR

Practice and perform to proficiency tasks as needed, determined by you and your flight instructor.

1. (Dual or Solo) Redbird Instrument Flight 19
(KLAL- KPIE – KSRQ)
Depart KLAL- fly the ILS 36 at KPIE, go missed and fly the published hold, proceed to ILS 14 circle to land 32 at KSRQ
Winds 030@10, Overcast 200, Visibility 1 SM

Departure	Enroute	Arrival
KLAL Rwy 05 Normal Takeoff and Departure as needed	Fly the ILS 36 into KPIE go missed and fly published hold,	Proceed to KSRQ for the ILS 14 circle to land 32

2. GIFT Module
Perform any modules needed for practice per the judgement of the IR student and the CFI-I.

(Flight portion continued on next page)

FLIGHT

Tasks as needed, determined by you and your flight instructor. Perform a mock checkride.

Lesson Tasks and Completion Standards

The completion standards for this lesson is satisfactory completion of a mock checkride and grade of perform and manage/decide for all tasks listed in the Stage 4 Grade sheet. Reference the Airmen Certification Standards for mock checkride.

Getting Ready for the Big Day

PREREQUISITES

Completion of Stage 1, Stage 2 & Stage 3

HOME STUDY

Knowledge Exam Prep
Oral Exam Prep
Checkride Prep

PRIMARY TASKS

Tasks covered in all previous lessons (refer to the Stage 4 grade sheet and the Airmen Certification Standards)

Mock Oral Test

Mock Checkride

OBJECTIVE

Meet the requirements laid out in the Airmen Certification Standards of all required tasks to ensure a successful instrument practical test.

DESCRIPTION

You are nearing the final flights of your instrument pilot flight training. This is your opportunity to fine tune your flying and to prepare for your checkride. During these flights, you should treat your instructor as an observer and continue to gain confidence as pilot in command. The key to a successful Checkride is to properly prepare and have confidence in your abilities as a pilot.

PREFLIGHT DISCUSSION

There is no specific preflight discussion for this lesson. You and your instructor will work together to make sure that you are prepared and ready to complete your stage check and your instrument practical test.

GROUND

Review topics, discuss various situations and scenarios, and prep for your oral exam and check ride.

SIMULATOR

Practice and perform to proficiency tasks as needed, determined by you and your flight instructor.

FLIGHT

Tasks as needed, determined by you and your flight instructor. Perform a mock checkride.

Lesson Tasks and Completion Standards

The completion standards for this lesson is satisfactory completion of a mock checkride and grade of perform and manage/decide for all tasks listed in the Stage 4 Grade sheet. Reference the Airmen Certification Standards for mock checkride.

Stage 4 Grade Sheet

D	E	Pr	Pe	No	**Preflight Prep**
					Pilot Qualifications
					Weather Information & NOTAMS
					Airworthiness Requirements
					Cross Country Flight Planning
					Performance & Limitations
					Operation of Systems
					File IFR Flight Plan

D	E	Pr	Pe	No	**Preflight/Postflight Procedures**
					Preflight Assessment
					Cockpit Management
					Checklist Use
					Engine Start & Taxi
					Parking & Securing
					Towered and Non- Towered Ops

D	E	Pr	Pe	No	**Approaches**
					Precision- ILS or WAAS approach
					Non Precision- Localizer,VOR, GPS, or NDB approach
					Missed Approach
					Circling Approach
					Loss of Pri. Attitude Approach
					Single Engine Approach

D	E	Pr	Pe	No	**Navigation**
					GPS Use
					NAVAID use
					Diversion
					Lost Comm Procedures

D	E	Pr	Pe	No	**Instrument Procedures**
					Instrument Cockpit Check
					Straight and Level Flight
					Change of Airspeed
					Constant Airspeed Climb & Descent
					Constant Rate Climb & Descent
					Timed Turns to a Magnetic Heading
					Recovery From Unusual Attitudes
					Intercepting and Tracking Courses
					Use of Instrument Charts
					Departure Procedures
					Arrival Procedures
					Holding Procedures
					Arc Procedures

D	E	Pr	Pe	No	**Basic Airmanship**
					Normal & Cross Wind Takeoffs
					Normal & Cross Wind Landings From an Approach
					Equipment Malfunction

D	E	Pr	Md	No	**Resource/Risk Management**
					Decision Making
					Situational Awareness
					Resource Management
					Task Management
					Automation Management

Date: _____ Lesson(s): _____ Make Model: _____ N#: _____

Profile/Route: _____

	Total	Instruction Received	Day TO/Lndgs.	PIC	XC Instruct. Received	XC Solo/PIC	Simulated Instrument	Instrument	Night Instruct. Rcvd.	Night TO/Lndgs.	Night PIC
Airplanes											
ATD											

I certify I have received/performed the training indicated above.

