Appendix F
Expert Pilot Codes

DISSEP: Code Book—Family Tree

- Code Families
  - ACTIONS
    - ASKFORASSST
    - NEGACIONS
    - PLAN
  - POSATIONS
  - ALTERNATIV
    - ALT#1
    - ALT#4
    - ALTPLAN
    - NOTOPTION
  - ANALYSIS
    - CONTEXT
    - DEFINESIT
    - EXPERIENCE
    - KNOWLEDGE
    - LESSON
    - MOREINFO
    - PRACTICE
    - RECOGNITIO
    - TIME
  - CONCERNS
    - GETHEREIT
    - LEGAL
    - OUTSIDEFAC
    - PRIORITY
    - SAFETY
    - SITAMARE
    - STRESS
    - TRAFFIC
    - UNCERTAIN
    - WEATHER
Appendix F
Expert Pilot Codes

<table>
<thead>
<tr>
<th>Code Word</th>
<th>Parent</th>
<th>Text</th>
<th>Level</th>
<th>Added</th>
<th>Modified</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACTIONS</td>
<td>None</td>
<td>Yes</td>
<td>1</td>
<td>03/22/01</td>
<td>07/04/01</td>
<td>parent code only that reflects variety of acts taken by pilot (not used as a code word - unlike other parent codes that are also used as code words).</td>
</tr>
<tr>
<td>ALT#1</td>
<td>ALTERNATIV</td>
<td>Yes</td>
<td>2</td>
<td>03/21/01</td>
<td>03/21/01</td>
<td>pilots first choice among four listed alternatives in scenario</td>
</tr>
<tr>
<td>ALT#4</td>
<td>ALTERNATIV</td>
<td>Yes</td>
<td>2</td>
<td>03/21/01</td>
<td>03/21/01</td>
<td>pilot's last choice among four alternatives listed in scenario</td>
</tr>
<tr>
<td>ALTERNATIV</td>
<td>None</td>
<td>Yes</td>
<td>1</td>
<td>03/21/01</td>
<td>07/05/01</td>
<td>pilot discusses available courses of action,</td>
</tr>
<tr>
<td>ALTPLAN</td>
<td>ALTERNATIV</td>
<td></td>
<td>2</td>
<td>05/24/01</td>
<td>07/05/01</td>
<td>pilot emphasizes the effects of &quot;leaving yourself an out&quot; backup plans and/or an &quot;escape route&quot; May also emphasize the value of having alternatives Also includes more detailed elaborations of a &quot;Plan&quot; (e.g., if X doesn't work, then I'll try Y).</td>
</tr>
<tr>
<td>ANALYSIS</td>
<td>None</td>
<td>Yes</td>
<td>1</td>
<td>03/21/01</td>
<td>05/31/01</td>
<td>pilot appears to be analyzing situation and weighing options</td>
</tr>
<tr>
<td>ASKFORASST</td>
<td>ACTIONS</td>
<td>Yes</td>
<td>2</td>
<td>03/21/01</td>
<td>07/05/01</td>
<td>pilot asks for help or information</td>
</tr>
<tr>
<td>CONCERNS</td>
<td>None</td>
<td>Yes</td>
<td>1</td>
<td>03/21/01</td>
<td>07/10/01</td>
<td>pilot discusses factors related to safety of flight</td>
</tr>
<tr>
<td>CONTEXT</td>
<td>ANALYSIS</td>
<td>Yes</td>
<td>2</td>
<td>03/25/01</td>
<td>05/31/01</td>
<td>pilot stresses or discusses the framework within which the scenario occurs.</td>
</tr>
</tbody>
</table>
## Appendix F
### Expert Pilot Codes

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<tbody>
<tr>
<td>DEFINESIT</td>
<td>ANALYSIS</td>
<td>Yes</td>
<td>2</td>
<td>03/25/01</td>
<td>05/31/01</td>
<td>pilot attempts to define situation more specifically and/or to put situation within a familiar context</td>
</tr>
<tr>
<td>EXPERIENCE</td>
<td>ANALYSIS</td>
<td>Yes</td>
<td>2</td>
<td>03/21/01</td>
<td>09/01/01</td>
<td>Pilot discusses the value of previous flying OR pilot discusses personal incidents and/or actions. Or incidents of which he has knowledge and that are related (hopefully) to the scenario</td>
</tr>
<tr>
<td>GETHEREIT</td>
<td>CONCERNS</td>
<td>Yes</td>
<td>2</td>
<td>06/18/01</td>
<td>06/18/01</td>
<td>condition in which pilot ignores all compelling reasons not to fly because of their desire to arrive at destination</td>
</tr>
<tr>
<td>KNOWLEDGE</td>
<td>ANALYSIS</td>
<td>Yes</td>
<td>2</td>
<td>03/25/01</td>
<td>05/24/01</td>
<td>pilot expresses or seems to imply that he is aware of specific information related to scenario or the importance of acquiring specific information</td>
</tr>
<tr>
<td>LEGAL</td>
<td>CONCERNS</td>
<td>Yes</td>
<td>2</td>
<td>03/25/01</td>
<td>03/25/01</td>
<td>legal issues and/or rules are discussed</td>
</tr>
<tr>
<td>LESSON</td>
<td>ANALYSIS</td>
<td>Yes</td>
<td>2</td>
<td>05/23/01</td>
<td>06/11/01</td>
<td>subject discusses important items that should be learned from a particular scenario and/or a lesson that had been taught to a pilot or should be taught</td>
</tr>
<tr>
<td>MOREINFO</td>
<td>ANALYSIS</td>
<td>Yes</td>
<td>2</td>
<td>03/25/01</td>
<td>03/25/01</td>
<td>pilot indicates that he desires to have more information</td>
</tr>
<tr>
<td>NEGACTIONS</td>
<td>ACTIONS</td>
<td>Yes</td>
<td>2</td>
<td>03/25/01</td>
<td>07/05/01</td>
<td>actions and/or decisions taken by pilot that are viewed by subject as negative, not productive, detrimental and/or dangerous</td>
</tr>
<tr>
<td>NOTOPTION</td>
<td>ALTERNATIV</td>
<td>Yes</td>
<td>2</td>
<td>03/21/01</td>
<td>07/05/01</td>
<td>pilot states that he/she would not even consider a particular alternative</td>
</tr>
</tbody>
</table>
### Appendix F

**Expert Pilot Codes**

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<tbody>
<tr>
<td>OUTSIDE FACS</td>
<td>CONCERNS</td>
<td>Yes</td>
<td>2</td>
<td>05/23/01</td>
<td>05/23/01</td>
<td>subject discusses extraneous and/or irrelevant information that should not be considered by pilots when attempting to make a decision.</td>
</tr>
<tr>
<td>PLAN</td>
<td>ACTIONS</td>
<td>Yes</td>
<td>2</td>
<td>05/22/01</td>
<td>07/05/01</td>
<td>subject discusses his thoughts, ideas, and preparations regarding how he will address a scenario or a lack of such preparations.</td>
</tr>
<tr>
<td>POSACTIONS</td>
<td>ACTIONS</td>
<td>Yes</td>
<td>2</td>
<td>03/25/01</td>
<td>06/18/01</td>
<td>actions taken by pilot that are viewed by subject as positive, helpful and/or promote safety.</td>
</tr>
<tr>
<td>PRACTICE</td>
<td>ANALYSIS</td>
<td>Yes</td>
<td>2</td>
<td>06/15/01</td>
<td>06/15/01</td>
<td>pilot discusses his personal policies and procedures that relate to flying and could influence his decision-making.</td>
</tr>
<tr>
<td>PRIORITY</td>
<td>CONCERNS</td>
<td>Yes</td>
<td>2</td>
<td>03/24/01</td>
<td>03/25/01</td>
<td>pilot discusses priorities and/or attempts to prioritize his/her actions.</td>
</tr>
<tr>
<td>RECOGNITIO</td>
<td>ANALYSIS</td>
<td>Yes</td>
<td>2</td>
<td>03/25/01</td>
<td>05/31/01</td>
<td>action based on the recognition of an experience/incident/knowledge that can be used to help pilots resolve problems.</td>
</tr>
<tr>
<td>SAFETY</td>
<td>CONCERNS</td>
<td>Yes</td>
<td>2</td>
<td>03/21/01</td>
<td>03/21/01</td>
<td>pilot expresses a concern related to the safety of the flight.</td>
</tr>
<tr>
<td>SITUAWARE</td>
<td>CONCERNS</td>
<td>Yes</td>
<td>2</td>
<td>05/25/01</td>
<td>05/25/01</td>
<td>Situational Awareness: Pilot expresses concern about maintaining the &quot;big picture&quot; and not focusing on one item to the exclusion of all others.</td>
</tr>
<tr>
<td>STRESS</td>
<td>CONCERNS</td>
<td>Yes</td>
<td>2</td>
<td>03/25/01</td>
<td>03/25/01</td>
<td>pilot discusses the effects of stress and/or the causes of stress.</td>
</tr>
</tbody>
</table>
### DISSEP: Code Book—All Code Words

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</thead>
<tbody>
<tr>
<td>TIME</td>
<td>ANALYSIS</td>
<td>Yes</td>
<td>2</td>
<td>03/25/01</td>
<td>06/07/01</td>
</tr>
</tbody>
</table>

- **pilot refers to time issues or the necessity to react in a timely manner.**

| TRAFFIC   | CONCERNS | Yes  | 2     | 05/25/01| 05/25/01  |

- **subject discusses or expresses concerns about other aircraft**

| UNCERTAIN | CONCERNS | Yes  | 2     | 06/18/01| 06/18/01  |

- **pilot expresses feelings that he is unsure of a particular situation or facet of a situation**

| WEATHER   | CONCERNS | Yes  | 2     | 03/25/01| 05/24/01  |

- **states that the weather is a consideration and/or a concern for the scenario or situation**
Appendix G

Expert Pilot Coded Transcripts

Coded Version of EXP1SC2 9/2/01 6:10:42 PM Page 1

EXP1SC2: March 15, 2001

ELD: Here is the next scenario. I'll let you take a few minutes and read it over and then we'll discuss it.

EP1: OK. Write on this? [EP1 taps on paper with written scenario]

ELD: Oh, yes, feel free to write on that.

EP1: OK.

ELD: Take whatever notes you want.

EP1: [EP1 reads scenario 2]. All right, ask away.

ELD: OK. Ummm, you're in this situation. What would be your thought process based on this scenario?

$-ANALYSIS $-KNOWLEDGE $-DEFINISIT

EP1: Ummm, all right, first probable thing, you said that I've got twenty-five hours since the engine was overhauled which means to me that the plane has been sitting around for some time. Some time being let's say three weeks to get the engine off and removed and replaced. There's a possibility that condensation could have built in the fuel tanks. So I

$-DEFINISIT could have water in the gas. Now you're saying here the engine backfires, vibrates and continues to lose RPM. You don't say what the temperature is, ahhh, you know, is it $-MORONFR

$-CONTEXT

summer, winter? What? If, let's say it's winter time, that there's the good possibility that that condensation in the fuel tank could have frozen and I now have ice and not necessarily just water, you know I don't have water I have ice. So that is a possibility and it's clogging up the ahhh, the hole that the fuel drains through. Maybe what I would do is ahh, rock the wings and try to move the ice if that's the case. If that doesn't do anything then OK, I've got a bigger problem than everything and I am going to get hold of this operating ahhh, control tower and tell them that I'm fifteen miles away. I'm having engine problems and I'm requesting priority for landing.

ELD: You mentioned ahhh, that temperature might be a factor and you talked about the winter. Would there
Appendix G
Expert Pilot Coded Transcripts

Coded Version of EXP1SC2 9/1/01 2:05:48 PM Page 3

'I've got this problem, I'm gonna handle it right now. Ahhh, my decision is that I'm going to go to that airport and I've already called them up and that's where I'm going to go.

