

Area of Operation I: Fundamentals of Instructing**A. Task: The Learning Process**

1. Define Learning – Change in behavior as a result of experience.
2. Characteristics of Learning –
 - a. Purposeful
 - b. Comes through Experience
 - c. Is Multifaceted
 - d. Is an Active Process
3. Practical application of the laws of learning
Should be thought of in the preparation stage of a lesson, not while you are teaching!
 - a. Law of Readiness
 1. Related to the characteristic of learning that learning is purposeful. Individuals learn best when they are ready to learn.
If you had a student who was flying because his family expected it but he didn't want to. Readiness implies a degree of single-mindedness and eagerness.
 - b. Law of Exercise
 1. States that those things most often repeated are best remembered.
Instructor must provide opportunities for students to practice or repeat and must see that this process is directed toward a goal.
 - c. Law of Effect
 1. based on the emotional reaction of the learner. Learning is strengthened when accompanied by a pleasant or satisfying feeling, and that learning is weakened when associated with an unpleasant feeling.
Instructor wouldn't want the first flight a student has seem overly difficult.
 - d. Law of Primacy
 1. state of being first, often creates a strong, almost unshakable, impression. For the instructor, this means that what is taught must be right the first time. Un-teaching is much more difficult.
As an instructor you need to be prepared and know your material you teach.
 - e. Law of Intensity
 1. Implies that a student will learn more from the real thing than from a substitute. Instructor should use imagination in approaching reality as closely as possible.
 - f. Law of Recency
 1. Things most recently learned are best remembered.
Example, instructors should debrief right after a flight not the next day! Or when planning a summary.
4. Factors involved in how people learn.
 - a. Perceptions
- vs insight
 - b. Factors which affect perception
 1. Physical organism
 2. Basic need
 3. Goals and Values
 4. Self-Concept
 5. Time and Opportunity
 6. Recognition of the element of threat

- c. Insights
- d. Motivation
 - 1. Probably the dominant force which governs the student's progress and ability to learn.
- 5. Recognition and proper use of the various levels of learning
 - a. Rote
 - b. Understanding
 - c. Application
 - d. Correlation – objective of all instruction – ability to associate an element which has been learned with other segments or blocks of learning.
- 6. Principles that are applied in learning a skill
 - a. Physical Skills involve more than muscles
 - b. Desire to learn
 - c. Patterns to follow – provide clear step-by-step example
 - d. Perform a skill
 - e. Knowledge of results – student needs to be aware of progress
 - f. Progress follows a Pattern - Learning plateau
 - g. Duration and Organization of Lesson – dependant upon student's experience, the more experience the more duration is acceptable.
 - h. Evaluation Versus Critique –
Evaluation – concerned w/ defining, observing, and measuring or judging this new behavior – the What and How Well.
Critique – should improve student's performance and provide them with something constructive with which to work and on which they can build.
 - i. Application of Skill – can the student use what has been learned?
- 7. Factors related to forgetting and retention
 - a. Theories of Forgetting
 - 1. Disuse
 - 2. Interference – similar material, things not well learned.
 - 3. Repression
 - b. Retention of Learning
 - 1. Praise stimulates remembering
 - 2. Recall is promoted by association
 - 3. Attitudes aid retention
 - 4. Learning with all our senses is most effective
 - 5. Meaningful repetition aids recall
- 8. How transfer of learning affects the learning process.
 - a. Positive Transfer – A helps B
 - b. Neg. Transfer A hurts B
- 9. How the formation of habit patterns affects the learning process.
 - a. Law of Primacy

B. Task: The Teaching Process

1. Preparation for a lesson or an instructional period.
 - a. Preparation – lesson plan should be written out.
2. Presentation of knowledge and skills, including the methods which are suitable in particular situations.
 - a.. Presentation – of the knowledge and skills which make up the lesson.
 1. Lecture method
 2. Guided Discussion
 3. Demonstration – Performance MethodMore?
3. Application, by the student, of the knowledge and skills presented by the instructor.
 - a. Application – student's application of what the instructor presented. Student may be asked to explain the new material, or to perform a maneuver or operation.
4. Review of the material presented and the evaluation of student performance and accomplishment.
 - a.. Review and Evaluation – Instructor should recapitulate what has been covered during the lesson.

