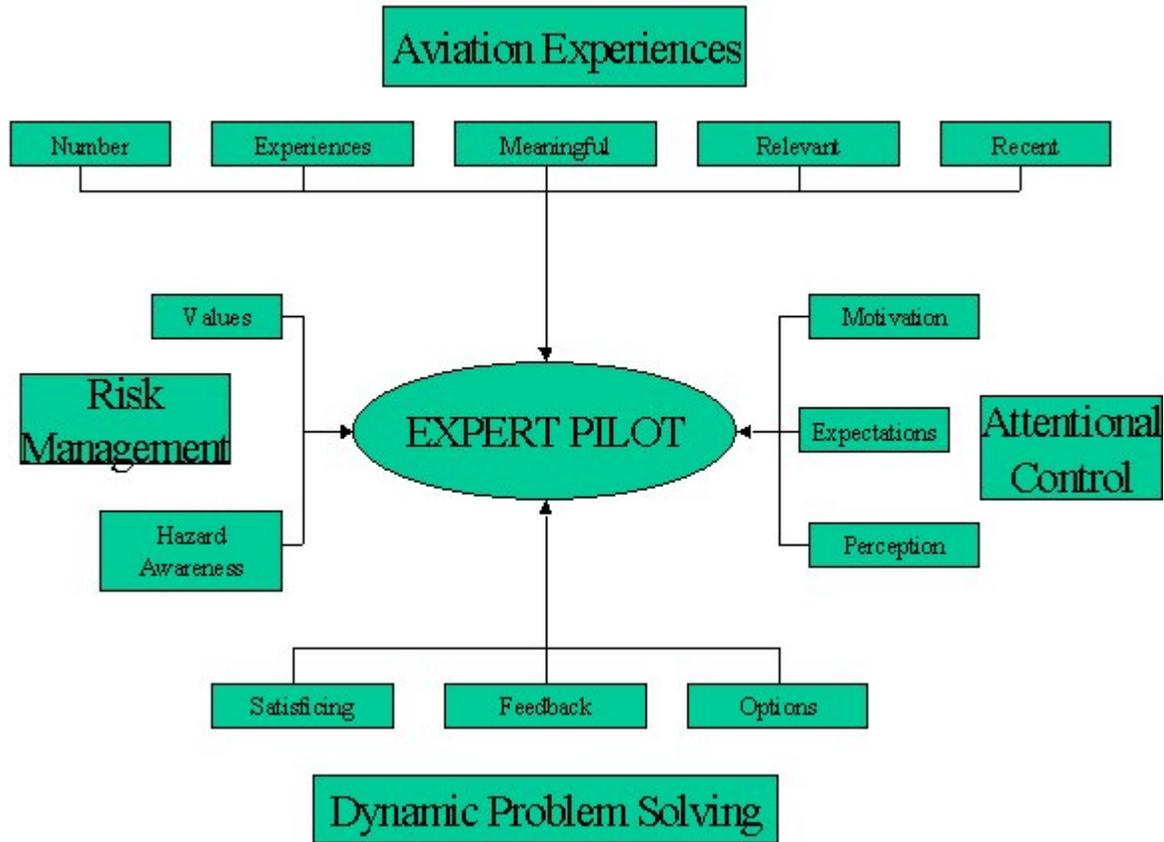


Appendix A

The Expert Pilot Model



Jensen, 1995

Appendix B

Syllabus for PPGS and ADM Components

<i>Class #</i>	<i>PPGS Topic</i>	<i>ADM Models/Activities</i> *
Class 1	Airports-Aircraft and Traffic Patterns Intro. to Flight Planning and FAA Regs.	Informal discussion - personal experiences
Class 2	Aerodynamics	Video: Loss of Judgement
Class 3	Communications - ATC - Airspace	Informal discussion - personal experiences
Class 4	Aircraft Instruments	Informal discussion - personal experiences
Class 5	Aircraft Systems & Pre-flight Inspection	Informal discussion - personal experiences
Class 6	Weight and Balance	Informal discussion - personal experiences
Class 7	Aircraft Performance	Informal discussion - personal experiences
Class 8	Basic Meteorology	ADM Scenario #4 (see Appendix E)
Class 9	Weather Reports and Forecasts	<u>ADM Interviews</u> : Scenarios 1-3 and FAA Video: "Executive Decision" **
Class 10	Basic Navigation	<u>ADM Interviews</u> : Scenarios 1-3 and FAA Video: "Executive Decision" **
Class 11	Radio Navigation	"Hazardous Attitude" Model and Risk Mgmt. (Traffic Pattern Decisions)
Class 12	Flight Planning	FAA Weather CD-ROM & Scenarios 1-3
Class 13	FAA Rules and Regulations	FAA "PAVE" Model and "I'M SAFE" Checklist: Personal Minimums Checklist Scenarios 5-6
Class 14	Medical Factors	"SDRV" Model, "DECIDE" Model, "Expert Pilot" Model. FAA Video "Executive Decision" & Scenarios 7-9
Class 15	Practice Examination	FAA Videos: "VFR into IFR" and "Night Flight." Stress Mgmt./Poor Judgement Chain. Scenarios 10-12

* **MODELS:** HAZARDOUS ATTITUDES - PAVE - SDRV - DECIDE - EXPERT PILOT

ACTIVITIES: Written Scenarios - FAA Videos - "I'M SAFE" Checklist - Stress Management - Poor
Judgement Chain - FAA Weather Decision-making Video - Personal Minimums -
Checklist - Risk Management - Informal Discussion

** All student pilot interviews were conducted after class 8 and prior to class 11

Appendix C