ELD: And other than putting it [the airplane] in the best glide speed and going to the nearest airport, what would be your next most important consideration after that?

EPI: Ahhm, next most important consideration. Well, you also put in here that the ammeter is indicating the alternator is ahhhh, not supplying electrical power. Again, yeah I'm going to revert back to 'hey Mr. Control Tower, looks like my battery is going down, I understand runway such-and-such is the preferred runway. I'm now declaring an emergency and I'm shutting off my ahhhh, alternator and I'll see you on the ground.

$-PLAN
Conserve as much as the electrical power that I can for the flaps that I might need when I get closer to the airport.

ELD: Suppose, in this scenario, it becomes apparent that you're not going to be able to make the airport.

$-DEFINESIT
EPI: Do I have power? I mean electrical power?

ELD: [nods yes]

EPI: I'm adding problems [laughs] on top of...

ELD: Tell me what would happen if you did and you didn't [have electrical power]

$-ALTPLAN $-CONTEXT
EPI: OK. If I ahhhh realize that I'm not going to make the airport I'm going to call the tower and say 'Sir, I'm not going to make the [airport]. I'm going to be looking for a field, a road, you know, something to put the airplane down in' and do it as carefully as I can. If I do have electrical power, well I guess that's that I did have electrical power. If I don't have electrical power ahhhh,

$-DEFINESIT
yeah, I'll just look for the best place and go for it right now, instead

$-ANALYSIS $-SAFETY

$-PLAN
of trying to stretch the glide. If I know that I'm going to be landing five
Appendix G
Expert Pilot Coded Transcripts

Coded Version of EXP1SC2  9/1/01 2:05:48 PM  Page 4

miles away from the airport, why not 180 -#
just make it five miles? Why do I 181 -#
want to stretch it to four? I have a 182 -#
good site underneath of me. I'm going 183 -#
to put it down right there. 184 -# -%  

ELD: So, to say that again. If you 186
don't think you're going to make it 187
[to the airport] you would be trying 188
to land - 189

EP1: Right now. 191

ELD: Looking at this scenario in its 193
entirety. Do you feel that there's 194
more than one decision that you have 195
to make here? 196

EP1: Oh, there's a hundred decisions 198
to make here. 199

ELD: Could you talk a little about 201
them? 202

EP1: [laughs]. You want all? You 204
want more than 99? 205

ELD: As many as you can. 207

#-DEFINE
EP1: OK. Anybody in the airplane 209 -#
with me? If there's anybody in the 210 -#

$-PLAN
airplane with me I'm obviously going 211 -$
to, not obviously but I'm going to 212 -
try. Well, I will inform them of what I 213 -

#-ALTERNATIV
believe is happening, that we will do 214 -#
the best that we can to make it to the 215 -
ground all in one piece, that as we 216 -
get closer and closer [to the ground] 217 -
and things are looking that we will 218 -
make it to the airport - great. If we 219 -
don't make it to the airport then 220 -
we'll go through the procedure of 221 -
informing them we're going to be on 222 -

%-SAFETY
the ground. Before getting on the 223 -# -%
ground I want to be sure that they 224 -
have their seat belts on and tight and 225 -
that we open up the door, just in case 226 -
the frame crinkles or something and 227 -
the door now gets stuck and we can't 228 -
get it open. Ahhh, ensuring that 229 -%
people are just informed of what's 230 -
happening including the control tower. 231 -$  

ELD: Any more decisions? 233

EP1: Any more decisions? I think 235
that ahhh, of course as soon as you 236
turn the tape off, I'll think of one 237
hundred more. 238

ELD: You've given me a lot of good 240
information about what you're going to 241
Appendix G

Expert Pilot Coded Transcripts

Coded Version of EXPLSC2 9/1/01 2:05:53 PM Page 7

Pilot Decision-Making

put in night time and now you're 361 | having problems locating a spot to 362 |
land so, OK, maybe then I would get a 363M |
little more stressful [laughs]. 364 -#

ELD: Could you talk to me about that 366
a little bit more? About if it was at 367
night, let's say. 368

#-EXPERIENCE #-KNOWLEDGE #-CONTEXT
EP1: OK. If it was at night, ahmm, 370 -#-$
what you try to do is to land in a 371 -$-
dark spot. Don't land in lights, 372 |
because lights are usually, ahhh, you 373 |
know, the roads or towns or people or 374 |
somewhere around like that and land in 375 |

$-DEFINISIT
the dark. Now if it's dark, you know, 376 -#-$
are there trees there? Is it dark 377 |
because it's trees or is it dark 378 |
because it's just a plowed field. You 379 |
need, would need to know, flying along 380 |
prior to this incident happening, 381 |
where are you? Position awareness, am 382 |

$-CONTEXT
I near a town? Am I ahhh, over the 383 -# |
town. Ahh, where am I? That you said 384 |
here [in the scenario] that I'm 385 -$|
fifteen miles from the nearest 386 |
airport. OK, maybe the nearest 387 |
airport is ahh, far away from town, 388 |
outside of town. So, now dark 'yeah, 389 |
that's going to be ahhh, a field of 390 |
some sort and not necessarily trees.' 391 |

!-KNOWLEDGE !-SAFETY
Maybe, but don't land in lights. 392 !-$

ELD: And you also mentioned that, 394
ahhh, that the time of day would be 395
important. Could you discuss that a 396
little bit? 397

EP1: Well, time of day being dark 399
night - night, day. Ahmm, your 400
visibility and trying to pick out that 401
field. And that's why I said 'land in 402
the dark spot.' 403

ELD: What I have next are four 405
alternatives to this scenario 406

EP1: OK 408

ELD: And what I'd like you to do is 410
to look at them and I'd like you to 411
rank order them with 1 being the 412
scenario you would, or the alternative 413
you would pick first and 4 being the 414
one that you would choose last. 415

EP1: So you want me to go 1,2,3,4 for 417
a,b,c,d. 418

ELD: Uhuh 420

EP1: OK [EP1 reads and reviews the 422
Appendix G

Expert Pilot Coded Transcripts

Coded Version of EXP1SC3  9/1/01 2:15:31 PM  Page 2

ELD: Did you have similar situations 63
that... 64

#-RECOGNITION

EP1: I have certainly had similar 66 - #
situations. I have a situation like 67 |
that as we speak. My wife is going up 68 |
to New York to visit one of our kids 69 |
and grandkids and is taking a car up 70 |
to them to give to them. Ahmm, I am 71 |
suppose to fly up there on Saturday to 72 |

#-WEATHER #-SAFETY

pick her up. The weather forecast 73 | -$-
right now is calling for freezing rain 74 |
and snow on Saturday. Ed, I'm driving 75 | - $ |
up to pick up my wife, I'm not flying. 76 |
It's a seven-hour drive. I am 77 |
driving up, I am not flying up. Can I 78 |
fly in that stuff? Yes. Will I? No. 79 |
End of thing, next question. Sorry 80 |
about that. 81 - #

ELD: Can you talk about the reasons 83
why you would not fly in that stuff or 84
the reasons why you would not fly that 85
airplane. 86

#-KNOWLEDGE #-SAFETY

EP1: OK. The reasons I'm not going 88 - #
to fly in the ice and the snow is my 89 |
airplane is not equipped with the 90 |
proper ahhh, equipment to be able to 91 |
get rid of the ice and snow that could 92 |
build up on it while we're in flight. 93 |
So, that's why I'm not flying in that. 94 |
Ahhh, and I forgot the other part of 95
your...

ELD: In this particular situation, 98
why, specifically would you make the 99
decision or what's your thinking about 100
not flying this airplane? 101

#-LEGAL

EP1: Ahhh, one, the Federal Aviation 103 - $
regulations say that this airplane is 104 |
grounded for this ahhh, flap problem 105 |
and its against the rules and 106 |
regulations and I am not going to put 107 |
myself in the danger of flying this 108 |
airplane in that condition although it 109 |
could be flown, but the regulations 110 |
say 'no' and I am not going to violate 111 |
the regulations just for the sake of 112 |
getting this plane home so that 113 |
somebody can go take the checkride in 114 |
a plane that they can't fly in the 115 |
first place. 116 - $

ELD: Are there any circumstances? 118
You mentioned that the airplane could 119
be flown, or it would be possible to 120
fly. Are there any circumstances that 121
you could see where you would fly that 122
airplane? 123
Appendix G
Expert Pilot Coded Transcripts

Coded Version of EXP1SC3 9/1/01 2:15:31 PM Page 4

hand. To have a mechanic there to look 183
at the plane, to fix the problem. 184

#-ANALYSIS
Ahhh, if he's able to fix the problem 185 |-
-# to raising the flaps so that I could 186 |
not lower the flaps - I don't have a 187 |

#-KNOWLEDGE
problem with that. I can land the 188 |-$
airplane without flaps. You don't 189 |
need flaps, but you can't take off 190 |
with these thirty degrees of flaps. 191 |-$-

ELD: So if there was a mechanic there 192
and the mechanic was able to get the 194
flaps up but he said to you, 'I'm not 195
sure if they'll come down...'

#-ALTERNATIVE
EPI: That's OK. I don't need flaps 198 |-
to land. I'd go. I'd bring the plane 199 |-
back and then send it into the 200 |
maintenance shop at that facility and 201 |
say 'fix the thing.' But as far as 202 |-

#-NOTOPTION
the attendant doing the same thing. 203 |-
The attendant? You mean the guy 204 |
that's out there pumping gas? Phshhh. 205 |
Come on now. It's like the janitor 206 |
coming into your class and saying 207 |
'hey, you need to' - no, thank you. 208 |-
He may be all well intended but ahhhh, 209M
no. It's my decision to make, that 210
the plane is airworthy and it's, the 211
consequence is mine and I cannot 212
relinquish that authority to somebody 213
else.

ELD: And your thought process about 216
that. What you just said - is based 217
primarily on...

#-LEGAL
EPI: On the understanding of the 220 |-
rules and regulations of aviation. 221 |-
That it's my responsibility to fly a 222 |
aircraft that meets the standards as 223 |
when it was manufactured and 'yep, 224
it's suppose to work, it's suppose to 225
work.'

ELD: Now, this scenario, as was the 228
case in the other, has four 229
alternatives.

EPI: OK
230

ELD: And as was the case in the other 234
scenario, I'll have you check over the 235
alternatives and rank order them. 236
[EP1 reads and rank orders 237
alternatives]

#-ALTERNATIVE
EPI: I don't know if 240 |-
you're gonna like this answer the way 241 |
I'm ranking it, but [choice] D is 242 |
Appendix G
Expert Pilot Coded Transcripts

Coded Version of EXP1SC4  9/1/01 2:18:41 PM  Page 2

$-RECOGNITION
plane has not been fueled. She gets 61M -$  
upset about that ummm, and 'oh well,' 62  |
it's one of those things, it happens - 63  |
stuff happens.' And the facility runs 64  |
out of fuel every once in awhile. 65  |
Ahhm, yeah, you can upset a little 66  |
upset but don't get upset at that 67  |
person behind the desk. What did they 68  |
have to do about it? Ahhm, it's not 69  |
their fault. Unfortunately, they just 70  |
happen to be the closest person at 71  |
hand to vent your frustration at. 72  |
Ahhm, try to, try not to do that. I 73  |
don't think that that was a very good 74  |

$-NEGACTIONS
thing for her to do. Ahh, now she 75  "$-  
goes out to the airplane and starts 76  |
the walk around preflight. Ahhh, and 77  |
we stopped it just as she was just, I 78  |
think coming to a conclusion of 'well, 79  |
gee, it only took me two hours to get 80  |
here and I've got at least half tanks 81  |

$-RECOGNITION $-KNOWLEDGE
of fuel and I'm waiting to see the 82  "$-  
rest of the tape to see does she go or 83  |
doesn't she go and I sure hope that 84  |
she waits. 85  "$-

ELD: Tell me why you think she should 87  |
wait. 88  

EPI: Oh my goodness. Ahhm, you want 90  |
all one hundred different reasons or 91  |
do you want a couple of the major... 92  |

ELD: The major... 94  

$-RECOGNITION
EPI: The major one is there's nothing 96M -$  
worse in aviation than the runway 97  |
behind you ahhh, that you left there 98  |
and the fuel that you left on the 99  |

$-KNOWLEDGE $-LESSON
ground. So tanker the airplane [fill 100  "$-  
it with fuel] and now you have that 101  |
warm fuzzy feeling that at least you 102  |
have four or five hours worth of 103  |
flies versus the two and a half that 104  |
you might have. Ahhm, definitely fill 105  |

$-DEFINESIT
up on the fuel. It may have taken you 106  "$-  
two hours to get here because you had 107  |
favorable tail winds, but now you're 108  |
going to be fighting the head winds, 109  |
and it may take you three hours and 110  |
ahhm, you don't have three hours worth 111  |
of time in the airplane. Did you ask 112  "$  
another question?

