INSTRUMENT LESSON NOTES

Rev. 04-30-2015

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Nothing in this material supersedes any Flight Manual or Pilot Operation Handbook issued by the manufacturer of the airplane flown.

SuccessLink Aviation, Inc.

Lesson Note No. 1 – Ground – Flight Instruments

Read: Instrument Flying Handbook FAA-S-8083-15B, Chapter 5, pp. 5-1 through 5-21
Read: Instrument Rating Practical Test Standards FAA-S-8081-4D, Area of Operation II, Task B.

Lesson Note No. 2 – Ground - BAI Flying

Review: Instrument Flying Handbook FAA-S-8083-15B, Chapter 5, pp. 5-1 through 5-21
Review: Instrument Rating Practical Test Standards FAA-S-8081-4D, Area of Operation II, Tasks B.

Lesson Note No. 3 – TD – BAI Flying

THE PROCESS OF INSTRUMENT FLYING

How we successfully achieve instrument flight has been evolving away from just being an "art form." The current thrust is toward more structured processes as airspace and technology mature. No longer are we able to execute high quality instrument flight using freeform methods. The thesis of this introduction is the concept of applying structured process techniques while flying instruments.

The analogy I like to use is; Instrument Flight is like a cookie factory. If you put all the right ingredients in the cookie dough at the right time and cook it at the right temperature for the right time, you end up with really good cookies. If you leave anything out, you get really bad cookies!

Repeatable steps, which have been demonstrated to work consistently, make instrument flight easier and safer. Following those steps each and every time results in high quality performance. The most common faults I see on practical tests and proficiency checks are related to leaving out (forgetting) process steps. There are solid concepts behind the titles Terminal Procedures (approach plates), Standard Departure Procedures, Obstacle Departure Procedures and Standard Terminal Arrival Procedures. Airline and Part 135 operators are required to have Standard Operating Procedures.

The whole concept of Total Quality Management started to evolve in the United States a number of years ago. Dr. W. Edwards Deming introduced these methods in other countries that were competing with us in manufacturing. With time, U.S. industry learned this concept; the key to having successful quality products evolves from understanding and improving process steps. The same is true for instrument flight.

The concept of continuous process improvement is a key contributor to our being proficient. If new steps are learned, they should be evaluated and incorporated (as long as they contribute to safety first or ease of flight). Process steps are not meant to be stagnant, but should evolve as learning continues.

It must be emphasized that there is not just one set of good process steps. Many varieties exist which describe viable and correct techniques. The more important idea is that each one of us should have a set of processes that work for us individually. These steps should become a part of our flying "fiber." Now the question arises; "Should you ever deviate from your process?" The answer is a definite YES! If your normal environment changes (for example, an equipment failure), then you may deviate from your normal process. When this happens, a conscious effort must be made to evaluate the best action path. However, having an engrained normal process in mind will help you through the possible rough spots.

There are many processes in instrument flying. The most fundamental is having a good instrument scan. You need a scan that is regular, repeatable and not random like the often taught hub and spoke method. The key is to frequently scan the specific instruments that are critical for the mode of flight being used. Other processes include: Recovering from Unusual Attitudes, Intercepting and Tracking Courses, Holding Procedures, "Six Ts", "Missed Approach", Timed Turns, Approach Briefing, IFR Flight Planning, Use of Checklists, etc. Process steps for each of these will enhance your safety and comfort while flying IFR.

Another consideration of striving for excellence in IFR flight is to debrief yourself after each flight. Make an honest assessment of how well you did against the standards and your existing processes. Constantly strive for process improvement, but most importantly: "Have a Process."
4
Do not "wing it" when flying IFR.

Bill Lewis, Gold Seal CFI, DPE Ret.

CONTINUED ON NEXT PAGE:

Lesson Note No.3 continued:

Read: Instrument Flying Handbook FAA-S-8083-15B, Chapter 5, pp. 5-22 through 5-28
Read: Instrument Flying Handbook FAA-S-8083-15B, Chapter 6, pp. 6-1 through 6-28

Read: Instrument Rating Practical Test Standards FAA-S-8081-4D, Area of Operation IV, Task A

Lesson Note No. 4. – TD - BAI

Read: Instrument Flying Handbook FAA-S-8083-15B, Chapter 7, pp. 7-33 through 7-52

A FEW WORDS ABOUT THE POWER CARD:

Please recognize that the power cards you fill out for the Simulator/BATD/AATD/AIRPLANE are not absolute settings. The settings merely represent a starting point for typical conditions of flight. The concept revolves around the concept that PITCH + POWER = PERFORMANCE.

Changes in Temperature, Altitude, Humidity (Density Altitude), aircraft loading, and center of gravity will require slight modifications of the required pitch and power to maintain the chosen mode of flight. In addition, each aircraft of the same type may perform slightly differently due to age, condition and rigging. Also, changing the flap settings will significantly change the required settings

So, in using the card, constantly be aware that you may have to set the power and pitch somewhat differently than what your power card specifies.