The Personal Minimums Checklist
(Revised for use by Student Pilots)

Pilot	Aircraft	Environment	External Pressures
<p><u>Experience/Recency</u></p> <p>Takeoffs/Landings in the last ___ days</p> <p>Hours in Make/Model in the last ___ days</p> <p>Terrain and Airspace familiarity?</p>	<p><u>Fuel Reserves</u></p> <p>Day: ___ hours Night: ___ hours</p>	<p><u>Airport Conditions</u></p> <p>Crosswind: ___ % of max POH</p> <p>Runway Length: ___% more than POH</p>	<p><u>Trip Planning</u></p> <p>Allowance for Delays ___ minutes/hours</p>
<p><u>Physical Condition</u></p> <p>Sleep ___ In last 24 hours</p> <p>Food and Water: ___ In last 24 hours</p> <p>Alcohol: none in the last ___ hours</p> <p>Drugs/Medication: none in the last ___ hours</p> <p>Stressful Events: none in the last ___ hours</p> <p>Illness: none in the last ___ days</p>	<p><u>Experience in Type</u></p> <p>Takeoffs/Landings in aircraft type in the last ___ days</p>	<p><u>Weather</u></p> <p>Reports & Forecasts not more than ___ hours old</p>	<p><u>Diversion/Alternate Plans</u></p> <p>Notification of person you are meeting</p> <p>Arrangement for flight on alternate date</p>
	<p><u>Aircraft Performance</u></p> <p>Must Consider: Gross Weight Load Distribution Density Altitude Performance Charts</p>	<p><u>Weather for VFR</u></p> <p>Ceiling Day ___ feet Ceiling Night ___ feet</p> <p>Visibility Day ___ miles</p> <p>Visibility Night ___ miles</p>	<p><u>Personal Equipment</u></p> <p>Credit card and telephone numbers available</p> <p>Appropriate clothing and/or personal needs (e.g., eye wear, medication) in the event of an unexpected stay</p>
	<p><u>Aircraft Equipment</u></p> <p>Avionics: familiar with equipment NAV/COM: equipment appropriate to flight Charts: current Clothing: suitable Survival Gear: appropriate for flight/terrain</p>		

Appendix D

General Aviation Accidents/Incidents Involving Student Pilots on Solo Flights
September, 1999 Through August, 2000