C. Task: Teaching Methods

1. The organization of a lesson, i.e., introduction, development, and conclusion.
 - a. Introduction – establish common ground between the instructor and the students.
 1. Attention
 2. Motivation
 3. Overview
 - b. Development
 1. From past to present
 2. From Simple to Complex
 3. From Known to Unknown
 4. From Most Frequently Used to Least Frequently Used
 - c. Conclusion
 1. Retraces important elements of lesson and relates them to objective, remember, no new ideas should be introduced.
2. Lecture method
 - a. Formal
 - b. Informal
3. Guided Discussion
4. Demonstration-Performance Method
 - a. Learn by doing
 1. Explanation
 2. Demonstration
 3. Student Performance
 4. Instructor Supervision
 5. Evaluation
5. Programmed Instruction
 - a. Tutorial
 - b. Active student responses and immediate confirmation of answers
6. Audio-Visual Instruction

D. Task: Evaluation

1. Purpose of Evaluation
 - a. the what and how well
2. Evaluation may consist of:
 - a. Observation
 - b. Oral Quizzing
 - c. Written Test
 - d. Performance Tests
3. Oral Quizzing
 - a. How and why questions require the student to combine a knowledge of facts.
 - b. Effective Questions
 1. Center on one idea
 2. Present challenge to the students
 3. Brief and Concise
 - c. Questions to avoid
 1. Puzzle
 2. Oversize
 3. Toss-up
 4. Bewilderment
4. Written Tests
 - a. Characteristics of a Good Test
 1. Reliability
 2. Validity
 3. Usability
 4. Comprehensiveness
 5. Discrimination
5. Performance Tests
 - a. Stage checks or Check ride basically – Doing test.
 - b. Understanding your PTS

E. Task: Flight Instructor Characteristic and responsibilities

1. Major considerations and qualifications which must be included in flight instructor professionalism.
 - a. Service is performed
 - b. Achieved only after extended training and preparation.
 - c. True Performance as a professional is based on study and research.
 - d. Professionalism requires the ability to make good judgmental decisions. Cannot limit their actions and decisions to standard patterns and practice.
 - e. Demands code of ethics. Professionalism must be true to themselves, and to those they serve.

Characteristics of Flight Instructor

 - a. Sincerity
 - b. Acceptance of the Student
 - c. Personal Appearance and habits
 - d. Demeanor
 - e. Safety Practices and Accident Prevention
 - f. Proper Language
 - g. Self-Improvement
2. Role of the flight instructor in dealing with student stress, anxiety, and psychological abnormalities.
 - a. Anxiety – state of mental uneasiness arising from fear...”
 1. Counter by reinforcing students’ enjoyment of flying, and by teaching them to cope with their fears.
 - b. Stress

1. Normal Reaction is heart rate quickens, certain blood vessels constrict, act rapidly.
2. Abnormal Reaction is sweating, paleness, over-cooperation, rapid changes in emotions, severe anger, inappropriate laughter or singing.
- c. Seriously Abnormal students
 1. Get help, first another instructor, second informal discussion with FAA, third discuss with Aviation medical examiner.
3. Flight Instructor responsibility with regard to student pilot supervision and surveillance.
4. Flight Instructor's authority and responsibility for endorsements and recommendations.
 - a. CFI certificate on the line.
5. Flight instructor responsibility in the conduct of the required FAA flight review.
 - a. Interview student's
 1. Recent experience
 2. Requested maneuvers desired
 3. Previous training
 4. Medical and Pilot Certificate.
 - b. Determine what training is need to sign the student off.
 - c. Unsatisfactory flight review is just logged as Dual given