The settings on the Power Card are just initial Targets !

AIRCRAFT _____

	FLAPS	RPM	PITCH	A/S	VSI
CLIMB	_____	_____	_____	_____	_____
CRUISE	_____	_____	_____	_____	_____
CRUISE DESCENT	_____	_____	_____	_____	_____
APPROACH	_____	_____	_____	_____	_____
APPR. DESCENT	_____	_____	_____	_____	_____
FAST DESCENT	_____	_____	_____	_____	_____

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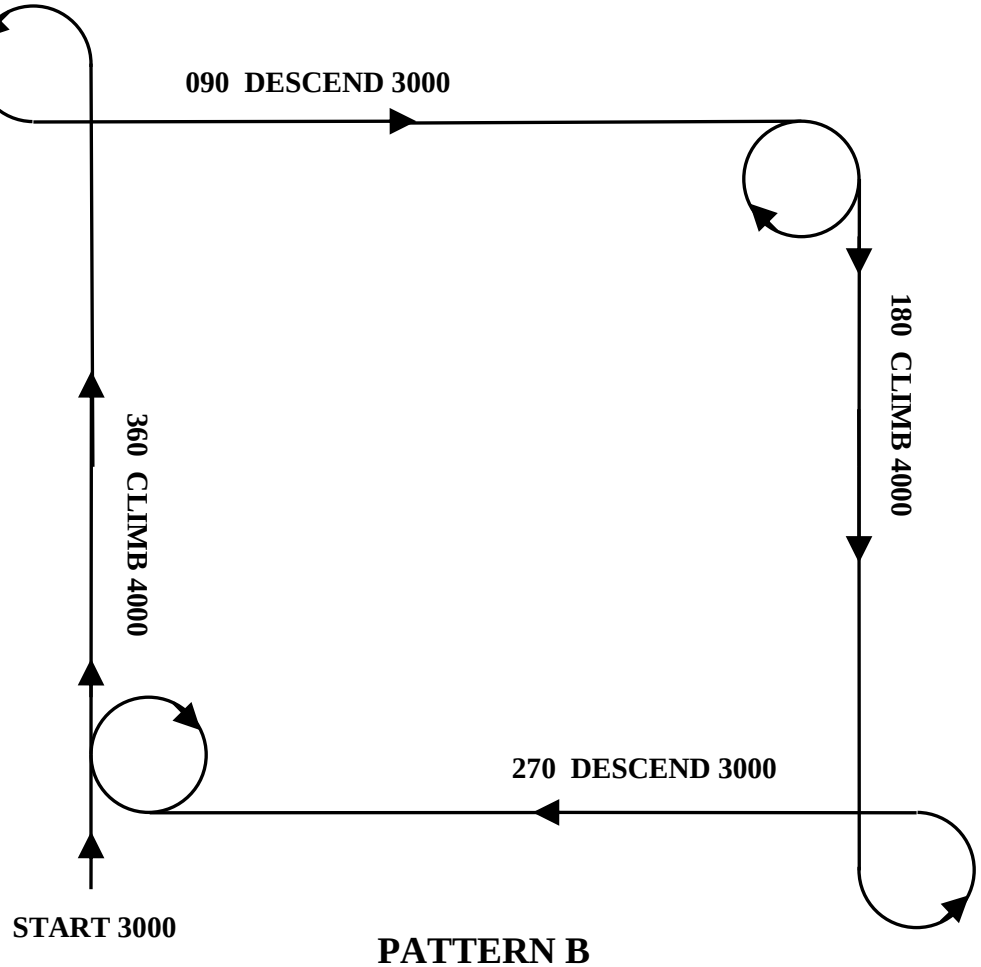
090 DESCEND 3000
180 CLIMB 4000
360 CLIMB 4000
270 DESCEND 3000
START 3000

PATTERN B

Lesson Note No. 5 – Aircraft – BAI

Review: Instrument Flying Handbook FAA-S-8083-15B, Chapter 6, pp. 6-1 through 6-28
Read: Instrument Rating Practical Test Standards FAA-S-8081-4D, Area of Operation II, Task C

Lesson Note No. 6 – Ground – Magnetic Compass

Read: Instrument Flying Handbook FAA-S-8083-15B, Chapter 5, pp. 5-10 through 5-15

Lesson Note No. 7 – TD – BAI, Partial Panel, Autopilot

Read: Instrument Flying Handbook, FAA-S-8083-15B Chapter 11, pp. 11-5 through 11-7
Read: Instrument Flying Handbook, FAA-S-8083-15B, Chapter 7, pp. 7-1 through 7-26

Lesson Note No. 8 – Aircraft - BAI, Partial Panel, Autopilot

Review: Instrument Flying Handbook, FAA-S-8083-15B,. Chapter 11, pp. 11-5 through 11-7
Review: Instrument Flying Handbook, Chapter 7, pp. 7-1 through 7-26