Date	Phase of Flight in Which Accident Occurred	Injuries
9-1-'99	Aborted Landing (Go Around)	Uninjured
9-3-'99	Landing	Uninjured
9-5-'99	Loss of Control at Low Altitude	Minor
9-12-'99	Lost Control During Side Slip During Landing	Uninjured
9-21-'99	Hard Landing During Night Flight	Uninjured
9-30-'99	Engine Failure Resulting in Forced Landing	Uninjured
10-6-'99	Hard Landing	Uninjured
10-13-'99	Aborted Landing (Go Around) in Cross Wind	Uninjured
10-15-'99	Landed With Brakes On	Uninjured
10-16-'99	High Speed Taxi Resulting in Aircraft Becoming Airborne and Subsequent Stall	Uninjured
10-28-'99	Landing	Uninjured
10-28-'99	Landed Long — Rolled off Runway	Minor
10-29-'99	Lost, Low Fuel: Resulted in Precautionary Landing	Uninjured
11-11-'99	Landing	Uninjured
11-12-'99	Landing	Uninjured
11-21-'99	Stall at Low Altitude	Serious
11-23-'99	Landing	Minor
12-1-'99	Takeoff — Attempting “touch-and-go”	Uninjured
12-8-'99	Flying Into IFR Conditions	Fatal
12-17-'99	Landing	Uninjured
12-18-'99	Landing	Uninjured
12-22-'99	Midair Collision	Fatal

Appendix D

General Aviation Accidents/Incidents Involving Student Pilots on Solo Flights
September, 1999 Through August, 2000

Date	Phase of Flight In Which Accident Occurred	Injuries
1-2-'00	Power Loss Resulting in Forced Landing	Minor
1-14-'00	Loss of Control	Fatal
2-5-'00	Landing in Cross Wind	Uninjured
2-7-'00	Takeoff	Uninjured
2-7-'00	Landing in Cross Wind	Uninjured
2-7-'00	Landing	Uninjured
2-7-'00	Landing	Uninjured
2-8-'00	Forced Landing	Fatal
2-8-'00	Midair Collision	Fatal
2-9-'00	Landing	Uninjured
2-13-'00	Landing on ice — skidded into snowbank	Uninjured
2-15-'00	Landing	Fatal
2-16-'00	Takeoff — touch-and-go	Uninjured
2-21-'00	Takeoff	Uninjured
2-27-'00	Landing	Uninjured
2-29-'00	Landing	Uninjured
3-11-'00	Lost — Fuel Exhaustion — Forced Landing	Uninjured
3-15-'00	Landing Stall in Cross Wind	Uninjured
3-25-'00	Lost control while maneuvering at low altitude	Fatal
4-2-'00	Landed at Wrong Airport in Strong Winds	Uninjured
4-3-'00	Takeoff	Uninjured
4-11-'00	Engine Failure During Go-Around	Uninjured
4-11-'00	Takeoff	Uninjured

Appendix D

General Aviation Accidents/Incidents Involving Student Pilots on Solo Flights
September, 1999 Through August, 2000

Date	Phase of Flight in Which Accident Occurred	Injuries
4-14-'00	Landing at Night — loss of control	Uninjured
4-18-'00	Aborted Landing	Uninjured
4-20-'00	Landing	Minor
4-20-'00	Takeoff	Uninjured
4-20-'00	Lost — Fuel Starvation	Uninjured
4-21-'00	Landing	Uninjured
4-22-'00	Ran Out of Fuel — Forced Landing	Uninjured
5-16-'00	Landing	Minor
5-19-'00	Takeoff	Uninjured
5-22-'00	Landing	Uninjured
6-4-'00	Takeoff	Uninjured
6-8-'00	Takeoff	Uninjured
6-9-'00	Takeoff — Stop and Go: Veered off Runway	Uninjured
6-15-'00	Takeoff	Uninjured
6-18-'00	Taxiing	Uninjured
6-19-'00	Landing	Uninjured
6-23-'00	Landing	Uninjured
6-30-'00	Landing	Serious
6-30-'00	Landing	Uninjured
7-1-'00	Landing	Uninjured
7-1-'00	Landing	Uninjured
7-1-'00	Landing	Uninjured
7-2-'00	Lost control of aircraft	Fatal

Appendix D

General Aviation Accidents/Incidents Involving Student Pilots on Solo Flights
September, 1999 Through August, 2000