ELD: Just thinking about her, you 115  |
mentioned her attitude towards the 116  |
other people. 117  

EPI: Uuhh. 119
Appendix G

Expert Pilot Coded Transcripts

Coded Version of EXP1SC4  9/1/01 2:18:41 PM  Page 3

ELD: Could you -

#-STRESS
EPI: Was she creating some more stress for herself that she doesn't really need? As I said earlier, flying is stressful. You need to be able to handle that stress. You don't need additional stress that, that personal stress of that she's gotten herself into.

ELD: As you looked at that scenario unfold, what part of her decision-making process seemed to involve the element of time or time pressures?

#-TIME
EPI: Time pressures. Well, I don't know why she was pressed for time. Ummm, back at the steps [following a business meeting at the start of the video], she said she would get back to the gentleman in a couple of days regarding their meeting and so it's not like she has to get back to the office this instant and find answers to questions. She has a couple of days to do that. So I don't see pressures there of time. Ahhh, I don't really understand what her big problem is of waiting a half an hour when they will have fuel to put in her plane. Sit down and relieve herself of the stress that she is causing herself by being mad at the person who has no control that she should be mad at in the first place, if any, all of that makes sense. Ahmm, OK.

ELD: You mentioned stress a couple of times. Could you elaborate a little bit more about the stress that this pilot is causing herself by doing what she is doing. And how that could perhaps be alleviated?

EPI: Can I give a personal situation?

ELD: Certainly.

#-EXPERIENCE
EPI: OK. Back in a number of years ago flying with the Boy Scouts on one of our neat sessions that we had - flying to San Antonio for a fly-in that the Air Force was putting on for us. We had ahh, planned this trip for six months, eight months, something like that and ummm, there was five airplanes going on this trip. Ummm, we landed at a place for remember, a quick lunch. Well, when I came back to the plane to get moving again,
Coded Version of EXP1SC4  9/1/01 2:18:44 PM  Page 8

that's like one of them, almost like 429
that. The situation was ahhh, we were 430
leaving from here [Montgomery County 431
Airpark] going down to Sanford Florida 432
in a Navajo, twin engine [general 433
aviation aircraft]. We hold 189 434
gallons of fuel in that airplane. I 435
did the paper work calculation that we 436
should have been able to make our 437
destination and still have ahhh, an 438
hours worth of fuel left. I monitored 439
the fuel gauges and realized that we 440
were having head winds and that it was 441
slowing us down about forty-five 442
minutes longer than anticipated. When 443
we crossed over Savannah, going into 444
Sanford, Florida ahhm, ATC or Approach 445
Control sent us out over the ocean. 446
Which is a straight line down to 447
Daytona to the Daytona area and then 448
to Sanford. And so I accepted that 449
and now I am like forty miles out in 450
the ocean and I'm seeing that I'm 451
sucking up fuel quicker than I should 452
have and I'm passing all those 453
airports to my right that are on dry 454
land and I'm forty miles out in the 455
ocean. Well, I'm here to say that we 456M
made it, but I put 179 gallons of fuel 457
in the airplane when we landed at 458
Sanford. And as I said it holds 189 459
[gallons of fuel]. So I had ten 460
gallons, that's five gallons a side 461
for those two engines which would 462
probably be at the most, ten minutes 463
of air time. From that time on, after 464
paying for that fuel, I decided on our 465
next trip to Savannah and onto Sanford 466
that I had to go to the bathroom in 467
Savannah. I don't care if I had to or 468
not, I had to. And that's the way I 469
flew for that company from that point 470
on. That I just had to go to the 471
bathroom. So, and we got fuel. It's 472M
stupid, but we all make stupid, dumb 473
mistakes every once in awhile and 474
fortunately I'm here to talk about it. 475
And I'll tell anybody that story and 476
tell them that the decision is no 477
matter how many hours of fuel that is 478
in the tank, bladder, that my personal 479
bladder will not allow me to go that 480
far.

ELD: That's pretty good EP1 [laughs]. 483

EP1: OK. Absolutely. 485

ELD: So, listening to that experience 487
of yours. It seems as though that 488
evidence has gone into your 489
decision-making... 490

#-EXPERIENCE #-RECOGNITION #-PRACTICE

EP1: Absolutely, absolutely, that's 492M -#
my decision-making. Ahhh, as I said, 493
Appendix G
Expert Pilot Coded Transcripts

Coded Version of EXP2SC1 9/1/01 2:22:15 PM Page 6

not even gonna try it. 307
ELD: How would stress, you mentioned 309
the anxiety level going up if you 310
tried to land on 35. Would you talk a 311
little bit about how stress might 312
effect your decision-making if you 313
were to try to land on 35? 314

$-STRESS
EP2: Well, if I tried once and had to 316
go around, then I'd be really stressed 317
out thinking 'man, I got to get it 318
down this time or die.' And I'm gonna 319
do things that I, I probably wouldn't 320

$-EXPERIENCE
do if I was thinking clearer. Ahmm, I 321
had a scenario like this that I was 322
suppose to pick somebody up at Bay 323
Bridge Airport [small airport with a 324
short and narrow runway]. And the 325
night before I told him that there was 326
gonna be gusty winds and I don't think 327
I'm gonna be able to get in there in 328
the Pilatus. And, he said 'Well, I'd 329
like you to try.' I said 'All right, 330
I'll try.' So the alternate [airport] 331
is BWI and he lives on this side of 332
the Bay Bridge anyway so it's like 333
thirty minutes to BWI and ten minutes 334
to Bay Bridge. I got over to Bay 335
Bridge and I entered the [traffic] 336
pattern and the winds were right 337
across the runway. I just turned 338
final and stayed at altitude and 339
couldn't even keep centerline [of the 340
runway] in the clean configuration 341
[without flaps and landing gear 342

$-SAFETY $-CONCERNS $-PRACTICE
extended]. And, ahmm, didn't even 343M
try it because had I tried it, went 344
down low and did all the motions, 345
lowering the gear and putting flaps 346

$-STRESS
in, then my anxiety and stress factor 347
would have went up and I may have 348
screwed up a landing. On a runway 349
over BWI right, with the wind right 350

$-STRESS
down the runway. So why add that 351
stress factor and, and start sweating 352
and, and stuff and get all shook up 353
over something that I don't think is, 354
is a good thing to do. So, I'll, 355
I'll, I don't do it. 356

ELD: Ahmm, when you... 358

EP2: Happened to be the vice-president 360
of our company and I called him on the 361
radio and said I'm gonna meet you at 362
BWI. Ahmm, you know, you can take 363
your time driving there, but I'm gonna 364
meet you at BWI. 365

ELD: In that, in that ahhh example you 367
Expert Pilot Coded Transcripts

"you didn't even try' and I said 'we can't get in.'

ELD: Now, when you say 'below your minimums or your personal minimums?'

EP2: No, these are my personal minimums and I can elaborate on them if you like.

ELD: Yeah

EP2: They, they, people you know, instructing, you fly with a lot of people and they say 'Well, what are your minimums you need to go, to go IFR with me [flying in the clouds]?'

elizabeth: well, that's not carved in stone, I said. 'I need to know more'

about the weather.' Why is there a low overcast if it is IFR. What's causing it? is what's the forecast? is it gonna get higher or lower? Ahmm,

what about the airplane? How long -

how much time do I recently do I have in the airplane? How well do I know that everything works in the airplane?

It's the first time in the airplane, I've never flown it before, I want 5000' [ceiling - lowest layer of clouds] or, or better and then I'll go IFR with you. And they say 'Well, we're not gonna get in the clouds.' I said well 'that's the point, I'm not gonna go in the clouds in that'

airplane. But if it's like the Pilatus that I fly weekly, two or three times a week, and I know all the automated systems work if it really gets low and I need some help, then it may be a little lower. Ahmm, you

know, and it, it depends on how recent I've been ahhh, IMC in the airplane a lot but not doing actual approaches, hands on, just autopilot and VFR approaches, then it may be like a thousand and something [lowest level of clouds is 1000' above ground]. But if I've been flying every day in hard IFR and rain and stuff, you know, 500 and a half [lowest layer of clouds is 500' above ground level and visibility is 4 mile] would be OK, too. So these minimums, I mean, I don't have minimums carved in stone. There's so many variables that affect that. I can't say that 2,000 and five are my absolute minimums because it may be higher or it may be lower.
Appendix G
Expert Pilot Coded Transcripts

Coded Version of EXP2SC1  9/1/01  2:22:16 PM  Page 9

ELD: In this scenario, what additional 491
information would you ahhh, like to 492
have that's not presented in this 493
scenario? 494

#-MOREINFO
EP2: I'd like to know why they won't 496 -#
let me land on 28. I'd like to know 497
more about the other airport. And, I'd 498

$-RECOGNITION $-DEFINISIT
like to know why I was going to that 499 |-$ 500
Regional Airport ahhh, in the first 501
place. I mean was it just for a cup 502
of coffee or do I really need to stop 503
there. Ahhm, or am I low on gas or 504
you know, is there weather moving in 505
that I've got to get it down there or 506
something. Ahhm, just to land and you 507
know, get a cup of coffee and turn 508
around and come back and just put some 509
time on the airplane. I don't need to 510
go there. 511

ELD: You mentioned that you would want 512
to know about the other airport. What 513
would you want to know about that 514
airport? 515

EP2: Runway headings. 517

ELD: Why would you want to know that? 519

EP2: Because the wind is a problem and 521
the winds are influencing me, and 522
ahhh, building up some anxiety in me, 523
so I want something with favorable 524
winds and - to make it easy for me. 525

ELD: As was the case with the other 527
scenarios, there's some things here 528
you're certain of and some things 529
you're uncertain of. Aaaahh, looking at 530
the things you're certain of and the 531
things you're uncertain of. Aahh, how 532
would these factors affect your 533
thought - thinking about this 534
situation? 535

EP2: Well, the things that I'm certain 537
of is that I want to land with more 538
favorable wind conditions and I want 539

#-MOREINFO
to use 28. The uncertainty here is 540 -#
why won't they let me use 28? I need 541
to know more about, I mean if it's 542
just a truck on the runway, move the 543
truck and let me land. Aahh, you 544 -#
know, another certainty is I'm not 545
gonna be afraid to declare an 546
emergency and tell them that we need to 547
land on 28. And, I did that once 548
coming back from New York. I was at 549
17 something, 18, 16, [referring to 550
thousands of feet] I was at the low 551
altitude routes on the PC12 [referring to 552
to an aeronautical chart]. We were 553
Appendix G
Expert Pilot Coded Transcripts

Coded Version of EXP2SC2 9/1/01 2:27:19 PM  Page 1

EP2SC2  April 2, 2001

ELD: I'll give you the first scenario
and have you read this over and then
we'll discuss it.  