Customer: _____ Date: _____

Instructor: _____ Date: _____

STAGE CHECK 4 – AIRPLANE

(4 Hour Block)

PHASE 2	INSTRUMENT AIRPLANE
STAGE 4	**FINAL STAGE CHECK**
Prereq.	You must demonstrate proficiency in all tasks and meet FAA Part 61/ 141 minimum training requirements prior to the Final Stage Check (Stage 4).
Objective	You will perform all tasks to FAA Airmen Certification Standards (ACS).
Scenario	You will perform a flight from your home airport to your planned cross-country destination. Calculate weight and balance and performance based on the scenario given by the evaluator. Obtain weather information and calculate performance data for the day of the stage check.
GROUND EVALUATION [2HOURS]	
Completion Standards: Demonstrates satisfactory knowledge and basic understanding of the topics and tasks listed below. (S=satisfactory; U=unsatisfactory)	

U	S	ACS Tasks
		Pilot Qualifications
		Weather Information
		Cross Country Flight Planning
		Aircraft Systems Related to IFR Operations
		Aircraft Flight Instruments and Equipment
		Instrument Flight Deck Check
		Compliance with ATC Clearances
		Holding Procedures
		Instrument Flight
		Recovery from Unusual Attitudes
		Intercepting and Tracking Nav Systems and Arcs
		Departure, Enroute and Arrival Operations
		Nonprecision Approach
		Precision Approach
		Missed Approach
		Circling Approach
		Landing From an Instrument Approach
		Loss of Communications

AIRPLANE EVALUATION [2 HOURS]

Completion Standards: You will successfully complete this stage check when you can perform all tasks to Airmen Certification Standards (ACS) with no assistance from your evaluator. (S=satisfactory; U=unsatisfactory)

U	S	**Preflight Prep**
		Pilot Qualifications
		Weather Information & NOTAMS
		Airworthiness Requirements
		Cross Country Flight Planning
		Performance & Limitations
		Operation of Systems
		File IFR Flight Plan

U	S	**Preflight/Postflight Procedures**
		Preflight Assessment
		Instrument Cockpit Check

U	S	**Basic Airmanship**
		Engine Start
		Taxi
		Checklist Use
		Normal and Cross Wind Takeoffs
		Normal and Cross Wind Landing
		Powerplant Management
		Go-Arounds
		Parking and Securing

U	S	**Airport Operations**
		Communications
		Towered and Non-Towered Ops

U	S	**Navigation**
		Loading a Flightplan
		Instrument Charts- Symbols & Use
		VOR Navigation
		GPS Navigation
		Nav. Systems & Radar Services
		Lost Comm Procedures

U	S	**Basic Instrument Procedures**
		Straight & Level Flight
		Constant Arspd. Climbs & Descents
		Constant Rate Descents
		Turn to Headings
		Unusual Attitude Recovery
		Arcs
		Holds
		Vertical Navigation Planning

U	S	**Approaches**
		Approach Brief
		Non- Precision Approaches
		Circle to Land
		Missed Approach
		Approach via Own Navigation
		Approach via Radar Vectors
		Landing From an Approach

U	S	**Emergency Operations**
		Systems & Equipment Malfunction
		Partial Panel Instrument Flight
		Partial Panel Approach
		ATC Communication

U	S	**Resource/Risk Management**
		Resource Management
		Task Management
		Automation Management
		Cockpit Management

Redbird Flights

Redbird Flight 1:

Starting Point	SLR (Sulfer Springs) VOR, 2000 ft, set for cruise, heading 360
Weather	Overcast 3000
	Winds- 270@10
	Visibility- 5 SM
	Altimeter Setting- 30.02

Redbird Flight 2:

Starting Point	RRS (Wiregrass), 4000, set for cruise, heading 090
Weather	Overcast 2000
	Winds- 190@12
	Visibility- 5 SM
	Altimeter Setting- 30.15

- Clearance (Cairns Departure 125.4) N___ instrument maneuvers approved between the 030- 150 radials of RRS VOR, 10 DME, Maintain block altitude of 4000-6000

Redbird Flight 3:

Starting Point	KHQM (Bowerman) Ramp
Weather	Overcast 1200
	Winds- 050@8
	Visibility- 4 SM
	Altimeter Setting- 29.96
Time	1950Z