F. Task: Human Factors

1. Control of human behavior.
 - a. Instructor is a symbol of authority
 - b. Instructor should create an environment that enables students to help themselves.
 - c. Instructor guides student toward goal
2. Development of student potential
 - a. See the student as a vast, untapped potentiality. The instructor's ingenuity must be used in discovering how to realize the potentialities of the student. The responsibility rest squarely on the instructor's shoulders.
3. Relationship of Human needs to behavior and learning.
 - a. Physical needs
 - b. Safety needs
 - c. Social needs – need to belong
 - d. Egoistic needs – self esteem and reputation (status, recognition ...)
 - e. Self-Fulfillment needs – “realizing one's own potential”

Discuss meeting basic needs to reach higher needs
Motivation – Intrinsic and Extrinsic value to these items.
4. Relationship of Defense Mechanisms to student learning
Used to soften feelings of failure, guilt, and protect feelings of personal worth.
 - a. Rationalization
 - b. Flight
 1. Mental
 2. Physical
 - c. Aggression
 1. May ask irrelevant questions
 2. Refuse to participate
 3. Disrupt class activities

If students can't deal directly with the cause of their frustration, they may vent their aggressiveness on a neutral object or person not related to the problem.

- d. Resignation – they accept defeat, often from primary training be inadequate therefore they become overwhelmed in advanced training.
- 5. General rules which a flight instructor should follow during student training to ensure good human relations.
 - a. Keep students motivated
 - b. Keep students Informed
 - c. Approach students as individuals
 - d. Give credit when due.
 - e. Criticize constructively
 - f. Be consistent
 - g. Admit Errors

G. Task: Planning Instructional Activity

- 1. Development of a course of training.
 - a. What are your objectives and completion standards?
 - b. Identification of Blocks of training
 - 1. Private –
 - a. Block 1 – Student able to SOLO
 - b. Block 2 – Student able to conduct SOLO X-C.
 - c. Block 3 – Preparation for Practical Test
 - 2. Content and use of a training syllabus.
 - a. **flexible**, and should be primarily used as a guide but
 - b. **maintain building block technique**
3. Purpose, characteristics, proper use, and items of a lesson plan
 - a. **Lesson plan is an organized outline for a single instructional period.**
 - b. Should be prepared in written form
 - c. Purpose
 - 1. Assure a wise selection of information
 - 2. Nothing missed
 - 3. Aid instructor to present material in proper sequence
 - 4. Give inexperience instructor confidence
 - 5. Promote uniformity of instruction regardless of the instructor or the date on which the lesson was given.
 - d. Characteristics of a good lesson plan
 - 1. Unity
 - 2. Content
 - 3. Scope - not so huge
 - 4. Practicality
 - 5. Relation to TCO
 - 6. Instruction steps (teaching process)
 - e. Use of Lesson Plan
 - 1. Be familiar with the lesson plan
 - 2. Use the lesson Plan as a guide
 - 3. Lesson plan not suitable for thinking
 - 4. Adapt plan to specific student.
 - f. Lesson Plan Items
 - 1. Objective – Preparation - stage of teaching process.
 - 2. Elements – elements of knowledge and skill necessary for the fulfillment of the lesson objective.
 - 3. Schedule
 - 4. Equipment
 - 5. Instructor actions – If I picked up a lesson plan 6 months in the future I could look at the instructor actions to determine how I would going to teach the elements.
 - 6. Student Actions – desired student responses.

7. Completion Standards

A. Task: Certificates and Documents

1. Commercial Pilot Certificate Privileges and limitations
 - a. Privileges – 61.133 – compensation or hire
 - b. 119.1(e) – shows what a commercial pilot can do “for hire” without flying for a Part 121, 125, or 135.
Pilot Service vs Air Taxi

2. Medical Certificates, class and duration as related to commercial privileges.
 - a. Regulation 61.23
 1. First class – privileges of an ATP certificate.
 2. Second class – privileges of a commercial certificate.
 3. Third class – privileges of a private, recreational flight instructor.
 4. Does a flight instructor always need a medical to act as a flight instructor?
 5. What is the duration of the **privileges** of each certificate?