Date	Phase of Flight in Which Accident Occurred	Injuries
7-3-'00	Forced Landing	Uninjured
7-6-'00	Flew Into IFR Conditions	Fatal
7-6-'00	Landing	Uninjured
7-8-'00	Landing	Uninjured
7-9-'00	Takeoff — Ran Into Power Lines With Passenger	Uninjured
7-18-'00	Landing — With Quartering Tail Wind	Fatal
7-18-'00	Maneuvering After Takeoff	Fatal
7-18-'00	Takeoff	Uninjured
7-21-'00	Aborted Takeoff	Uninjured
7-22-'00	Forced Landing	Uninjured
7-29-'00	Stalled During Go-Around	Serious
8-1-'00	Forced Landing	Serious
8-3-'00	Takeoff	Fatal
8-3-'00	Landing	Uninjured
8-9-'00	Takeoff — Ran Out of Fuel	Uninjured
8-19-'00	Takeoff — Engine Problem	Uninjured
8-20-'00	Landing	Uninjured
8-21-'00	Landing	Uninjured
8-21-'00	Forced Landing	Uninjured

Appendix E

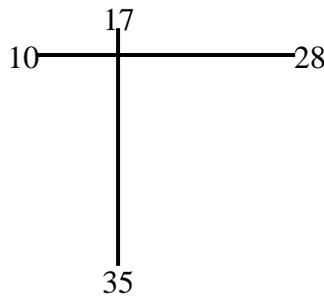
ADM Scenarios Presented to Student and Expert Subjects & Student Pilots in PPGS

Scenario 1: (Relates to all ADM models except PAVE)

You are preparing to land at the Regional Airport in a rented Cessna 172. The winds at the Regional airport are significantly stronger than had been previously reported with the ATIS reporting winds from 280 degrees at 10 knots with gusts to 17 knots. The tower is vectoring traffic to the primary 5,100' runway 35. A Piper Cherokee asks to use the 4,200 x 75 runway 28. The Cherokee is told that runway is not active. There are two other aircraft in the traffic pattern and a commuter aircraft just reported 15 miles out for landing. The temperature is 85 degrees Fahrenheit and the barometric pressure has been decreasing. The nearest alternate airport is Southside Airport which is 20 miles north.

Airport	Runway	24 Hr. Tower	Radar	Lighted Runway	Telephone	Maintenance
Regional	5100x75	Yes	Yes	Yes	Yes	24 Hours
	4200x75					
Southside	4835x100	Yes	Yes	Yes	Yes	0700-1800
	4129x100					

Regional Airport



Wind: → 10 knots gusting to 17 knots

Rank Order

- 1 2 3 4
- 1 2 3 4
- 1 2 3 4
- 1 2 3 4

Alternative

- a. accept clearance to runway 35
- b. ask to use runway 28
- c. insist on using runway 28 stating that the cross winds are unsafe for you to use runway 35
- d. divert to Southside Airport where the runway is almost directly aligned with the wind.

Appendix E

ADM Scenarios Presented to Student and Expert Subjects & Student Pilots in PPGS

Scenario 2: (Relates to all ADM models except PAVE)

You are cruising at 4,500' on top of a very thin haze layer (the ground remains in sight). It has been twenty-five hours since the engine was overhauled and the pre-takeoff run-up was well within limits. The engine slowly loses RPM with no indications of oil or fuel problems. You suspect carburetor icing and pull on the carburetor heat. The engine backfires, vibrates and gradually continues to lose RPM. In addition, you notice that the ammeter indicates that the alternator may not be supplying electrical power to the battery. You are 15 miles from the nearest airport which has an operating control tower. You are in an area with moderate to heavy air traffic. You decide to:

<u>Rank Order</u>	<u>Alternative</u>
1 2 3 4	a. pull out the mixture, stop the engine and check the fuel selector valve, mag switch settings and declare an emergency.
1 2 3 4	b. push in the carburetor heat, keep the engine running and divert to the closest airport
1 2 3 4	c. keep the carburetor heat on and see what happens
1 2 3 4	d. push in the carburetor heat, keep the engine at idle, declare an emergency and ask for advice