Lesson Note No. 9 – Ground - NDB

Read: Instrument Flying Handbook, FAA-S-8083-15B, Chapter 9, pp. 9-3 through 9-8

Lesson Note No. 10 Ground – VOR Fundamentals

Read: Instrument Flying Handbook, FAA-S-8083-15B, Chapter 9, pp. 9-8 through 9-18
Read: Instrument Rating Practical Test Standards FAA-S-8081-4D, Area of Operation V, Task A

Lesson Note No. 11 – TD - VOR Procedures

Review: Instrument Flying Handbook, FAA-S-8083-15B, Chapter 9, pp. 9-8 through 9-18
Read: Instrument Rating Practical Test Standards FAA-S-8081-4D, Area of Operation V, Tasks A

THE PROCESS OF INTERCEPTING AND TRACKING VORS

Intercepting and tracking VOR radials is not a complex process, however, it can sometimes be confusing. Many instructors teach techniques to mentally add or subtract 180 degrees to obtain reciprocal headings. The following process eliminates the requirement to do any math in the cockpit for this purpose, and results in better positional awareness and fewer errors.

1. **TUNE** - Tune in the appropriate VOR.

2. **IDENTIFY -** Identify the VOR station to assure that you have the correct navigational aid selected and that it is not in a test mode.

3. **VISUALIZE** - Mentally visualize your airplane right on top of the VOR that you are using. Mentally visualize that the airplane is pointed in the proper direction for the airway you want to intercept and track. Decide if the radial is on the nose or tail of your phantom airplane.

4. **TWIST** - Twist your Omni Bearing Selector (OBS) such that you put the radial either on the nose or the tail of the OBS card as visualized in step three above.

5. **TURN -** Turn the airplane to a heading that corresponds to the number that is now on the top of the OBS card (the Course Index). You are now flying parallel to the radial in the correct direction.

6. **TURN** - If the course deviation needle is pinned off scale, turn it 45 degrees toward the needle and intercept the radial. For smaller needle deviations, a smaller intercept angle may be used.

7. **TRACK** - Track the radial inbound or outbound using appropriate wind correction.

Steps number three and four are the keys to not having to compute reciprocal courses. The OBS card is doing the work for you.

Lesson Note No. 12 – Aircraft - VOR Procedures

Review: Instrument Flying Handbook, FAA-S-8083-15B, Chapter 9, pp. 9-8 through 9-18

Lesson Note No. 13 – Aircraft – Unusual Attitudes

Read: Instrument Flying Handbook, FAA-H-8083-15B, Chapter 7, pp. 7-26 through 7-30, paragraphs on Unusual Attitudes and Recoveries

Read: Instrument Rating Practical Test StandardsFAA-S-8081-4D, Area of Operation IV, Task B

THE PROCESS OF RECOVERING FROM UNUSUAL ATTITUDES

An unusual attitude may be caused by turbulence, improper control pressures, inattention, failure of the trim system/autopilot, or often, a pilot following an attitude indicator that is in the process of failing. Severe unusual attitudes may exceed the limits of the attitude indicator. It is therefore important to practice recoveries using partial panel technique and to not trust the attitude indicator, as it may have tumbled or is inaccurate. If an unusual attitude is suspected, always look at the airspeed indicator first.

There are two types of unusual attitudes: nose high and nose low.

The most frequent unusual attitude is the descending turn. Because of the bank, a steep dive will tend to develop and airspeed can rapidly build to dangerous levels. If the turn exceeds medium bank, it will tend to continue rolling steeper, accelerating the spiral dive and increasing the chances of exceeding the design load factor of the aircraft.

In a spiral dive ("Graveyard Spiral"), the airspeed will be high and increasing, and the turn coordinator will be pegged in the direction of the turn.

For **HIGH AIRSPEED** spiral dives, the steps to recover, in the proper sequence, are:

1. **REDUCE POWER** to eliminate the accelerating thrust of the engine. Also, the wind-milling propeller will produce some additional drag.

2. **LEVEL THE WINGS**. Do not attempt to raise the nose while the airplane is banked. This would tighten the spiral and increase the stress on the airframe.

PAUSE, do not rush the next step.

3. **RAISE THE NOSE**. At high airspeeds, strong control pressure is unnecessary. The nose will tend to rise and without a direct indication of pitch attitude it is easy to over-control. There is a danger of causing a high pitch attitude and a near stall condition. Level flight is reached when altitude stops decreasing. If it starts to increase, the airplane is climbing and you should dampen this tendency with light forward pressure.

Unless the trim system or autopilot fails, dangerous nose high unusual attitudes are uncommon in general aviation aircraft. If the airplane gets into an inadvertent climb, airspeed will bleed off and the nose will drop. If it is banked, a spiral dive may develop.

However, severe turbulence, inattention, or poor technique may cause an inadvertent climb, indicated by low and decreasing airspeed.