3. Pilot logbook or flight records
 - a. Reg. 61.51 – what must be logged? Requirements to log PIC. Requirement for presentation of required documents? Student pilot Must carry what with them?
 - b. Reg. 61.56 – what is required for a flight review
 - c. Reg 61.57 – what currency requirements are required to carry passengers?
 - d. 61.189 Flight instructor records
 1. CFI sign logbook of each person of whom that instructor has given flight training or ground training
 2. CFI must maintain a separate record of:
 - a. Each person whose logbook or student pilot certificate that instructor has endorsed for solo flight privileges, and the date of the endorsement;
 - b. name of each person instructor has endorsed for a knowledge test or practical test, and the record shall indicate the kind of test, the date, and the results
 - c. Each flight instructor must retain the records by this section for at least 3 years.

4. Airworthiness and registration certificates – see handout
 - a. If my landing light wasn't working (91.213(d(2))). What would I have to do before I could go flying? Or could I?
 - b. What is a AD? SB?
 - c. What maintenance requirements must be met to meet requirements to be airworthy? Can annual take place of 100hr? (91.409)
 - d. Is the Arrow normal category, if so how do I know?
 - e. What is the duration of a federal and state registration?
 - f. Do they have to be on the aircraft to fly?
 - g. What things make the federal registration expire? (see handout)
 - h. What are the required checks for the ELT (91.207, 91.215, 91.411, 91.417.

5. Operation limitations, placards, instrument markings, POH, and Airplane flight manual.
 - a. Why must the POH in the a/c be used and not the PIM. Why check the ident plate on the preflight?

6. Weight and balance data, and equipment list.
 - a. What are the different ways to compute weight and balance?
 - tabular, graphical, and computational
7. Airworthiness directives, compliance records, maintenance/inspection requirements, test and other appropriate tests – see handout
8. Limitations imposed on airplane operations with inoperative instrument or equipment
 - a. 91.213(d(2))
 - b. MEL – Minimum equipment lists
9. Special flight permit and procedures to obtain one. – see handout
 - a. When might you use a special flight permit? How do you obtain one?

B. Task: Weather Information – weather reports, charts, and forecasts with:

1. Emphasis on:
 - a. Convective Sigmets (WST)
 - b. Sigmets (WS)
 - c. Airmets (WA)
 - d. Wind shear reports (LLWS)
 - e. Pireps (UA or UUA)
2. Know how to read them, how often they come out, valid times, apply them to your actual cross-country route to make competent go/no-go decision.

C. Task: Cross-Country Flight Planning (need to practice one)

1. Pre-planned cross country that will require real-time weather to the first fuel stop with computations for weight and balance.
2. Use Current aeronautical charts
 - a. WAC charts
 - b. Sectional charts
 - c. Terminal charts
3. Identification of all normal and special airspace. (Reg Part 71,73, 91.133 and
Aim)
 - a. Take special attention to your route does it transverse any airspace requiring clearances?
4. Extracts and records pertinent information from NOTAMs, Airport/Facility Directory, and other flight publications.
5. Regulations Pertaining to cross-country flight planning
 - a. 61.1 – Definitions of cross-country
 1. For issuance of private, instrument, or commercial certificate or rating.
 2. For issuance of ATP
 - b. 91.103 – Preflight Actions
For a flight _____ or a flight not in the _____ of an airport, weather reports and forecasts, fuel requirements, alternatives available if the planned flight cannot be completed, and any know traffic delays of which the PIC has been advised by ATC.
 - c. 91.113 – Right of way rules
 1. Approaching head on, what should you do?
 2. Overtaking a slower aircraft what should you do?
 3. Landing, who has the right of way?
 - d. 91.117 – Aircraft Speed
 1. With 4n.m below 2500ft AGL within class D or C what is the maximum speed unless otherwise authorized by ATC.