EP2:  OK [EP2 reads scenario 1].
All right.  

ELD: As you, as you look at this
scenario, ahhh, tell me a little bit
about your thought process as far as
what you're thinking about doing.

#-PRIORITY

EP2: Well, my first thought is to look
outside for a field and see what I'm
over. And my initial thought are to
set up and land at a field while I
still have power. Ahhh, the engine

#-PLAN #-RECOGNITION #-PRACTICE

losing RPM, practically, I don't know
how it has gotten in this scenario
but ahhh my first intention is to pick
a field below me and set up for a
normal landing while I still have
power and do a precautionary landing
in a field.  

ELD: OK. Let's assume that you have
some power. You've done that, you've
picked a field. What other things
would you be thinking about in
addition to that field?

#-MOREINFO

EP1: Oh, wind direction, ahhh,
terrain - probably the last thing on
my list would be ahhh, get on the
radio and let somebody know what I'm

#-ASKFORASST

doing. If there was a control tower
fifteen miles from me, call him and he
can notify emergency. He would
probably be more familiar with local
terrain so if I say I am fifteen miles
northwest, he can alert the fire
department and stuff to say, well, you
know, 'the guy is about over, you
know, ahhh, Smithsburg or something,
you know, he's, he's landing.' Rather
than call 121.5 [emergency radio
frequency] because you don't know who
you're getting. They may not be
familiar but somebody fifteen miles

#-KNOWLEDGE

from this control tower - he's
probably familiar with the terrain
you're gonna land on.  

ELD: And you mentioned that the last
thing you'd probably do is to call
someone on the radio. Why is that?

#-PRIORITY

EP1: They're not much help to me at
Appendix G
Expert Pilot Coded Transcripts

Coded Version of EXP2SC2  9/1/01 2:27:20 PM  Page 2

the current, ahhm situation. I mean I need to fly the airplane first. Now I just want to notify them that I'm potentially going down somewhere and it's an off-airport landing. 65M -#

ELD: How would you say that your, how would you say that your experience factors into your thought process here? 67 68 69 70

#-RECOGNITION #-DEFINESIT

EPI: I've had this ahhm, same scenario once and I pretty much did the same thing that I did there. It was losing power and smoke in the cockpit. And ahhm, I actually set up for a field below me [to land] and,

$-EXPERIENCE

and on final I shut the engine down and landed so, pretty much what I told you I'd do. I've been there and done that. [chuckles]. 78 79 80 81 -$-$

ELD: Could you tell me a little bit more about that, that whole process. 83 84 85 86 87

When, how much experience did you have at that time and, and what were you thinking about at that time when it actually happened? 88

#-EXPERIENCE

EPI: I probably had maybe 2,000 hours [of flying time] ahhm, between two and three thousand hours. Most of it as, as a flight instructor at that time. And it was a training flight. And we had been flying for over an hour. Left our home base and we're up in Pennsylvania and we're just did a low approach and we're on a missed [approach for landing] from an instrument approach, and the airplane had a problem with ahhm, some fuel leaks and oil leaks and they thought that they had fixed them. And ahhm, some oil started leaking and caught fire on the engine. And as, as soon as it happened, it was I just looked right below the window and said 'my airplane' [to the student pilot] and grabbed it and set up for the field. I think I may have shut the, shut the engine off earlier than final [approach]. I really don't remember. Ahhh, it was a 152 [Cessna model] and, you know, we opened it [doors of the airplane]. I, with one, with both hands I just, you know, reached over and popped both doors open and got the windows open and smoke evacuated. Well, we were IFR [limited visibility] in the cockpit. Yeah, oil burns, black smoke, thick, that's what it was in the cockpit. And, ahhm, so, you know, I probably shut the engine off a
Appendix G

Expert Pilot Coded Transcripts

Coded Version of EXP2SC2 9/1/01 2:27:20 PM Page 3

little earlier than final, but we landed and by the time we landed, the prop had stopped and everything so it was a complete 'dead stick' landing

[landing with no power]. But it was in a field and it was no sense trying to go anywhere else because we were losing power and we had just left. Ahmm, I think it was Harrisburg so I just, I was probably within ten miles of an airport with a tower. Didn't even have time to talk to them because I was still, I don't know maybe fifteen hundred feet above ground level at that time, but I didn't even notify them. I had to call on a telephone ummm, and it was funny, I, we had landed in a field and we were behind a shopping center. And it was early in the morning so the only thing that was open was a restaurant. Well, we walked around the front and ahmm, you know, I walked in and I said 'you're insane, could you tell me what town we're in, you know, where we're at.' And they looked at me like 'you're crazy.' I said 'well, we just landed a plane in your back yard there and we need to make some phone calls.' Here and let people know where we are.' So, that part of it was kind of comical.

ELD: Oh, my God.

EP2: So the last thing I did, I didn't even think to talk on the radio and that's why I, I hadn't mentioned that. I just handled what I had and worked with the resources that I had was, you know, literally, it was one puff of smoke just come up in the cockpit and then it, it wasn't a little bit trailing up it was like peuhhhhh and ahmm one of the lines or something broke, it was right on the exhaust and it started burning so and we had the heat on it come right into the firewall and so I figured it was like, when it happened I just looked down and said 'I got it.' There's a field and we're going down.' And that's what I did.

ELD: Could you talk to me a little bit about the stress levels in that situation that you had and how that may have, may or may not have affected your decision-making.

EP2: Ahmm, I wasn't stressed at the time. I was too busy handling the

ELD: Could you talk to me a little bit about the stress levels in that situation that you had and how that may have, may or may not have affected your decision-making.

EP2: Ahmm, I wasn't stressed at the time. I was too busy handling the
Expert Pilot Coded Transcripts

Appendix G

Coded Version of EXP2SC2

9/1/01 2:27:21 PM Page 5

for it to quit. But if I'm, if what's 248M -#
below me looks good, then I'm gonna 249 |
stay right there and, and land it 250 |
regardless of how much power. If it's 251 |
losing power, I'm gonna land it. 252 -#

ELD: What additional information 254
would you like to have that you don't 255
have in this scenario? If you're 256
looking at all of the things that are 257
said in that scenario, what, what 258
other factors would you want to know 259
about? 260

#-MOREINFO  *-DEFINESIT

EP2: I'd like to know where exactly 262 -#  -*
we're over. I'd like to know how much RPM has, have I lost. I mean if 263 |
I'm at 2,500 RPM and it goes down to 264 -#
24 [hundred RPM] well, that's not a real problem. It just says that I'm 265 |
gradually ahhh, 'slowly loses RPM, no 266 |

#-MOREINFO

indication of oil or fuel.' Ahmm, so 269 -# |
I'd like to know how much [RPM] that 270 |

$-CONCERNS

I'm losing. The thing that concerns 271 -#-$
me. You know, if it's carburetor 272 |
heat, the engine may backfire. I mean 273 |
you put heat on, it may enrich the 274 |
mixture and it may backfire some, but 275 |
then, ahhh, the ammeter indicates 276 |

ahhh, that there's a problem also so 277 |

it sounds like there could be more 278 -$

#-ANALYSIS

than one problem. Something could 279 -#

have broke in there, ahhh, internally 280 |
in the engine and everything's not 281 |

turning right and the alternator's not 282 |

$-PLAN

ahmm, turning too. That's would kind 283 -$-

of convince me that I'm gonna land 284 -#  -*

#-LESSON

below me. One or two of those 285 -#

problems, individually, with more 286 |
information, I may have tried to go to 287 |

$-DEFINESIT

an airport but with losing RPM and an 288M -$

alternator problem, is, I mean, two 289 |
problems - strike three and we're out. 290 |
So let's get it on the ground. 291 -$-$

ELD: What if the RPM was going down 293
to let's say approximately to 2,000 294
and then it was ahhh, staying right at 295
about 2,000. You were still going 296
down, but you weren't going down at a 297
high rate. Let's say just, maybe a 298
couple hundred feet per minute. 299

#-DEFINESIT

EP2: Well, with just that alone, and 301 -#

not the battery problem ahhh, 302 |
depending on the terrain I may try to 303 |
nurse it to the airport because I can 304 |

$-KNOWLEDGE
### Coded Version of EXP2SC2 9/1/01 2:27:26 PM Page 7

made your decision to land you would 366
ahhh, probably stick with that 367
decision. Could you explain why you 368
would do that again? 369

EP2: Well, because it was a good, good 371

--- PRIORITY ---
decision. It may have been a little 372 -#
conservative, but I'd rather be 373 |
conservative and decide to land in a 374 |
nice field below me rather than 375 -#
continue or have somebody say 'Well, 376

--- RECOGNITION ---
hey, how much power you developing, I 377 -#
hear this on the radio, you hear 378 |
unicom operators [provides airport 379 |
information - has no ATC authority or 380 |
responsibility] trying to be you know, 381 |
aha, shoot Gun or something and say 382 |
'Well, you know, why I had that happen 383 |
when I was, you know, way back when, 384 |
and you can just nurse it and you can, 385 |
you know.' I made a decision to land 386 -#
and I don't, I don't need it in my 387

--- RECOGNITION --- PRACTICE
flying now. I fly for a corporation 388 -#
and I don't let any of them tell me 389 |
that we're gonna fly or we're not 390 |
gonna fly. So I don't, I am not gonna 391 |
let other people start making my 392 |
decision. I make a decision alone and 393 -#
I'm gonna stick with it unless, you 394
know, I turn final and there's a brick 395
wall in front of me and I have to do 396
something. 397

ELD: If you, if you flip that paper 399
over, there are four alternatives on 400
thether side there, and what I'd 401
like you to do to rank order those 402
alternatives with one being the 403
alternative you would choose first and 404
four being the one you would choose 405
last. I'll give you a couple of 406
minutes to do that. 407

--- ANALYSIS ---
EP2: OK. [EP2 reads and rank orders 409 -#
alternatives]. These are hard because 410 |
one of them are exactly how I would 411 |

--- ALT#1 ---
do it in the order, but I would rank 412 -#-$
"C, keep the carb heat on and see what 413 |
happens" as probably a first thing 414 |

--- SAFETY ---
because it's like insurance. You know, 415 -# |
it's not going to hurt to have it, but 416 |
it's not, then when I need it. So, I'm 417 -#-$
gonna keep the carburetor heat on and 418
then once I'm sure of the field that I 419

--- PLAN ---
picked - 'A', I'd have to modify 420 -#-$
[choice] 'A' ahmm, somewhat. I, 421 -$
onece I'm sure of making the field, I 422 |
can pull out the mixture and secure 423 |
everything, ahhh, stop the engine and 424 |
Appendix G
Expert Pilot Coded Transcripts

Coded Version of EXP2SC2  9/1/01  2:27:26 PM  Page 8

all that good stuff and declare the emergency if I have time. Ahmm, so it would be [choice] 'C' and then [choice] 'A' and ahmm, I [choice] -#

-ANALYSIS
'D' would have to be next in order. I don't think I would push the carb heat in although if it was running OK with it in you may try 'well, let's put it back in', you know, if it's like, 'if it ain't broke don't fix it.' The carburetor heat breaks it, let's put it back in and see if it does something better. Ahmm, so I would go

-ALT#4
[choice] 'D' next and then ahhh [choice] 'B' would be the last thing because that says diverting to the closest airport. I got a problem and the engine's not running right so I, I've already early on made up my mind to land. That's the order.

ELD: OK. If you could, If you could talk to me a little bit more about your first alternative there. The one you would do first and ahhh why you would do that first rather than any of the others.

EP2: Keep the heat on?

ELD: Uhuh.