Continued on next page

For **LOW SPEED** turning climbs, the steps for recovery, **in the proper sequence**, are:

1. **APPLY POWER** to increase airspeed and avoid the stall.

2. **NEUTRALIZE THE AILERONS**. Do not try to bank out of the turn yet!

3. **LOWER THE NOSE** to increase airspeed and avoid the stall. Level flight is reached when the altitude stops increasing.

PAUSE, do not rush the next step.

4. **LEVEL THE WINGS**. Leveling the wings prematurely could result in a spin, due to the greater angle of attack of the aileron on the low wing.

In unusual attitude recoveries, as in all partial panel work, emphasize light control pressures and rapid instrument scan. The greatest danger is in over-controlling and creating another unusual attitude during the recovery. For additional reading on this subject, consult the Instrument Flying Handbook FAA-H-8083-15B, Chapter 5, pp. 7-26 through 7-28.

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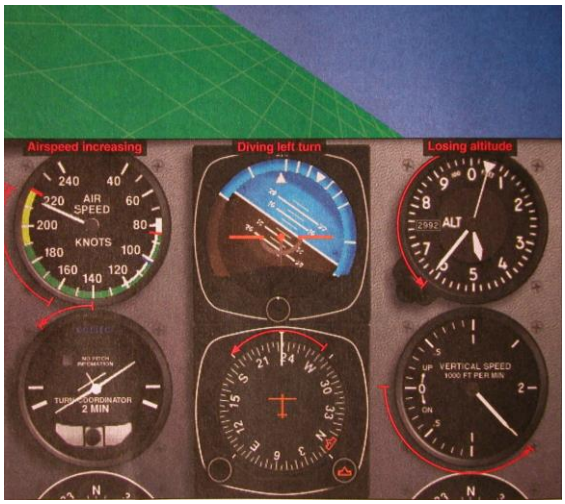
UNUSUAL ATTITUDES
In 3 Words

Low Airspeed (Nose High)

Power	PUSH
Pitch	PUSH
Bank	ROLL

High Airspeed (Nose Low)

Power	PULL
Bank	ROLL
Pitch	PULL



Lesson Note No. 14 – Ground – GPS/Autopilot

Read: Instrument Flying Handbook, FAA-H-8083-15B, Chapter 9, pp. 9-24 through 9-33

Lesson Note No. 15 – TD – GPS/Autopilot

Read: Instrument Flying Handbook, FAA-H-8083-15B, Chapter 9, pp. 9-24 through 9-33

Lesson Note No. 16 – Aircraft – GPS/Autopilot

Review: Instrument Flying Handbook, FAA-H-8083-15B, Chapter 9, pp. 9-24 through 9-33

Lesson Note No. 17 – Ground – FAR/AIM

Read: FAR 61.65
Read: FAR 91.167 through 91.179
Read: AIM 5-1-1 through 5-1-16

Lesson Note No. 18 – Aircraft – Phase Check Review

Review the items shown in the content section of this lesson. If you do not understand or cannot articulate any of these subjects, the appropriate sections of the Instrument Flying Handbook

Lesson Note No. 19 – Aircraft – Phase Check

Review the items shown in the content section of this lesson. If you do not understand or cannot articulate any of these subjects, the appropriate sections of the Instrument Flying Handbook

Lesson Note No. 20 – Ground = Holding & IFR Clearances

Read: Instrument Flying Handbook, FAA-H-8083-15B, Chapter 10, pp. 10-3 (Clearances) through 10-5.

Read: Instrument Flying Handbook, FAA-H-8083-15B, Chapter 10, pp. 10-10 (Holding Procedures) through 10-13.

SPECIAL NOTE: There is serious mis-information the video lesson regarding when to reduce speed if a speed reduction is necessary for a hold. Pay special attention to page 10-11 where it says: "*When a speed reduction is required, start the reduction when 3 minutes or **LESS** from the holding fix.*"

Lesson Note No. 21.- TD – Holding Procedures

Review: Instrument Flying Handbook, FAA-H-8083-15B, Chapter 10, pp. 10-10 (Holding Procedures) through 10-13.

Read: Instrument Rating Practical Test Standards FAA-S-8081-4D, Area of Operation III, Tasks C

THE PROCESS OF HOLDING PATTERNS

Holding patterns are the nemesis of many instrument pilots. There have been a large number of instrument students who have given up on their training because of the difficulty of visualizing and executing the holds. This procedure simplifies this process:

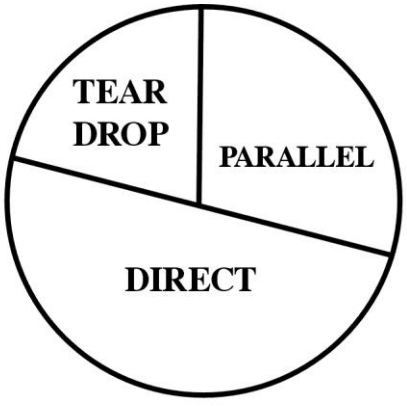
1. Always… **Always** write down the holding clearance. Draw a circle around the holding radial (I call this the "Number"). Never accept a holding clearance without being given an expect further clearance time.