- Clearance (Flight Service Station): N__ ATC clears you to the KOLM airport AF, Climb and maintain 5000, Departure Frequency 128.3, Squawk 0643. Clearance void if not off by 2015z_ (10-15 min suggested), Time now 2000z, Advise intentions if not off by 2015z

Redbird Flight 4:

Starting Point	KVNY (Van Nuys) Jet Aviation Ramp
Weather	Overcast 1500
	Winds- 150@5
	Visibility- 3 SM
	Altimeter Setting- 30.09

- Clearance (Van Nuys Clearance Delivery 126.6): N___ is cleared to the KHND airport via the Newhall 9 Departure, Climb via the SID except maintain 7000, expect 13000 10 minutes after departure, squawk 4145 (Discuss how if a departure frequency is not in the clearance that they would look at the departure chart)

Redbird Flight 5:

Starting Point	KRIC (Richmond International) East Ramp 4
Weather	Overcast 2200
	Winds- 270@8
	Visibility- 5 SM
	Altimeter Setting- 30.34

- Clearance (Richmond Clearance Delivery 127.55): N___ is cleared to the KHND airport via the Newhall 9 Departure, Climb via the SID except maintain 7000, expect 13000 10 minutes after departure, squawk 4145

Redbird Flight 6:

Starting Point	KUKI (Ukiah Municipal) Ramp
Weather	Ceilings- Broken 800
	Winds- 300@12
	Visibility – 4 SM
	Altimeter Setting- 29.90
Time	2335Z

- Clearance (Flight Service Station): N____ ATC clears you to the KACV airport, Radar Vectors, V607, ACV, Climb and Maintain 10,000, Departure Frequency Oakland Center 127.8, Squawk 5210. Clearance void if not off by 2345Z . Time now 2330Z. If not off by 2345 advise further intentions by 2350.
- Seattle Center (124.85): N____ Eureka Altimeter 29.95, Advise when you have the weather and say approach request.

  N____ You can expect ILS 32, Be advised 2 aircraft ahead of you went missed and are attempting the approach again.

  N____ Proceed direct to Vomac and hold as published, Expect Further Clearance at ____, Time now_____.

  N____ Frequency Change approve, IFR cancellation on the ground or in the air this frequency.

Redbird Flight 7:

Starting Point	Over CUT airport at 7,700
Weather	Ceilings- Broken 2000
	Winds- 160@8
	Visibility – 5 SM
	Altimeter Setting- 30.27

- Ellsworth Approach (119.5): N____ Cleared to the KRAP airport via track inbound on the 238 radial, arc north west of the Rapid City VOR as published, maintain 7700, squawk 3657.

Redbird Flight 8:

Starting Point	KFZY (Oswego County) Rwy 33
Weather (KFZY)	Ceilings- Overcast 1000
	Winds- 180@8
	Visibility- 3 SM
	Altimeter Setting- 30.32
Time	1700Z
Weather (B16)	Ceilings – Overcast 600
	Winds- 180@8
	Visibility – 3 SM
	Altimeter Setting- 30.30

- Clearance (Flight Service Station): N____ ATC clears you to the B16 airport, Direct, Climb and Maintain 3000, Syracuse Departure 134.275, Squawk 2143. Clearance void if not off by 1720Z. Time now 1710Z. If not off by 1720 advise further intentions no later than 1725Z.

Redbird Flight 9:

Starting Point	KFUL- Terminal
Weather	Ceilings- Overcast 300
	Winds- 220@8
	Visibility- 2 SM
	Altimeter Setting- 30.16

- Clearance (Fullerton Ground 121.8): N___ Cleared to the KSNA airport as filed, climb and maintain 4000, Socal Departure 125.35, Squawk 3416

Redbird Flight 10:

Starting Point	KLGB (Long Beach/Daugherty Field) Ross Aviation Ramp
Weather	Ceilings – Overcast 900
	Winds- 070@10
	Visibility- 3 SM
	Altimeter Setting- 30.21

- Clearance (Long Beach Clearance Delivery 118.15): N___ is cleared to the KSBA airport via the HAWWC THREE Departure, Climb via the SID, maintain 6000, squawk 6149

Redbird Flight 11:

Starting Point	KSAF – Jet Center
Weather	Ceilings- Broken 1400
	Winds- 160@10
	Visibility- 4 SM
	Altimeter Setting- 29.99

- Clearance (Santa Fe Ground 121.7) N____ Cleared to KAXX, Radar Vectors, Direct, Climb and Maintain 14,000, Departure frequency 132.8, Squawk 5143