-KNOWLEDGE
EP2: Well, the engine, depending if it was ice, the engine may spit and sputter a bit. It may backfire for two reasons: with some water going into it or the initial enriching of

-PRACTICE
the mixture so...with carburetor heat I teach people that sometimes it gets -#

-CONTEXT
worse before it gets better. And this could be an exaggerated case of it getting worse before it gets better. So, leave it on for awhile and see what happens. Ahmm, it may clear itself out, it just may be ahhh, melting water going through the engine or who knows? So, leave it on and see what happens.

ELD: And you said your second choice was to, to...

EP2: Pull out the mixture, stop the engine, check the fuel valve, mag switch settings and declare and emergency.

ELD: OK. Could you talk to me a little bit more about that. About why would you basically shut the airplane down at that point.
Coded Version of EXP2SC2

$ANALYSIS

EP2: Well, you can look at the way 487
this is written a couple of ways. 488

$PLAN

Ahmm, it says stop the engine and then 489
check the fuel valve and mag switch 490
settings. It almost sounds like 491
you're checking to make sure the valve 492

$ALTPLAN

is on. So I think I would check the 493
fuel valve and mag settings first and 494
then if that still wasn’t any good, 495
then I would, once I know I am making 496
the field, secure the engine, secure 497
the aircraft. Meaning shut off the 498
mixture, stop the engine and I could 499
read this as saying when it says 500
'check the fuel valve' to shut it off. 501
Or it could be checking it to make 502
sure it was on. Mag switch settings, 503
I'd turn them off to, to basically, 504
once I checked everything and nothings 505
working, I'm going to secure the 506
electrical system, the fuel system to 507
eliminate possibility of a fire and 508
fuel spills on landing. 509

ELD: And your last choice there again 511
was... 512

$ALT#4

EP2: The last choice is to divert, 514
push the carb heat in, keep the engine 515
running and divert to the closest 516
airport. Well, sure I'd like to keep 517
the engine running, but the engine may 518

$PRACTICE

have other plans. So I, you know, 519
again, I'm not gonna divert to an 520
airport with a sick airplane if it's, 521
if it's that sick. Ahhh, I'm gonna 522
land below me, while I still have a 523
good place to land. 524

ELD: Would you consider going to the 526
airport, if the conditions were a 527
little bit different, and if so, what 528
would cause you to go to that airport, 529
as say your first choice? 530

$DEFINESIT

EP2: If I was higher, or if I had 532
enough power to gain altitude and, 533
depending on my recency of experience 534
in the aircraft and how familiar am I 535
with the aircraft in the glide 536
characteristics. Every airplane is 537
different. You can't put on a piece 538
of paper and say 'this airplane will 539
glide, ahmm, you know, one mile for 540
every thousand feet [decrease in 541
altitude], you can't do that because 542
it's different. Ahhh, if I hadn't 543
been flying a [Cessna] 172 or whatever 544
this type airplane is recently, I've 545
Coded Version of EXP2SC2  9/1/01 2:27:27 PM  Page 12

*-NEGATIONS*
that I'm gonna get it that field. If 667 | -§-
I say well, 'Hey, maybe I can get to 668 |
this airport, but maybe I can't.' 669 |
Then that's not really a good 670 -§ |

*-PRACTICE*
decision. You know, if, if I'm not 671 -§ |
almost certain of the outcome of 672 |
what's gonna happen, by me doing 673 |
something, then it's not a good 674 |
decision. I'm gonna be the master of 675 -§ |
that airplane and command it and have 676 |
it do what I want it to do. Not, even 677 -§
though it's acting up, so I'm gonna 678
take that, and that's the tools I have 679
to work with and I'm gonna say 'OK, 680
this airplane's acting up, I'm still 681
gonna be the master, I'm gonna put 682
this airplane down here, rather than 683
somewhere between here and the airport 684
ahead of me.' 685

ELD: I guess the question here is, 687
where do you draw the line? As to 688
putting that airplane down versus 689
going to the nearest airport? 690

EP2: You mean ahhh, it's the terrain 692
below me? 693

ELD: Right 695

*-CONTEXT*
EP2: Well, if what's below me is, is 697 -§
making the situation look worse where 698 |
there's houses, or I'm over a city or, 699 |
you know, sky scrapers all around 700 |
then, I mean, I've got a bad set of 701 |
tools to work with and I'm gonna have 702 |
to try to get it out of that situation 703 |
the best I can and that's gonna alter 704 |
my decision-making process right 705 |
there. 706 -§

ELD: Well, let's say in this 708
particular scenario that was the case. 709
You were over an urban area or a 710
built-up suburban area. How would 711
that change things? 712

*-PRACTICE*
EP2: I would just look around for the 714 -§
nearest clearing area and head towards 715 |
green open places and ahhh, do the 716 |
best I can to keep the airplane 717 |
running until I can, can get out of 718 |

*-LESSON*
$-DEFINESIT$
there. Unless there's a, you know, a 719 -§-
big road or something, but we're 720 |
gonna assume there's nowhere to land 721 |
and I'm just gonna try to get it away 722 |
from the city and do the best I can. 723 -§

ELD: As you look at this scenario, is 725
there a lesson here for in-flight 726
decision-making as you look at the 727
Appendix G
Expert Pilot Coded Transcripts

Coded Version of EXP2SC3 9/1/01 2:32:35 PM Page 4

airplane on the ground and ahhm, have 179 
somebody come in and fix it. 180 -#-$

ELD: What about the attendant's offer 182 
there to ahh, to work on the 183 
airplane? 184

EP2: No, I wouldn't let nobody, just 186 
some line attendant, work on the 187 
airplane. 188

ELD: Why is that? 190

#-PRIORITY #-PRACTICE
EP2: I'm very particular about who 192 -#
works on my airplane. If I'm gonna 193 
take it up in the air. 194 -#

ELD: What, as you look at, at this 196 
scenario, what are your thinking 197 
priorities here? The most important 198 
thing you want to be thinking about, 199 
the second most important thing you 200 
would want to be thinking about etc. 201

#-SAFETY
EP2: The first thing that I'm always 203 -#
trying to ahhm, keep up front is 204 
safety. You know, is this a safe 205 
situation? Ahhh, so the safest thing 206 
to do is leave it on the ground. Kind 207 -#
of in the middle somewhere would be to 208 
fly the airplane somewhere like it is. 209 
Not have the no line attendant work 210

#-SAFETY $-PLAN
on it. Ahhm, the first thought was 211 -$-
+ safety. Ahhm, the second thing to do is 212 -#
leave it on the ground, see if we can 213 
get somebody to come in and look at 214 
it. Somewhere, up front, to be 215 
courteous to the other pilot whose 216 
getting ready for a flight test in it 217 
[the airplane] is to try to get hold 218 
of them or the examiner. Ahhm, 219 
because that is a big day for somebody 220 
getting their license and ahhm, you 221 
don't want them to be pacing the 222 
carpet back and forth, waiting for 223 
the airplane and you're not gonna be 224 

#-SAFETY
there so --. After the safety issues 225 -#
are considered, I would call them. If 226 
I could get a mechanic to come in and 227 
fix it and, you know, that would 228 
probably be after my safety thoughts 229 -#
and then, once I know what my final 230 
decision is, then I'd notify the 231 
flight school and the applicant. 232 -$

ELD: Would the fact that your friend 234 
is, has a flight test scheduled with 235 
the FAA, would that in any way affect 236 
your decision-making or your thought 237 
process about... 238

EP2: No, I don't let stuff like that 240
Appendix G
Expert Pilot Coded Transcripts

Coded Version of EXP2SC3 9/1/01 2:32:41 PM Page 10

'till the flight school can fly an A&P mechanic in and change the switch. 539 ---

§-SAFETY
That that's the best thing. It, you're on the ground, you're safe, the airplane's safe. Checkrides can be rescheduled. You can't back up an accident. Ahmm, so leave it on the ground. That, that's the best thing. 546 ---

§-ALT§
The worst thing and the last thing to do is probably leave 'em down [the flaps] which is [choice] 'A' leave the flaps down and fly to a nearby airport. 551 ---

ELD: But you said you would do that if ... 553

EP2: Everything was right. 556

ELD: If everything was right 558

EP2: As a last resort just to get it fixed. 560

ELD: Ahmm, if you were to think of a lesson here. A ahhh, pre-flight, go/no-go decision type lesson here, ahhh, for pilots in general, based on this scenario, ahhh, what would that, what would that lesson be? 566

§-LESSON
EP2: Well, I could come back to what we started off with ahhh. A pre-flight or no-go, go/no-go decision is, if there's a problem, we don't take it into the air because it's not gonna get fixed there. It doesn't get any better. It can only get worse. So even the slightest problem - why take it into the air? 570M ---

ELD: Is there anything else you think of in this particular scenario that might be useful for ahhh, other pilots with regard to the go/no-go decision? 577

§-LESSON §-OUTSIDEFA
EP2: Yeah, I stated this earlier that ahhh, try not to let or don't let other people outside of you, don't let anybody else influence your decision to takeoff because you know, a newly rated pilot or somebody with relatively low experience may be pressured in if they call the flight in and got this private pilot he said 'Look man, I gotta have that airplane back. I got a check ride this afternoon and this examiner is tough and, you know, she'll chew me out if I cancel at the last minute, get that airplane back here.' Ahmm, somebody 586M ---
Appendix G
Expert Pilot Coded Transcripts

Coded Version of EXP2SC3  9/1/01 2:32:41 PM  Page 11

may be influenced by that or their arm  601
twisted to say 'OK, I'll get it back  602
for you, I'll get it back. I'll  603
takeoff and, and I'll be back in a  604
couple of hours.' Ahmm, so don't let  605
anybody outside of yourself, make your  606
decisions for you because you're the  607
one that has to deal with it. You're  608
the one who that has to live or die  609
with it once you take it off.  610 -#

ELD: Thanks.  612
Coded Version of EXP2SC4  9/1/01 2:36:30 PM   Page 4

EP2: More than one decision...ahmm  178
ELD: Or more than one thing that she  180
should have been considering here?  181

#-WEATHER
EP2: Well, she should have been  183 -#
considering the weather and she the  184 |
weather and the forecast...I mean the  185 |
weather, the current weather and the  187 |
forecast and she should have also  188M -#

pre-flighted herself. It was pretty  189 -#
 obvious that she had been in a  190 |
 meeting. We don't know how long, but  191 |
 she was at a meeting. And it could  192 |
 have been a long day. Is she really  193 |
 fit to do this flight too. Ahhh, she  194 |
 may not have been fit to do that  195 |
 flight. So, you know, sometimes the  196 |
 weather's fine and everything is going  197 |
 in your favor, but it's been a long  198 |
 day and you're just too exhausted.  199 -#
 And you just got to tell them that, or  200 |
tell yourself that this is not a good  201 |

#-EXPERIENCE
thing I shouldn't be flying. I had the  202 -#
 boss's wife wanted me to fly her to  203 |
 Key West and drop her off and come  204 |
 back in the same day. And it's  205 |
 six hours non-stop in the Pilatus and  206 |
 ahmm, I said, 'well, I can't do that  207 |
 by myself,' I said, 'if I could find a  208 |

$-WEATHER
co-pilot and the weather's good, I'll  209 -$|
 do it.' She said, 'But the  210 -$|
 airplane will make it non-stop. We do  211 |
 it all the time.' I said, 'Yeah, but  212 |
 that's, her husband is also a pilot,  213 |
 and he'll sit up front with me, and if  214 |
 I have to use the bathroom or eat or  215 |
 something, you can get up and there's  216 |
 somebody else up there. I said,  217M |

$-DEFINIT
'That's a six hour flight.' I said,  218 -$
I'm gonna have to limit myself on my  219 |
 drinking my fluids because I can't  220 |
 get up and use the restroom and then,  221 -$