2. What if my aircraft's min. speed is faster than the max speed allowed for a certain airspace?
3. Under Class B?
4. Below 10,000 MSL?
- e. 91.119 – Minimum safe altitudes
 1. What is the lowest altitude I could fly legally?
 2. Over congested area, IF I wasn't landings?
- f. 91.121 – Altimeter Settings
 1. I should use the current altimeter setting of a station along the route and with how many miles of the aircraft?
 2. What if my aircraft has no radios?
- g. 91.123 - Compliance with ATC clearances and instructions
 1. If given priority in an emergency, you shall submit a detailed report of that emergency within how many hours to the manager of that ATC facility IF requested?
 2. Identifies and interprets airport, taxiway, and runway signs, markings, and lighting. (See AIMS chapter 2)
- h. 91.126 - Operating on or in the vicinity of an airport in class G airspace.
 1. Standard turns for traffic patterns are right or left?
- i. 91.127- Operating on or in the vicinity of an airport in class E airspace.
- j. 91.129- Operations in Class D airspace
 1. What am I required to do if I transverse through Class D airspace, but have no intention of landing at the primary class D airport?
 2. What if I loose my radios? Can I enter class D or do I have to wait outside the 4 n.m. until they give me light gun signals?
 3. If I am given a clearance by ground control to "taxi to" runway 35C, does this give me clearance to taxi over all runways, including 35C, to get to the approach end of the runway?
- k. 91.130- Operations in Class C airspace
 1. Do I have to have a transponder to enter Class C airspace?
- l. 91.131 - Operations in Class B airspace
 1. Student pilots must meet 61.95 requirements
 2. Student pilots see Appendix D for airports restricted.
 3. For IFR operations what equipment do I need to travel in Class B airspace?
- m. 91.153 VFR flight plan: information required
- n. 91.155 - Basic VFR weather minimums
 1. If I was flying in uncontrolled airspace at 600agl, what would be my cloud and visibility requirments?
 2. What if I was at 11,000MSL in uncontrolled airspace?
 3. What if I was with in ½ mile from the runway of Class G airport at night?
- o. 91.157 - Special VFR Weather Minimums
 1. Do I need a ATC clearance to operate under special VFR operations.
 2. "NO SVFR" above airport name on sectional charts means what?
- p. 91.159 - VFR Cruising Altitude
 1. From 0 to 179 degrees MC above 3000 AGL what VFR cruising altitudes should a pilot use?
- q. 91.205 Required equipment
 1. For night flight what equipment it required?
- r. 91.209 Aircraft lights
 1. During a period from sunset to sunrise what lighting is

required?

D: Task: National Airspace System

E: Task: Performance and Limitations

1. Explain use of charts
2. Weight and Balance movement and affects of aft and forward C.G. on stability, performance, and stall characteristics.
3. What is Pressure Alt. Density Alt, Indicated Alt
4. What is true, indicated airspeed?

F. Task: Operation of Systems

(Explain at least 5 systems of airplane provided for practical test)

1. Primary flight controls and trim
 - a. How does an anti-servo tab provide positive static stability?
 - b. What type of aileron do we have?
2. Flaps, leading edge devices, and spoilers
 - a. What are the different types of flaps? How do they work?
 - b. What is a slot?
 - c. What is the purpose of a spoiler?
3. Powerplant and propeller
 - a. Max H.P.
 - b. Max rpm
 - c. What is a camshaft?
 - d. What is a push rod?
 - e. 4 strokes of the engine?
4. Landing Gear
 - a. What is the pressure switch?
 - b. What is the thermal relief valve do?
 - c. Show me the flow of fluid through the system.
5. Fuel, Oil, and Hydraulic system
 - a. How do the brakes work on the Arrow?
 - b. When you use the parking brake what is happening?
 - c. Where is the brake reservoir
 - d. What types of fuel can the Arrow use?
 - e. Draw out the fuel system.
6. Electrical System
 - a. What is the purpose of the battery, Alternator? Voltage Regulator, Overvoltage relay.
 - b. What are the 3 vents for the Battery for?
 - c. If I turn off my battery and alternator off in flight what will happen? Why?
7. Pitot/Static/Vacuum System
 - a. How does each instrument work?
 - b. What are the limitations?
 - c. What are the errors associated with each related to blockage?
8. Environmental
 - a. How does the aircraft receive heat.
9. Deicing and anti-icing systems
 - a. What are different systems an aircraft could have?