   NOTE: The Outbound Course = The holding Radial = "The Number." They are numerically equal !

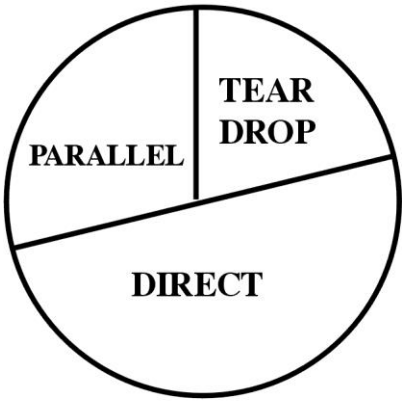
2. Fly direct to the holding fix.

3. Mentally overlay the appropriate diagram below over the Directional Gyro. One picture is for right turns, the other for left turns.

4. Visually determine where radial (the "Number") falls on the overlay. That will tell you what kind of entry is required. (After some practice, you can identify the required holding entry in less than a second.)



LEFT TURNS



RIGHT TURNS

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5. Follow the Six T Rules that follow in order to execute the required hold.

This system requires you to memorize a few simple rules. However, it is much faster and more reliable than trying to sketch the holding pattern and muddling your way through the procedure. If you follow the few simple rules, you will get it right every time!

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Lesson Note No. 21 continued.

SIX Ts

Turn

Time

Twist

Throttle

Track

Talk

SPECIAL NOTE: EVERY TIME YOU CROSS THE HOLDING FIX, ADD AN ADDITIONAL T "*TIME*" TO THE BEGINNING OF THIS LIST:
TIME, TURN, TIME TWIST, THROTTLE, TRACK, TALK.

AT THE VERY FIRST CROSSING, WRITE DOWN THE ZULU TIME ON THE CLOCK AS YOU WILL HAVE TO SUBSEQUENTLY REPORT THIS TO THE CONTROLLER.

AT SUBSEQUENT CROSSINGS NOTE THE ELAPSED TIME ON THE TIMER. THIS WILL BE THE TIME ELAPSED ON THE INBOUND LEG OF THE HOLD.

Continued on next page.

Holding Pattern Rule Matrix

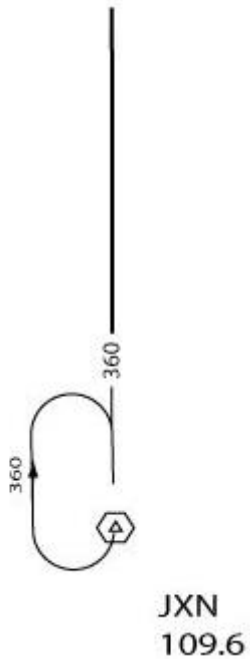
	DIRECT	TEARDROP	PARALLEL
Turn	Turn to the "Number"	Turn so the "Number" is 30 degrees off the nose	Turn to the "Number"
Time	Start Timer	Same	Same
Twist	"Number" to Bottom of OBS	Same	Same
Throttle	Check Setting for Approach AS	Same	Same
Track	Check and correct your Heading	Same	Same
Talk	Report "In the Hold"	Same	Same
After one minute outbound:			
Turn	Turn to the Inbound Heading	Same	Turn opposite direction to the Inbound Heading
Time	Start Timer	Same	Same
Twist	No	No	No
Throttle	No	No	No
Track	Intercept and Track the Inbound course	Same	Same
Talk	No	No	No

As you cross the fix, note the time it took to go inbound.