$-TIME
I'm gonna get down there and it's at  222M -$
 least an hour and a half on the  223 |
 ground, unload your stuff and to get  224 |
 fuel and file a flight plan and get a  225 |
 briefing and get back in the air, it's  226 |
 gonna be a fourteen hour day before I  227 |
 know it. I'm gonna be getting back  228 |
 late at night ahmm.' I said, 'I can't  229 -$

$-WEATHER
do that flight.' And it so happened  230 -$
 that the weather was too bad, that I  231 |
 mean it was a big factor, too. There  232 |
 was a big line of thunderstorms across  233 -$
 Florida -- but I said, 'I'm not gonna,'  234 |

$-DEFINIT
I said, 'I'll be fit to go down there,  235 -$
Appendix G
Expert Pilot Coded Transcripts

Coded Version of EXP2SC4 9/1/01 2:36:31 PM Page 5

but I'm not gonna be fit to come back, 236

-WEATHER

even if the weather wasn't a factor.' 237

-TIME

I said, 'That's just too long of a day 238

for me.' I said, 'we can't do that.' 239

She said, 'Well, let's just go down 240

there and see how you feel and you may 241

feel like flying back.' I said, 'No,' 242M

I'm not going to accept this flight 243

with the intent on flying back 244

tonight.' We leave here at eight in 245

the morning, eight, nine, ten, eleven, 246
	twelve, one, two. It would be two 247

o'clock when we get down there. Give 248
me two hours on the ground, it will be 249
four [o'clock]. Ahhh, it will be ten, 250

eleven o'clock by the time we get back 251
up here. I said, 'And I have to get 252
up at five thirty in order to get 253
there and get the airplane ready for 254
you.' I said, 'That's too long of a 255

day.' So, I was pre-flighting myself 256M

the day before the, the flight started 257

and said that I'm not gonna be fit, 258

-PRACTICE

I'm gonna ground myself when I get 259

there if we go. So, that's something 260

she could have, should have 261

considered I think. You know, we 262

don't know how long that meeting was. 263

-DEFINITES

Did she fly, did she have to get up at 264

the crack of dawn to fly there to that 265

meeting and, I mean we know in 266

business travel you probably do. You 267

know, four or five o'clock in the 268

morning is nothing for a pilot to get 269

up to do a trip at six or seven. Did 270

she do that? And then did she work in 271

a meeting all day with a presentation? 272

-WEATHER

Now she's got to fly home, ahhh, 273

towards the evening with deteriorating 274

weather. And that, she wasn't fit to 275

do that flight and ahhh, just from 276

what I gathered there, I'm assuming 277

some things, but I'm assuming that she 278

wasn't fit to do it. 279

ELD: I was going to ask you about 281

that. Ahhh, what other factors would 282

you want to know about the pilot in 283

this scenario? 284

-MOREINFO -DEFINITES

EP2: I'd like to know her recency of 286

experience. You know, she may be 287

current for the regs, but is she 288

proficient? Is she comfortable flying 289

IFR? Aahhh, you know some pilots will 290

do it with an instructor but they 291

don't like to do it on their own 292

[flying in the clouds - IFR]. How up 293

in there, when's the last time she's 294
Appendix G

Expert Pilot Coded Transcripts

Coded Version of EXP2SC4  9/1/01 2:36:33 PM  Page 6

been in IMC by herself? You know, had 295 | |
done all this work by herself? What 296 | |
time did she get up that morning? How 297 | |
long had she been up prior to taking 298 | |%
cue? They're all factors to consider 299 | |
in this decision to go or not to go. 300 -#

ELD: It seemed like, and you had 302
mentioned this before, that ahh, both 303
time and stress seemed to play into 304
this ahhh go/no-go decision. Could 305
you talk a little bit about the 306
effects of time and stress on this 307
pilot and how it affects her or 308
appears to affect her thought process. 309

#-TIME

EP2: Well, talk about the time first. 311 -#
She is obviously on some kind of a 312 | |
time restraint, maybe to get the 313 | |
airplane back or to get ready for the 314 | |

$-STRESS

next day's work or something. And 315 |-$
that, alone, is adding some stress to 316 | |

%RECOGNIZE

her routine prior to takeoff. Most of 317 |-$-%
the time you go to an FBO [fixed base 318 | |
operator - among other things, sells 319 | |
fuel] and you say 'well, I need fuel.' 320 | |
[they say] It will be thirty minutes. 321 | |
You say 'great, I can go to the 322 | |
bathroom and, and take my time 323 | |

$-NEGOTIATE

pre-flighting.' She is the opposite. 324 |-$-%
She wants to get the fuel and, and 325 | |
'thirty minutes - I can't wait thirty 326 -#
minutes.' And now I've got to 327 | |
recalculate the fuel and see well 328 | |
maybe I can stretch it I'll lean it 329 | |
way out [the fuel] or something. 330 -$

#-TIME  $-STRESS

Ahhm, so the time restraint that she's 331M -#
put on herself is stressing herself 332 | |
out too. And she's doing this to 333 | |
herself. Nobody else is doing that. 334 -#
ELD: When you look at what she had 335
done prior to making this decision, 336
what additional information should she 337
have obtained? Or what additional 338
information should any pilot obtain 339
before making that go/no-go decision? 340

#-MOREINFO

EP2: Well, again we can come back to 342 -#
ahh her fitness, you know, her 343 | |
alertness ahh how long has it been 344 | |
since she's been up? How long of a 345 | |
day is it gonna be when she - and the 346 | |
takeoff is not as demanding, most 347
part, for the most part, as the 348 | |

$-ANALYSIS

landing. I'm not saying that you brush 349 |-$-$
the takeoff and anybody can do it, but 350 | |

%CONCERNS

it's more demanding at the end because 351 |-%
now you've flown. The noise and the 352 | |
Appendix G

Expert Pilot Coded Transcripts

Coded Version of EXP3SC1 9/1/01 2:40:48 PM Page 3

5,100’-- is that correct? 'the tower is vectoring traffic' [EP3 reads 119 | -§

$-ANALYSIS
scenario 1]. Yeah, 5,100’ which is a 121 | -§
long runway. So I'd increase speed 122 | |
-- a small increase in speed wouldn't 123 | |
be that detrimental. 124 | -§-

ELD: As you look at this scenario, 126
what's the most important thing you 127
need to be considering? 128

EP3: For me personally? 130

ELD: Uuhh. 132

#-MOREINFO $-PRIORITY
EP3: Ahhh, well, all these scenarios 134 | -§-
one thing I would keep in the back 135 |
of my mind, do I have enough fuel to 136 |
%
\-DEFINESIT
make all these decisions. If I don't 137 | -§-
have enough fuel, then it turns into a 138 |
total different scenario. 139 | -§-

ELD: Tell me how fuel would affect 141
your thought process here. 142

EP3: Well, if fuel were a 144
consideration, ahhh, I would tell the 145
tower I'm, I'm declaring 'min fuel' 146
and I'm landing on runway 28. 147

ELD: What would you tell the tower? 149

EP3: 'Min fuel' - minimum fuel 151

ELD: Which is? 153

EP3: Not declaring an emergency but 155
telling them that you know. You have 156
to get on the ground quickly or you're 157
going to run out of gas. 158

ELD: And if they said that '35 was 160
the active?' 161

$-PLAN $-ANALYSIS
EP3: Then I would use 35 no matter 163 |
what because it is better to land in a 164 |
heavy, heavier cross-wind at a higher 165 |
speed than go look for another airport 166 |
on low fuel or the potential of 167 |
running out of gas. 168 |

ELD: Ahhh, fuel, you mentioned, was 170
your first, ahhh... 171

#-PRIORITY #-MOREINFO
EP3: Well, I'd be keeping it in the 173 |
back of my mind, but I'd also be 174 |
%
\-DEFINESIT
considering what's going on at the 175 | -§-
$-WEATHER
airport: change in the wind direction, 176 | -§ |
increase or decrease in the wind 177 | -§ |
Appendix G
Expert Pilot Coded Transcripts

Coded Version of EXP3SC1  9/1/01 2:40:49 PM  Page 5

EP3: No. 239

ELD: Tell me why that would not be a 241
factor. 242

$-EXPERIENCE
EP3: Ahhm, just because in everyday, 244 $#
my everyday job this, things like this 245 |

$-RECOGNITION
occur. And maybe not this specific 246 |
thing, but other things that are 247 |
similar to it and it's something that 248 |
you have to contend with. And, I 249 |
guess, you know, I've been flying for 250 |
twenty years - I've dealt with this 251 |
before, things similar, and it's 252 |

$-STRESS
always turned out OK. So, ahhm, I 253 $#-

ELD: You mentioned that there were 261
do, ahhm, I 253 $#-

$-CONTEXT $-EXPERIENCE

thing, personally, there's 254 |
nothing wrong with the airplane. It's 255 |
running OK, so, that relieves any kind 256 |
of potential stress and, you know, for 257 |
me personally, no, I wouldn't have any 258 |
stress over this. 259 $-

ELD: You mentioned that there were 261
generated. Did you talk a 262
things similar to this that you've 262
little bit about those? 264

$-PRIORITY
they've closed down all arrival 269 |

$-MOREINFO $-PRACTICE
the airline industry, ahhm, flying to 266 $#-

ELD: How much of that decision-making 290
the airline industry, ahhm, flying to 266 $#-

$-TIME
your destination airport and realizing 268 |

ELD: How much of that decision-making 290
you're gonna do 271 |

$-ALTPLAN
they've closed down all arrival 269 |

ELD: How much of that decision-making 290
time and realize, is how 271 |

$-ALTPLAN
alternate. So, ahhm, you have two 279 $#-

ELD: How much of that decision-making 290
diff, two people working, two or 280 |

$-ALTPLAN
three people working on this and it's 281 |

ELD: How much of that decision-making 290
all got to happen within a few 282 $-

$-ALTPLAN
minutes. So, ahhm, you know, it's 283 $#-

ELD: How much of that decision-making 290
something that might be a little 284 |

$-ALTPLAN
[unintelligible] of us. You have a, 285M $#-

ELD: How much of that decision-making 290
you have a 'Plan A' which now, 'Plan 286 |

$-ALTPLAN
A,' the door is closed. Now you have 287 |

ELD: How much of that decision-making 290
to go to 'Plan B.' 288 $#-$

$-MOREINFO $-EXPERIENCE
EP3: It's an equal amount between the 294 $-
$-ALTPLAN
Appendix G
Expert Pilot Coded Transcripts

Coded Version of EXP3SC2 9/1/01 2:44:26 PM Page 1

EXP3SC2 April 20, 2001

ELD: OK. The next scenario is scenario number two and you're on a cross-country flight. You're flying a Cessna 172. You're in route and there's a problem. So I'll let you read over the scenario and then we'll discuss it. [EP3 reads scenario 2].

OK, well, if you look at his scenario, ahh, talk to me a little bit about your thought process with regard to ahh, your decision making in regard to this scenario.