Redbird Flight 12:

Starting Point	KORE- Ramp
Weather	Ceilings- Overcast 400
	Winds- 060@9
	Visibility- 3 SM
	Altimeter Setting- 30.25
Time	2145Z

- Clearance (Flight Service Station): N____ ATC clears you to the KBOS airport, via direct Gardner VOR, Gardner 4 arrival, climb and maintain 5000, Departure frequency 123.75, Squawk 1732. Clearance void if not off by 2205Z. Time now 2155Z. If not off by 2155 advise further intentions no later than 2210Z

Redbird Flight 13:

Starting Point	KDPA- Dupage Flight Center
Weather	Ceilings- Broken 700
	Winds- 120@4
	Visibility- 4 SM
	Altimeter Setting- 30.06

- Clearance (Dupage Clearance Delivery 119.75): N_____ cleared to the 8C4 airport via Obene 3 departure, Obene, Direct, Climb and Maintain 3000, Expect 7000 10 minutes after departure, Squawk 4315

Redbird Flight 14:

Starting Point	KEPH- Ramp
Weather	Ceilings- Overcast 800
	Winds- 220@3
	Visibility- 2 SM
	Altimeter Setting- 30.13
Time	1600Z

- Clearance (Flight Service Station): N____ is cleared by ATC to the KGEG airport via EPH, Zoomr 1 Arrival, Climb and Maintain 5000, Departure frequency 126.1, Squawk 4163. Clearance void if not off by 1620Z. Time now 1610Z. If not off by 1620 advise further intentions no later than 1625Z

Redbird Flight 15:

Starting Point	KHXD- Signature FBO
Weather	Ceilings- Overcast 400
	Winds- 190@8
	Visibility- 3 SM
	Altimeter Setting- 30.06

- Clearance (Hilton Head Ground 121.1): N____ is cleared to KCHS via direct Baggy, DDena 1 arrival, Climb and Maintain 7000, Departure Frequency 132.92, Squawk 1743

Redbird Flight 16:

Starting Point	KPSF- Ramp/Lyon Aviation
Weather (KPSF and KALB)	Ceilings- Overcast 400
	Winds- 300@25
	Visibility- 2 SM
	Altimeter Setting- 29.97
Weather (KGFL)	Ceilings- Overcast 800
	Winds- 290@15
	Visibility- 2 SM
	Altimeter Setting- 30.00

- Clearance (Albany Clearance Delivery 128.6): N____ is cleared to KALB via Direct, Climb and Maintain 6000, Departure Frequency 132.82, Squawk 3612

Redbird Flight 17:

Starting Point	KUIL
Weather	Ceilings- Broken 1100
	Winds- 360@6
	Visibility- 3 SM
	Altimeter Setting- 29.96

- Clearance (Seattle Center Clearance Delivery Phone): N____ is cleared to KSEA via TOU, Jawbn6 arrival, climb and maintain 3000, expect 9000 10 minutes after departure, Departure frequency 127.05, Squawk 4271

- Clearance (Seattle Clearance Delivery): N____ is cleared to KUIL via the Ozwld Departure, Ozwld transition, Climb and Maintain 9000, Squawk 6215

Redbird Fight 18:

Starting Point	KTHV
Weather	Ceilings- Broken 200
	Winds- 150@6
	Visibility- 2 SM
	Altimeter Setting- 30.07

- Clearance (Harrisburg Approach Phone): N____ is cleared to the KMDT airport via Direct, Climb and Maintain 3000, Departure Frequency 124.1, Squawk 3165

- Clearance (Harrisburg Departure 118.25): N___ is cleared to the KLNS airport via Direct, Climb and Maintain 3000, Squawk 4224

Redbird Flight 19:

Starting Point	KLAL- Rwy 5
Weather	Ceilings- Overcast 200
	Winds- 030@10
	Visibility- 1 SM
	Altimeter Setting- 30.29

- Clearance (Lakeland Ground 121.4): N____ is cleared to the KPIE airport via Direct, Climb and Maintain 3000, Departure Frequency 119.9, Squawk 5132

- Clearance (Tampa Departure 125.3): N____ is cleared to the KSRQ airport via Direct, Climb and Maintain 3000, Squawk 6324

	Total	Instruction Received	Day TO/Lndgs.	PIC	XC Instruct. Received	XC Solo/PIC	Simulated Instrument	Instrument	Night Instruct. Rcvd.	Night TO/Lndgs.	Night PIC
Airplanes											
ATD											