G. Task: Aero-medical Factors

(At least 4 of the following, symptoms, causes, effects, and corrective actions)

1. Hypoxia
 - a. What are the 4 types of Hypoxia?
2. Hyperventilation
 - a. What corrective action should you take?
3. Middle Ear and Sinus Problems
 - a. Often caused by respiratory infections

- b. Valsalva maneuver
- 4. Spatial disorientation
 - a. Different illusions (AIM Medical section)
- 5. Motion Sickness
- 6. Carbon Monoxide poisoning
- 7. Stress and fatigue – IMSAFE
- 8. Effects of alcohol and drugs, including over the counter drugs
- 9. Effects of nitrogen excesses during scuba dives upon a pilot and or passenger in flight. (See Aims)
 - a. What is the recommended waiting period after scuba diving?

H. Task: Physiological Aspects of Night Flying

- 1. What is the difference between the rods and cones of the eye?
- 2. Why do we have a blind spot?
- 3. How many more times sensitive does the eye get at night (rods vs cones)?
- 4. How do we adapt to changing light?
- 5. How does the scan change at night?
- 6. How would we recognize an aircraft passing from right to left in front of us?
- 7. What are 3 illusions that cause us to feel the airport is higher than actual?

I. Task: Lighting and equipment for night flying

- 1. What is the best color to use for a personal lighting device?
- 2. What is the required equipment for night flight? Explain what they mean with the fuse requirement?
- 3. What is the difference between a green and white beacon vs. a green only beacon?
- 4. What is a green, white, and yellow beacon indicate?
- 5. VASI can be seen how far out at night?
- 6. What lighting does Grand Forks have?
- 7. How do we know if an airport has controlled lighting?
- 8. What are the light gun signals for ground and flight? (91.125)

IX. Area of Operation: Emergency Operations

A. Task: Emergency Equipment and Survival Gear

- 1. Location in airplane
- 2. Method of operation
- 3. Servicing requirements
- 4. Method of storage

X. Area of Operation: High Altitude Operations

A. Task: Supplemental Oxygen

- 1. Requirements for passengers and crew (Regs 91.211)
- 2. Distinction on types of Oxygen
- 3. Method of determining Oxygen service availability (AFD)
- 4. Oxygen systems; continuous, demand, and pressure-demand
- 5. Care and storage of high-pressure oxygen bottles

Operations with specific standards for satisfactory completion.

III Area of operation: Airport Operations

- B. Task: Traffic Patterns
 - 1. +- 100ft, +-10 knots

IV. Area of Operation: Takeoffs, Landings, and Go-Arounds

- A. Task: Normal and Crosswind Takeoff and Climb
 - 1. Rotates at recommended airspeed, and accelerates to V_y , +-5kts