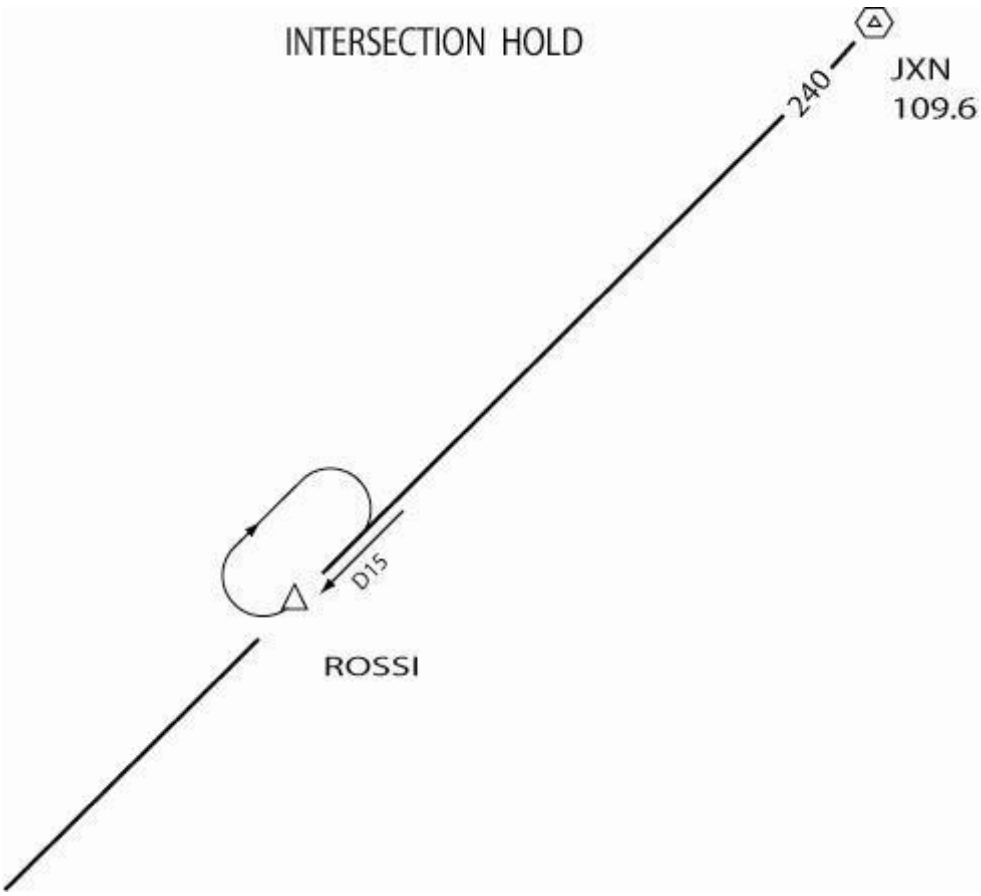
You will adjust the next outbound leg in order to achieve 1 minute inbound on subsequent circuits.

Turn…. Time….. Twist…. Throttle…. Track….. Talk …
and around you go!

Hold North of the JXN VOR on the 360º Radial



Intersection Hold at ROSSI



Lesson Note No. 22.- Ground – Terminal Procedures

Read: Instrument Procedures Handbook, FAA-H-8261-1A, Chapters 2 and 4, All

Lesson Note No. 23.- Ground – Instrument Approaches

Read: Instrument Procedures Handbook, FAA-H-8261-1A, Chapter 5, All

MISSED APPROACH

Pitch Up ***for appropriate airspeed.***

Power Up

Pitch Up/Power up should be done simultaneously in a smooth, coordinated, not rushed fashion.

Positive Rate Up ?

Flaps UP ***slowly, 1 notch at a time***

Gear Up

Talk Up

Lesson Note No. 25.- Ground – ATC System

Read: Instrument Flying Handbook, FAA-H-8083-15B, Chapter 2, pp. 2-1 through 2-14

Lesson Note No. 26.- Aircraft – Non-precision Approaches

Read: Instrument Flying Handbook, FAA-H-8083-15B, Chapter 5, pp. 5-59 through 5-66
Read: Instrument Flying Handbook, FAA-H-8083-15B, Chapter 9, pp. 9-1 through 9-17
Read: Instrument Flying Handbook, FAA-H-8083-15B, Chapter 10, pp. 10-13 through 10-15

Lesson Note No. 27.- Ground – Pilot/Controller Responsibilities

Read: Instrument Procedures Handbook, FAA-H-8261-1A, Chapter 1 All

Lesson Note No. 28.- Ground – Instrument Landing System

Read: Instrument Flying Handbook, FAA-H-8083-15B, Chapter 9, pp. 9-35 through 9-42

Lesson Note No. 29.- TD – Precision Approach Procedures

Review: Instrument Flying Handbook, FAA-H-8083-15B, Chapter 9, pp. 9-35 through 9-42

Lesson Note No. 30.- Aircraft – Precision Approaches

Review: Instrument Flying Handbook, FAA-H-8083-15B, Chapter 9, pp. 9-35 through 9-42
Read: Instrument Procedures Handbook, FAA-H-8261-1A, Chapter 5, pp. 5-52 through 5-56

Lesson Note No. 31.- Ground – Autopilot Approaches and DME

Read: Instrument Flying Handbook, FAA-H-8083-15B, Chapter 9, pp. 9-17 through 9-19

THE PROCESS OF TIMED TURNS

Partial panel flying after the loss of your primary flight instruments certainly can be stressful. Trying to make magnetic compass turns can be filled with many errors because of compass magnetic dip and acceleration errors. Thus, the recommended way to change the airplane's heading is by timing and using standard rate turns. Many instructors teach that you should do mental arithmetic by subtracting your current heading from the desired heading, then divide by three. Example: a turn from 90 degrees to 120 degrees would require a 30 degree heading change. Since standard rate is three degrees per second, this turn would require 10 seconds. Research has shown that it is very difficult to do mathematics while trying to use your central vision to scan the instruments. Interestingly, the same part of our brain is used for both mathematics and central vision.