#-WEATHER #-CONTEXT

EP3: OK. Well the first thing we're at 4,500' VFR, which is Visual flight rules, on top of haze. Now haze, you know, it's still visual flight rules and you add haze to that it's still difficult to see. You can make out things on the ground, you can see them, however, you almost have to be right on top of them. Ahhh, first, the, the engine slowly starts to losing RPM. Or fuel, oil, after pulling the carburetor ice, carburetor

#-PLAN

heat, ahh, the engine backfires. At that point I would look below where I was at the time and see if there was a suitable place to land. Ahhh, being, being another runway, ahh at that point I would just look for another run -- airstrip. I wouldn't necessarily consider landing at a field, on a field or a highway yet

!-DEFINESIT $-PLAN

cause the engine is still running. So, ahh, if I did see a runway below me or very close to me I would opt for

%-ALTPLAN

that, to ahh land. Ahhh, however, if there was not anything, I would ahh, meaning there is no runway below me,

%-CONTEXT

or close by. Ahhh, it's fifteen miles from the nearest airport with a control tower. I would continue pressing on to that airport, even

#-DEFINESIT

though I was losing RPM, the engine is still running -- means it producing power. Ahhh, and I have ahh, pretty good altitude, 4,500'. I would press

#-PLAN

on to there. Ahhh, with the alternator problem, with the electrical problem let's see we have, assuming we have a bad alternator, I would go ahead and turn off non-essential equipment - lights, the second radio, ADF automatic direction finder]things of that sort, CD player,
Coded Version of EXP3SC2 9/1/01 2:44:27 PM Page 2

whatever you have, [unintelligible] 59 $
up. And ahhh, just use one radio for 60 $
communication and navigation at 61 $
that point call the tower and advise 62 $
them ahhh, 'I have a rough engine, 63 $
running engine and I'm inbound' from 64 $
point A to wherever there airport is 65 $

§-ANALYSIS §-DEFINESIT
and ahhh, not necessary to declare an 66 $-$
emergency at that point. But might be 67 $
consider it if it gets 68 $

worse. Actually would declare an 69 $
emergency if it gets worse. And the 70 $-$
reason for that is it says here 71 $
[referring to the scenario]. 'You're 72 $
in an area of heavy traffic' ahhh, 73 $-$
well that's the whole idea is to com-
competing for a runway when I have a 74 $
problem — ahhh, competing for a 76 $

#-PRACTICE
runway. When there's heavy traffic, I 77 $
want the tower to clear them out of 78 $
the way so I can get on the ground. 79 $

#-PLAN
So option 'A,' look for somewhere 80 $
where you are. [option] 'B' would be 81 $
continue on, turning off non-essential 82 $
power, non-essential electrical items. 83 $

ELD: You say that your first ahhh, 85 $
your most — or your first, most 86 $
important thought process would 87 $
concern landing where you are or 88 $
trying to pick a place to land where 89 $
you are? 90 $

#-KNOWLEDGE #-ALTPLAN
EP3: Yeah, no meaning — if I saw 92 $-$
another runway, close by, meaning 93 $
underneath me I would opt to land 94 $
there because a rough running engine 95 $
at this point, fifteen miles down the 96 $
road could mean an engine not running 97 $-$

§-ALTERNATIV
at all. And I'd rather have some 98 $-$
power and be able to control it to a 99 $
runway right below me than taking the 100 $

#-PLAN
chance of continuing on. However, 101 $-$
again, we have the altitude if the 102 $
engine did quit — seize, you could 103 $

#-ANALYSIS
glide for awhile. Fifteen miles away, 104 $
I don't — depending on the ahhh, what 105 $
airplane is and ahhh, you know, I 106 $
don't know if you could make that or 107 $
not on a glide but with a rough — the 108 $
engine, the thing is their engine is 109 $

§-SAFETY
still running. And it might be enough 110 $-$
power to get you to that fifteen, 111 $
fifteen miles away from the airport 112 $
at that point to land safely at 113 $
another airport. 114 $-$

ELD: You mentioned that, that you 116
Coded Version of EXP3SC2

9/1/01 2:44:27 PM Page 4

clear landing and an immediate landing. 174 175 -#

ELD: And what would be the factors, again that would serve as a basis for whether or not you would declare an emergency? 177 178 179 180

EP3: Engine started getting even rougher to that point. Actually, it [referring to the written scenario] says 'the engine backfires, vibrates and continues to lose RPM gradually' so it's, looking, that's like the trend. So more than likely, if it continued on that trend of getting worse, I'd be declaring an emergency. 182 183 -# 184 185 186 187 188 -# 189 190

ELD: You mentioned that your first priority would be looking for an area to land... 192 193 194

EP3: Uuhh. 196

ELD: ...prior to reaching the airport that you were pressing onto... 198 199

EP3: Right. 201

ELD: ...what are your thoughts about that. What would you be thinking about with regard to looking for an area to land? 203 204 205 206

#MOREINFO  #DEFINESIT

EP3: Ahhh, well if I had to choose a suitable area, I mean, let's assume it's a field. Is it long enough? Had it been plowed, maybe there are ruts in the ground? If there are, landing with the ruts instead of against them. Are there, is there other crops there, corn things of that sort, wires that I might have to avoid, trees I might have to clear? Ahhh, so there, there's a plethora of items you have to consider. 208 -# 209 210 211 212 213 214 215 216 217 218 219 -#

ELD: What about - I'm sorry - 221

EP3: That's it. 223

ELD: OK -- what about your thoughts about pressing on. If you decided to actually continue pressing on to the airport... 225 226 227 228

EP3: Uuhh. 230

ELD: ...what are your thought processes about that? 232 233

#PLAN

EP3: Keeping the engine running long enough to get to that destination 235 -# 236
Appendix G

Expert Pilot Coded Transcripts

Coded Version of EXP3SC2 9/1/01 2:44:29 PM Page 7

EP3: Ahhm, the area you're flying in, is it mountainous or flat? Length of the runways, width of the runways. More than one runway? Two runways? The wind at the runways? The conditions at the airport - weather conditions. Do they have emergency vehicles, emergency equipment at the field, just in case? Do they have a bar? [laughs].

ELD: Of those factors you mentioned, which would you consider to be the most important information that's lacking?

# MOREINFO

EP3: Ahhm, probably the length of the runways and number two, the weather, assume, assuming the weather is similar to this scenario, just hazy. Ahhm, but VFR meaning visual flight rules so I, I'd, I'd want to know the length of the runways. The longer the runway the better.

ELD: You also, also mentioned ahhh, terrain. Tell me about how the terrain would ahhh, affect your thought process here.

# DEFINESIT $ PLAN

EP3: Well, if the airport was in a valley or between mountains, ahhm, you know, I'd want to consider that because I'd want to keep as much altitude as I can for as long as possible. And I'd rather keep that altitude 'till I get over the airport instead of trying a descent prior to the airport. Cause that would give me more air to ground clearance. Ahhh, if it were in the flatlands that, obviously that wouldn't be a

$ ALTPLAN

consideration of terrain. And ahhh, I might maneuver the airplane to one runway whereas if it were mountainous I might maneuver it to another. If I had to, I'd rather, with an engine stopped, and [unintelligible] fly the area I'd pretty much pick the first

# ALTPLAN

runway I came to. But if there were mountains in the way or something like that, I might take another runway. So I don't want to get in the way of a mountain.

ELD: As you look at this scenario, there's a few things here you're certain of and, again there's a few things you're uncertain of. Could you talk a little bit about these
Appendix G
Expert Pilot Coded Transcripts

Coded Version of EXP3SC2

$\text{-ALTPLAN}$
wasn't on long enough, well, give it some time to work, and if it doesn't work, then I'll turn it off. 535 $\text{--}$ 536 $\text{--}$ 537 $\text{--}$

ELD: What about the time factor there regarding the carb heat? 539 540

EP3: Ahmm, maybe a few minutes. 542

$\text{-CONTEXT}$
Considering I haven't flown a small airplane like this in a long time. I, it's been years. I would, ahhh, keep it on for a few minutes and see what happens. If it continually, gradually got worse, then I'd turn it off because it's not doing any good. 543 $\text{--}$ 544 545 $\text{--}$ 546 547 $\text{--}$ 548 $\text{--}$ 549 $\text{--}$

ELD: OK. And your third alternative there? 551 552

EP3: 'Push the carb, carburetor heat in, keep the engine at idle and declare an emergency and ask for advice. ELD: OK. Why would you choose that third? 554 555 556 557 558

EP3: Ahhh, well, I had to choose it, I really wouldn't pick this. 560 561

ELD: Why wouldn't you pick it? 563

$\text{-PLAN}$

$\text{-ANALYSIS}$

EP3: Uhmm, because I might push the carburetor heat in if it's not doing anything, and that part's true, but keep the engine at idle, if it's still running, I'll keep it running as long as I can. Declare an emergency, I might do and ask advice I might do but ahhh, if it's running, the engine's running and the plane's not shaking apart, I'll keep it - keep some power in there. So keep the engine at idle, that part of that statement, I wouldn't do. 565 $\text{--}$ 566 $\text{--}$ 567 $\text{--}$

ELD: So, in other words, you would try to get as much power from the engine as possible? Is that... 570 571 572 573 $\text{--}$ 574 $\text{--}$ 575 $\text{--}$

EP3: Sure. It's keeping the airplane flying - sure. 576 577 $\text{--}$

ELD: And you mentioned you may ask for advice, but who would you ask for advice from? 579 580 581 582 583 584 585 586 587 588

EP3: Well, the only thing, that would be the last thing I would consider, ahhh, because I'm the one in the airplane flying it - deciding what to 589 590 591 592 593 594 595 596 597 598 599 600
Appendix G
Expert Pilot Coded Transcripts

Coded Version of EXP3SC2 9/1/01 2:44:33 PM Page 11

$-KNOWLEDGE

do. And someone on the ground really 594 -$
can't do too much for you then saying 595 $
'traffic is clear for you to land.' 596 -$
Ahmm, you might ask him what winds 597
it's favoring for what runway, that's 598
about it for me. Other than that it's 599
up to me. 600

ELD: And you also mentioned that you 602
might declare an emergency. When 603
would you consider declaring an 604
emergency in this scenario? 605

#-PLAN

EP3: When I got – if the engine 607 -#
gradiually got worse I would declare an 608 

$-KNOWLEDGE

emergency. And ahh, but it wouldn't 609 -$
take long after this scenario to 610 $
figure that out. Maybe a couple of 611 $
minutes. So, definitely before I got 612 -$
to the airport. I'd be declaring an 613 $
emergency and also you want to have 614 $

$-SAFETY

the, if there's any emergency 615 -$
facilities available - you want them 616 $
ready to go, just in case. 617 -#

ELD: And, your last choice would be… 619

#-ALT$4

EP3: Again, this isn't my choice, but 621 -#
I wouldn't 'pull out the mixture, stop 622 
the engine, check the fuel selector 623 
valve, mag switch setting and declare 624 

$-ANALYSIS

and emergency.' Well, I might check 625 -#
the fuel selector valve and check the 626 
 magnets and declare an emergency, 627 -$
but I surely wouldn't pull out the 628 
mixture and stop the engine. ELD: Why 629
is that? 630

#-KNOWLEDGE #-LESSON

EP3: Cause of it's a [laughs] an 632 -#
engine's producing power the last 633 
thing you want to do is to turn it 634 $

%-CONTEXT

off. The only time I'd do that is if 635 -$
I knew I had to put it into a field. 636 
I, I might shut down, shut off the 637 
motor, shut off the fuel before 638 
landing in a field just to prevent, 639 
and again, I haven't flown a small 640 
plane in awhile, preventing any kind 641 
of fire. Cutting down the chance of a 642 

#-KNOWLEDGE #-DEFINES #-LESSON

fire or an explosion. But, ahh, just 643 -$
to do it - I, there's no way I'd do 644 $
that. Why stop a motor if it's 645 
running and you need it. Even if 646 
you're limping along, it still might 647 
get you to the airport fifteen miles 648 
away. 649 -$

Appendix G
 Expert Pilot Coded Transcripts

Coded Version of EXP3SC2  9/1/01 2:44:34 PM  Page 13

particular lesson, decision-making 709
lesson that you think could be learned 710
from this particular scenario? 711

#-LESSON
EP3: Ahmm, [pause] I guess there's 713 -$

ahhh, sure there's a lesson. I mean 714 |
you could, you know, you have to know 715 |

$-ANALYSIS $-KNOWLEDGE $-NEGATIONS
your systems of your airplane. If 716 $-\$$-

someone didn't, for instance, didn't 717 | |
know the electrical system and kept 718 | |
all the radios on and you have a bad 719 | |
alternator you'd be draining all the 720 | |
power from the battery; therefore 721 -$ |
your battery would last even less. 722 -$