Appendix E

ADM Scenarios Presented to Student and Expert Subjects & Student Pilots in PPGS

Scenario 3: (Relates to PAVE and Hazardous Attitudes ADM models)

You are at a small airport with minimal facilities and at the end of your walk around pre-flight, the flaps refuse to retract from 30 degrees. It was a planned two hour flight back to your home airport. The weather, which was good, seems to be deteriorating with higher winds and lower ceilings than were forecast. A friend, who is a student pilot at your home airport, has scheduled your aircraft for his Private Pilot Flight test with the FAA in four hours. An airport attendant (who is not a mechanic) says he has seen this problem before and states that the “limit switch is stuck.” There is no A&P mechanic at this airport, but there is an A&P mechanic at an airport 35 miles away. The attendant says he knows where a switch for this exact model aircraft can be quickly picked-up and he could install it. He says he also could reach up through the inspection port and free the switch enough to raise the flaps but cannot guarantee they will work when airborne. You call the flight school and get their answering machine. You are on your own. You decide to:

Rank Order

1 2 3 4

1 2 3 4

1 2 3 4

1 2 3 4

Alternative

- a. leave the flaps down and fly to the nearby (35 miles) airport and have a certified (A&P) mechanic fix the problem.
- b. have the attendant reset the switch, get the flaps up and fly home
- c. have the attendant change the switch, check it out then fly home and have the flight school’s mechanic inspect the work.
- d. wait until the flight school can fly an A&P mechanic in and change the switch.

Appendix E

ADM Scenarios Presented to Student Pilot and Expert Subjects & Student Pilots in PPGS

FAA Video: Executive Decision (Relates to all ADM Models)

This scenario is presented to students and experts via an FAA videotape entitled “Executive Decision.” The videotape involves a pilot who is planning a cross country (more than 50 nautical miles) trip to an airport north of Chicago. There are a variety of questionable pre-flight and in-flight decisions that the pilot makes in the videotape. Student and expert pilots will be asked to respond to the decisions that were made by the pilot in the video.

Specifically, they will be asked about the possible explanations for the decisions made by the pilot featured in the video.

Appendix E

Remainder of ADM Scenarios to be Presented to Students in PPGS

Scenario 4:

You have announced your position on the Common Traffic Advisory Frequency. Upon starting your turn to base, you see another aircraft on a long straight-in approach which will conflict with your approach. You decide to:

Rank Order

1 2 3 4

1 2 3 4

1 2 3 4

1 2 3 4

Alternative

a. continue on, flash your landing lights

b. do a level 360 degree turn for spacing

c. turn right, exit the pattern and re-enter

d. extend your downwind to take spacing behind the straight-in aircraft

Scenario 5:

You are on short final at an uncontrolled airfield with one other airplane in the pattern and realized that you have not completed your pre-landing checklist. You decide to:

Rank Order

1 2 3 4

1 2 3 4

1 2 3 4

1 2 3 4

Alternative

a. check the flap setting and land

b. go around

c. check the mixture and land

d. look for the other aircraft and land

Appendix E

ADM Scenarios to be Presented to Students in PPGS

FAA Video: Night Flight

This video depicts the decisions made by a pilot who is landing at night at a controlled airfield. The flight culminates in the pilot taxiing his aircraft onto an active runway. There are a variety of judgement issues that are discussed and analyzed by student pilots.

Scenario 6

You are one hour into a three hour cross-country flight returning to your home airport in the mid afternoon. You have been flying at 5,500 feet M.S.L. over a scattered deck of clouds and find yourself lost. The cloud deck thins out to where you can see the ground in all directions. You decide to:

Rank Order

1 2 3 4

1 2 3 4

1 2 3 4

1 2 3 4

Alternative

- a. call a Flight Service Station on the radio, report yourself lost, and have them give you a position fix and vector back to course.
- b. find a prominent landmark, circle it until you can find it on your sectional chart, fix your position and lay out a heading to get back on course.
- c. go to the nearest town, descend and read the name of the town on a water tower or other prominent structure, fix your position and plot a heading to get back on course.
- d. find an airfield, land and ask where you are, refile your flight plan then continue