The following process eliminates the requirement to do any math in the cockpit for this purpose, and results in better positional awareness and fewer errors. The basic concept is to treat each 30 degree heading increment as ten seconds in time rather than a number of degrees.

Here are the steps:

1. Using the Turn Coordinator, hold the airplane as level as possible, and read the compass.

2. Rotate your OBS (preferably one not being used for navigation) so that the number at the top cursor matches the magnetic heading. This example shows 300 degrees:

3. Let's say that you want to make a heading change from 300 to 060. Think of each major numbered division (33, 36, 3, 6) as 10 seconds each. Thus, a 40 second right turn would be required. It is easy to interpolate for fractions of a major number division.

If you have your primary OBS set for an inbound course, you can use the same method of counting major divisions from the current magnetic heading position to the desired inbound course. No math required!

Lesson 32 continued on next page

THE PROCESS OF MAGNETIC TURNS

Partial panel flying after the loss of your primary flight instruments is often stressful. Trying to make magnetic compass turns can be filled with many errors because of compass magnetic dip and acceleration errors. Thus, the recommended way to change the airplane's heading is by timing and using standard rate turns. See the section entitled, "The Process of Timed Turns."

When using the technique of Timed Turns, the variability of timing, rolling into the turn, rolling out of the turn, and turn coordinator accuracy/precision, it is very difficult to get to the exact desired heading. You can usually "just get close." When you are close to the desired heading, small corrections in heading may be made by using magnetic turns.

Because of magnetic dip and acceleration errors, use of the magnetic compass has its complications as well:
When on an East or West heading, any acceleration or climb will show a compass reading of a more Northerly indication. Conversely, any deceleration or dive will have a compass reading showing a more Southerly indication

Also, when turning near Southerly headings, the compass indication will lead (be ahead of) the actual desired heading.

Conversely, when turning near Northerly headings, the compass indication will lag (be behind) the actual desired heading.

Detailed understanding of these factors will allow the pilot to make compensations and get relatively close.

Here are useful steps:

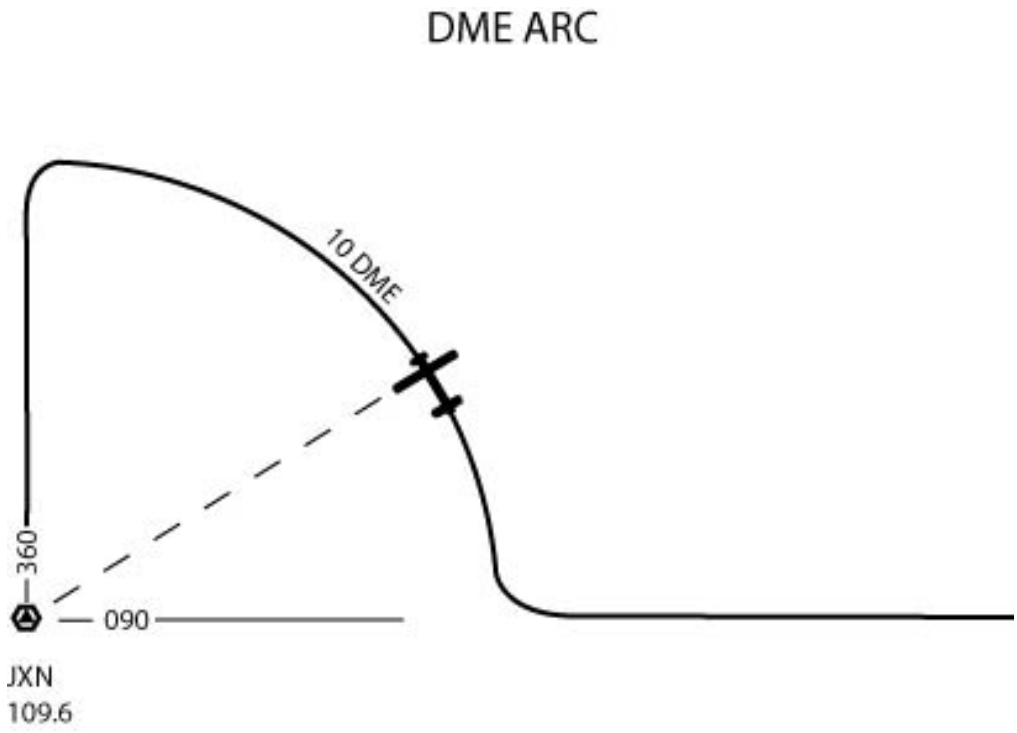
1. Fly the airplane so that the Turn Coordinator shows absolutely **NO TURN** and is **STABLE**.
2. Note the current heading and also the desired heading on the magnetic compass.
3. If the desired heading shows on the RIGHT of the magnetic compass, you must turn **LEFT**.
4. Conversely, if the desired heading shows on the LEFT of the magnetic compass, you must turn **RIGHT.**
   (This is similar to the concept of a localizer back course approach where you turn away from the needle.)
5. The timing of your turns should be: "ROLL IN TWO THREE, ROLL OUT TWO THREE". If you roll into a standard rate turn during this step, you will get approximately a ten degree change of heading.