- B. Task: Normal and Crosswind Approach and Landing
 - 1. Maintains a stabilized approach and recommended airspeed with gust factor applied, +-5kts
- C. Task: Soft-Field Takeoff and Climb
 - 1. Remains in ground effect after takeoff while accelerating to V_x or V_y , as required., Maintains V_y , +-5 kts
- D. Task: Soft-Field Approach and Landing
 - 1. Maintains a stabilized approach and recommended airspeed, or in its absence, not more than $1.3 V_{so}$, with gust factor applied, +-5kts
- E. **Task: Short-Field Takeoff and Climb**
 - 1. Climbs at recommended airspeed and configuration, or in their absence at V_x , +5, -0 kts until obstacle is cleared, or until the airplane is at least 50 ft above the surface.
 - 2. After obstacle cleared, accelerates to and maintains V_y +-5 kts.
- F. **Task: Short-Field Approach and Landing**
 - 1. Maintains a stabilized approach and recommended airspeed, or in its absence, not more than $1.3 V_{so}$, with gust factor applied, +-5kts
 - 2. Touches down at a specified point at or within 100 feet beyond the specified point, with little or no float, with no drift, and with the airplane's longitudinal axis aligned with and over the center of the landing surface.
- G. **Task: Go-Around**
 - 1. Accelerate V_y before final flap retraction then climbs at B_y +-5kts
- V. **Area of Operation: Performance Maneuvers**
 - A. **Task: Steep Turns**
 - 1. No lower than 1500 AGL
 - 2. Speed not to exceed V_a
 - 3. 360 degree steep turn with 50 degree bank, +- 5 degrees, immediately followed by a 360 degree turn in opposite direction.
 - 4. Rolls out on entry heading +-10 degrees
 - 5. Entry altitude +-100 ft, and airspeed +- 10 kts
 - B. **Task: Chandelles**
 - 1. No lower than 1500 AGL
 - 2. Speed not to exceed V_a
 - 3. Established approx. 30 degree of bank
 - 4. Applies power and pitch
 - 5. Roll out within +- 10 degrees within airspeed of +5 kts of power-on-stall speed.
 - 6. Final altitude attained +-50 ft
- C. **Task: Lazy Eights**
 - 1. No lower than 1500 AGL
 - 2. Achieves the following throughout the task –
 - a. Constant change of pitch, bank, and turn rate.
 - b. Altitude and airspeed consistent at the 90* points, +-100 ft, and +-10 kts respectively.
 - c. Attains starting altitude and airspeed at completion of maneuver +- 100 ft and +- 10 kts respectively.
 - d. Heading tolerance +-10 degrees at each 180* point.
- VI. **Area of Operation: Ground Reference Maneuver**
 - A. Task: Eights on Pylons
 - 1. Permits approx. 3 – 5 seconds of straight-and-level flight between them.
 - 2. Applies the necessary corrections so that the line-of-sight reference line remains on the pylon with minimum longitudinal movement.
 - 3. Avoid slips and skids

VII. Area of Operation: Navigation

- A. Task: Pilotage and Dead Reckoning
 - 1. Verifies the airplane's position within 1 nautical mile of flight planned route at all times.
 - 2. Arrives at the en route checkpoints or destinations within 3 minutes of the ETA
- B. Task: Navigation systems and ATC Radar Services
- C. Task: Diversion
 - 1. +/- 100 ft and heading +/- 10 degrees

VIII. Area of Operations: Slow flight and Stalls**A. Task Maneuvering During Slow Flight**

- 1. Min. 1500 AGL entry alt.
- 2. 1.2 Vs1, +/- 5kts
- 3. +/-50ft
- 4. +/-10 degrees heading
- 5. +/-10 degrees bank
- 6. +/- 10 degrees rollout

B. Power-Off Stalls

- 1. Min 1500 AGL entry alt.
- 2. +/-10 degrees heading
- 3. Not exceed specified bank of 30* +/-10*
- 4. Recognizes and "announces" the onset of the stall by identifying the first aerodynamic buffeting or decay or control effectiveness.
- 5. Accelerates to Vx or Vy speed

C. Power-On Stalls

- 1. Min 1500 AGL entry alt.
- 2. +/-10 degrees heading
- 3. Specified bank not to exceed a 20* angle of bank, +/-10*.

IX. Area of Operations: Emergency Operations**A. Task: Emergency Descent**

- 1. Establish airspeed +/-5kts

B. Task: Emergency Approach and Landing

- 1. Best-glide, +/-10kts

C. Task: Systems and Equipment Malfunctions

- 1. Knowledge of the elements related to causes, indications, and pilot actions for various systems and equipment malfunctions
- 2. Analyzes the situation and takes appropriate action for at least five (5) of the simulated emergencies – (not listed but know all emergencies related to Arrow and appropriate checklist use.)