Appendix E

ADM Scenarios to be Presented to Students in PPGS

Scenario 7

You have been planning a cross-country flight for several weeks. The weather is forecast as good VFR with a summer haze under 3000 feet and broken scattered clouds along the route of flight. The only problem is you know you have a minor summer cold. You can clear your ears and only feel a little achy with no headache. You decide to:

Rank Order

1 2 3 4
 1 2 3 4
 1 2 3 4
 1 2 3 4

Alternative

- a. take the minimal dosage of cold tablets and go
- b. cancel the flight
- c. call the doctor and ask for a prescription for medication
- d. stick a menthol inhaler in your pocket. Take no other medication and go.

Scenario 8

You plan to depart your home airport at 7:00 AM for a short practice flight. The aircraft must be returned by 10:00 AM for another student. You slide the left seat back to climb in and start the pre-flight when the seat comes off of the slide tracks. You get the seat back on the track and it seems to hold. You notice that two screws that hold a keeper on the back of the track are missing and find one under the front seat. The local mechanic will not arrive for two or three hours. You decide to:

Rank Order

1 2 3 4
 1 2 3 4
 1 2 3 4
 1 2 3 4

Alternative

- a. borrow a screwdriver, put in the screw and fly as is having the mechanic check or fix the seat upon your return
- b. wait until the mechanic arrives and have him fix the seat
- c. skip the repairs and fly the airplane from the right seat
- d. call your flight school and ask what to do

Appendix E

ADM Scenarios to be Presented to Students in PPGS

Scenario 9

You have taken off solo from a controlled airport for a flight to your home airport. You anticipate that the flight will take 45 minutes. You leveled off at 3,500 feet when you hear a banging start on the right side of the airplane. Everything checks out OK so you call the Fixed Base Operator at the controlled airport and ask for advice. After a short period they ask you to find both ends of the right seat belt. You can only find one. You decide to:

Rank Order

1 2 3 4

1 2 3 4

1 2 3 4

1 2 3 4

Alternative

a. reach over, open the right door, pull in the seatbelt and close the door

b. return to the controlled airport, land and pull in the seat belt

c. continue and find an airspeed where the banging stops and continue to your destination

d. find the closest airport out of controlled airspace, land and pull in the seatbelt

Scenario 10

You are looking for a C-172 to rent. You have decided the most important thing to look for in a rental aircraft is:

Rank Order

1 2 3 4

1 2 3 4

1 2 3 4

1 2 3 4

Alternative

a. the overall appearance — is it neat and does it look cared for

b. a clean engine with clean oil

c. new NAV/COM radios

d. smooth skin, no dents or dings

Appendix E

ADM Scenarios to be Presented to Students in PPGS

Scenario 11

You have announced your position on the Common Traffic Advisory Frequency (CTAF).

Upon starting your turn to base, you see another aircraft on a straight-in final approach which will conflict with your approach. You decide to:

Rank Order

1 2 3 4

1 2 3 4

1 2 3 4

1 2 3 4

Alternative

a. continue on, flash you landing lights

b. do a level 360 degree turn for spacing

c. turn right, exit the pattern and re-enter

d. extend your downwind to take spacing behind the straight-in aircraft

Scenario 12

It is a cool, clear summer afternoon with no wind when you contact the control tower at your destination airport. You realize you are going to be spaced 4 miles behind a commercial jet on final approach to runway 17. You decide to:

Rank Order

1 2 3 4

1 2 3 4

1 2 3 4

1 2 3 4

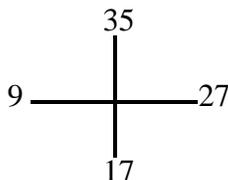
Alternative

a. stay high on final and land past where you saw the jet touch down

b. ask the controller for a 360 degree turn to increase spacing

c. ask to land on runway 9

d. ask for a low approach and a visual pattern to runway 17



Appendix E

ADM Scenarios to be Presented to Students in PPGS

FAA Video: VFR into IFR

This video depicts a private pilot who proceeds towards his destination in deteriorating conditions. Student pilots examine the thought processes and decisions made by the private pilot and discuss the factors that led to his decisions.