These steps should be done successively until the desired heading is achieved.

Another orientation concept to keep in mind, is that if you want the numbers on the compass to be **BIGGER,** you must turn **RIGHT**. If you want the numbers to get **SMALLER**, you must turn **LEFT**. At first this might seem very simple, however, it is extremely helpful to keep this in mind.

Lesson Note No. 32 continued.

THE PROCESS OF DME ARCs



Lesson Note No. 33.- Aircraft – Timed & Magnetic Turns

Read: Instrument Flying Handbook, FAA-H-8083-15B, Chapter 7, pp. 7-53

Lesson Note No. 34.- Ground – Icing

Read: Instrument Flying Handbook, FAA-H-8083-15B, Chapter 10, pp. 10-23

Lesson Note No. 35.- Ground – Thunderstorms

Read: Instrument Flying Handbook, FAA-H-8083-15B, Chapter 10, pp. 10-24

Lesson Note No. 36.- Aircraft – Autopilot Approaches

Read: Instrument Flying Handbook, FAA-H-8083-15B, Chapter 5, pp.5-28 through 5-30

Lesson Note No. 37.- Ground – Forecasts & Reports

Read: Instrument Procedures Handbook, FAA-H-8261-1A, Chapter 5, pp. 5-1 through 5-4

Lesson Note No. 38.- Aircraft – Stage Check Review

Read: Instrument Procedures Handbook, FAA-H-8261-1A, Chapter 2, All
Read: Instrument Procedures Handbook, FAA-H-8261-1A, Chapter 4, All

Lesson Note No. 39.- Ground and Aircraft – Stage II Check

Read: Instrument Flying Handbook, FAA-H-8083-15B, Chapter 2, pp. 2-1 through 2-14

Lesson Note No. 40.- Ground – Chart Review and Enroute Procedures

Read: Instrument Procedures Handbook, FAA-H-8261-1A, Chapter 3, All

Lesson Note No. 41.- Ground – IFR Cross Country Planning

Review: Instrument Procedures Handbook, FAA-H-8261-1A, Chapter 2, All

IMPORTANT:
THE FOLLOWING NOTES CONTAIN FLIGHTS APPROPRIATE TO THE CORRESPONDING LESSON PLAN. IF CONDITIONS DO NOT SUIT THE SPECIFIED ROUTES, THE INSTRUCTOR MAY ASSIGN A DIFFERENT ROUTE AS LONG AS THE ELEMENTS OF THE LESSON PLAN ARE MET (TYPES OF APPROACHES AND LANDINGS)

Lesson Note No. 42.- Aircraft – Cross-Country

Work out a circle to land on at least one of the following approaches

Leg 1: OZW to LAN (or TOL)
ASR Approach. (Call First)
Leg 2: LAN (or TOL) to Coldwater
VOR Approach at Coldwater with a **Landing**
Leg 3: Coldwater to OZW,
ILS Approach at OZW,

Lesson Note No. 43.- Aircraft – Cross-Country

Leg 1: OZW to Marshal RMY with a **Landing**, Circle to Land if Possible
GPS Approach at RMY
Leg 2: RMY to JXN with a **missed approach**, Circle to Land if Possible
ILS Approach at JXN
Leg 3: JXN to OZW
APV approach at OZW

Lesson Note No. 44.- Aircraft – Cross-Country

Leg 1: OZW to JXN
8 mile DME arc around the JXN VOR
Leg 2: JXN VOR to AMN with a **Landing**
VOR or GPS, Partial Panel without PFD
Leg 3: AMN to PTK
LOC BC Approach at PTK, Missed Approach
PTK to OZW
ILS Approach at OZW, Landing

Lesson Note No. 45.- Aircraft –.Long Cross-Country

Leg 1: OZW to MKG
ILS Approach and Landing
Leg 2: MKG to MBS, using autopilot
LOC Approach, Missed approach
Leg 3: MBS to OZW
VOR Approach Partial Panel, Without PFD

Lesson Note No. 46. - Ground – End of Stage Review.

Read: ASA FAR/AIM Suggested Study List for Instrument paragraphs as outlined

Lesson Note No. 47.- Aircraft –.End of Stage Review

Read: The Instrument Practical Test Standards, FAA-S-8081-4D, Introduction

Lesson Note No. 47.- Ground & Aircraft –.Stage III Check

Review: The Instrument Practical Test Standards, FAA-S-8081-4D, Areas of Operation.
If there are any tasks you do not understand or cannot accomplish, Contact your instructor for help. We wish you great success on your practical test.