So, ahhhh, if you don't know how the 723 |
electrical system works, that could be 724 |
a detriment to you so... You know, 725 |
make sure you know how to use your 726 |
systems and how they work and how they 727 |
can be more, more of use to you. 728 |
Ahhmm, also, you know, your engine - 729 |
ever though it's running poorly, don't 730 |
just shut it off. If it's tolerable 731 |
to keep at least some of the power, 732 |
it's better than nothing. So, 733 |
akhir, don't just automatically shut the 734 |
motor down if it's running rough. 735 -$

ELD: And, is there, ahhhh, do you feel 737 |
that there is one particularly 738 |
relevant lesson here for less 739 |
experienced pilots? 740

#-LESSON
EP3: Yeah, when you're, you know, if 742 -$

they're flying by yourself for, for a 743 |
student pilot and there, there will be 744 |
times when they're flying by 745 |

$-ALTPLAN
themselves, be prepared. Always think 746 -$

that the engine is gonna quit, and if 747 |
you're lucky, you'll make it to your 748 |
destination airport. But if you're 749 -$
jjustflyingfat, dumb and happy and 750 |
you're not even thinking about that, 751 |
when it happens, you won't be 752 |
prepared. So, always keep that, look 753 |
around, find a suitable place to land, 754 |
you know, just practice that stuff 755 |
even though the engine's running. 756 -$

ELD: And, in your experience have you 758 |
had any scenarios similar to this in 759 |
any respects? 760

EP3: Ahmm, yes. 762

ELD: Could you tell me a little bit 764 |
about that. 765

#-EXPERIENCE #-RECOGNITION
EP3: I was flying from Washington 767 -$

National to Montgomery County Airport 768 |
and, ahhhh, took off out of National in 769 |
Coded Version of EXP3SC2  9/1/01 2:44:34 PM  Page 14

Pilot Decision-Making
Appendix G
Expert Pilot Coded Transcripts

ELD: Thanks

a Cessna 172 and the engine started 770
running rough - producing less power; 771
however, it was enough power to make 772
it to my destination so. But, the same 773

%-ALTERNATIV
scenario, you know, 'Where can we land 774
just in case?' Can we land back at 775
National? Can we land at College 776
Park, at Andrew Air Force Base, Fort 777

%-KNOWLEDGE
Meade? Somewhere in between - we kept 778
pressing on because I knew 779

%-DEFINIT
Gaithersburg was close by. The engine 780
was running rough, but it still had 781
enough power to make it to 782
Gaithersburg. 783

ELD: Could you tell me a little bit
more about your decision-making, your
thinking on that particular flight --
when you noticed the engine was running rough and, and what went
through your mind during that process?

%-EXPERIENCE
BP3: Again, I did normal things,
checking the fuel selector, carb heat,
mag switch settings, make sure both
mags are on, and everything was in its proper place. Those were the first obvious things to check.
That's an easy fix. Again, they were in their normal place so that wasn't a

%-PRACTICE

%-KNOWLEDGE

%-ANALYSIS
factor. Ahhh, I thought about calling
ATC [air traffic control] declaring an emergency; however, it wasn't that bad

%-ALTEPLAN

%-SAFETY
so we didn't do that, and, ahhh, just continuing to think of places to land
at just in case the engine did quit.

%-KNOWLEDGE
And since we, I knew the area pretty well, I knew exactly where to go.
There were quite a few airports between those two that we could have landed at safely.

ELD: Thanks 812
Coded Version of EXP3SC3  9/1/01 2:49:18 PM  Page 1

EX3P3SC3 April 20, 2001

ELD: This is a cross-country flight 3
that you're on. You arrive at your 4
destination airport and, ahh, during 5
your preflight you detect a problem. 6
So I'll let you read it over... 7

EP3: OK. 9

ELD: ...and then we'll talk about it. 11
[EP3 reads scenario 3]. OK. Could you 12
talk a little bit about your thoughts 13
about this particular scenario? 14

#-KNOWLEDGE  #-RECOGNITION
EP3: OK. Well, we're at an airport, 16 -#
and this is not an uncommon thing 17 |
where something breaks once you get 18 |
somewhere, or you're ready to go 19 |
somewhere. Ahhh, in this scenario 20 -#
someone's, ahh, the flaps are down 21

#-KNOWLEDGE
thirty degrees. You obviously cannot 22 -#
fly the airplane like that with the 23 |

$-WEATHER  $-ANALYSIS
flaps stuck like that. Ahhh, weather 24 -#-$-$
is good, which is deteriorating, 25 |
higher winds, lower ceilings - OK, 26 |
that to me, is not a factor. OK, we 27 -$
have something more, more ahhh, 28 |
detrimental here and that's a plane 29 |
that might not be working correctly. 30 |

#-WEATHER
I'm not worried about the weather, I 31 -#
don't feel pressed by it. Ahhh, I 32 -#
don't feel pressed by the friend who 33 |
has his check ride because even if he 34 |
can't - the plane weren't fix - 35 |
operating then anyway, he couldn't do 36 |

#-OPTION
it, do the test anyway. Ahhh, it also 37 -#
says an airport attendant who is not a 38 |
mechanic says he has seen the problem 39 |
before: he knows what it's about, he 40 |
can get the switch, he can get it 41 |
fixed - this and that. Ahhh, not a 42 |
factor, I wouldn't let him touch the 43 |

$-PLAN
airplane. Simply, goes like this - the 44 -#-$
messing with it, the attendant is not 45 |
gonna mess with it and I find another 46 |
way to get back -- and that's it. 47 -$

ELD: You said that, ahhm, you're not 50
going to allow the attendant to touch 51
the airplane. What is your thinking 52
on...? 53

#-LEGAL
EP3: Well, I mean, ahhm, I'm not 55 -#
gonna let him try to fix the problem 56 |
because he's not a mechanic. And this 57 |

$-NEGATIONS
 goes into a legal thing here. Ahhhm, 58 -$
Coded Version of EXP3SC3  9/1/01  2:49:18 PM  Page 2

let's say I did let him fix it and he  59
  did get the flaps up and I flew it.  60
OK, ahmm, the airplane had a problem,  61
  it wasn't signed off by a proper  62
  maintenance and that's what has to be  63
  done in this situation when there's a  64
  repair. It's got to be signed off by  65
  a mechanic. He doesn't -- he might say  66
  he knows what he's doing, but that  67
  doesn't mean anything. He prob, he  68
  might not know what he's doing. So  69
  ahhhh, you know, there's a legality  70
  thing there; if there were an accident  71
  because of it there could be lawsuits  72
  all kinds of things. It could  73
  open just a huge can of worms in this  74
  scenario. So, ahhhh, bottom line is,  75
  the plane stays where its at. I don't  76
  care if he thinks he's fixed it or  77
  not, the, the airport attendant. I  78
  surely because again, I'm not a  79
  mechanic, he's not a mechanic and  80
  we're not, we're not licensed to do  81
  it. And if the FAA got wind of it,  82
  ahhhh, there could be violations, there  83
  could be fines, there could be things  84
  of that sort. So, ahhhh, it's simple --  85
  the airplane, if that were me, the  86
  plane would stay exactly where it is  87
  and ahhhh, that's just too bad, that's  88
  the way it goes.  89
  
ELD: As you look at this scenario,  91
  what is the most important thing you  92
  need to be considering?  93

#-SAFETY

EP3: The safety of the person who  95
  could be operating this airplane and  96
  $-LEGAL
  if someone not authorized to fix it  97
  were to do it and then someone flew  98
  it, meaning me, and there were an  99
  accident, ahhhh, you know, it could be  100
  do -- it could be terrible. So, if I  101
  were to fly it, I wouldn't fly it and  102
  I wouldn't want anyone else flying it  103
  until it were properly repaired. So,  104
  ahhhh, the airport attendant would be  105
  told by me, 'You're not to touch the  106
  airplane.' I don't care if he know  107
  exactly what it is, 'you're not doing  108
  it and ahhhh, I don't care who you are,  109
  you're not a mechanic.' And ahhhh,  110
  that's the way it would be so I'll  111
  lock the airplane and leave, get a  112
  rental car. The friend who has the  113
  check ride four hours from now gets  114
  another airplane. Or takes it,  115
  or cancels it and takes it a later day.  116
  It's not the end of the world.  117

ELD: Are there any circumstances,  119
  circumstances under which you would  120
  fly this airplane?  121
Coded Version of EXP3SC3 9/1/01 2:49:19 PM  Page 6

and ahhh, you have a licensed mechanic 301 -#

#-LEGAL
doing the work. He can sign it off 302 -#
legally and properly [referring to 303 |
signing of the maintenance logbooks 304 |
for the aircraft]. 305 -#

ELD: And, I'm getting the idea here, 307
that you, under no circumstances, 308
would allow the attendant to do 309
anything on the airplane? 310

EP3: That's correct. 312

ELD: Even if the mechanic said that 314
he, ahhh, perhaps knew what he was 315
doing. 316

EP3: I wouldn't, I'd let him put fuel 318
in the tanks - that's about it. 319

ELD: OK. How about alternative 321
number two? 322

EP3: Again, I wouldn't do this, 324
however -- have the attendant change 325
the switch, check it out and fly it. 326

Ahhh, well, I should rephrase that. 327

Tell you what, let me switch that. 328

Have the attendant reset the switch, 329
get the flaps up and fly home, I'd do 330
d that. That's what I'd do for number 331
two. 332

ELD: Just to make sure I understand 334
you there. You said you would, you 335
would do that? 336

$-DEFINISIT
EP3: Well, if I had to pick one of 338 -$

%-PRACTICE
these, that's what I'd do, I 339 -%-#
personally wouldn't let him do it 340 |
thought. I wouldn't, like I said, you 341 |
know, I wouldn't let him touch 342 |
anything. 343 -#

ELD: So if the attendant said he 345
could get the flaps up without a 346
problem - you would not take him up on 347
d that. 348

EP3: Me, personally, no. 350

ELD: Why did you pick that as number 352
two? 353

#-KNOWLEDGE
EP3: Ahhh, because he got the flaps 355 -#
up and he can, the plane will fly fine 356 |
with the flaps up and you can land it 357 |
with the flaps up if you had to. You 358 |
j ust have to increase the landing 359 |

$-SAFETY
speed a little bit, that's all. The 360 -#$-
only problem there if they 361 |
Appendix G
Expert Pilot Coded Transcripts

Coded Version of EXP3SC4 9/1/01 2:52:31 PM Page 2

Pilot Decision-Making

get home no matter what and they might 59 -# ||
overlook important checklists or 60 ||
weather, weather might be 61 ||
deteriorating, things of that sort - 62 -# -% -@

-LESSON
so. It's something you want to avoid 63 -# |
and something you want to fight. 64 -#-$

ELD: You had mentioned that stress, 66
very likely could have been a factor 67
in this pilot's decision-making. 68
Could you talk a little bit about how 69
stress may have effected her 70
decision-making here? 71

-STRESS
EP3: Ahmm, well the stress is 73 -#

- STRESS

obviously building and ahhh because of 74 |
the non-ability to get the fuel when 75 |
she wanted it. So, because of that 76 |
stress it might, the stress itself 77 |
might take away from her ability to 78 |
shh check, do checks or checklists 79 |
that ahh, normally would be routine. 80 |

-NEGATIONS -SAFETY
So she might miss ahhh, again, the 81 -$|
stress might add to it as well, to 82 |
miss something important. 83 -$#

ELD: What do you feel should have 85
been her thinking priorities here? 86

-SAFETY -PRIORITY
EP3: Safety, again, ahhh, you can 88 !

always and, you can always keep it in 89
mind there, anticipate and expect 90
delays for some reason or another. 91
The plane doesn't start, no fuel, 92

-EXPERIENCE -PLAN -LESSON
whatever. Ahmm, if you think about 93 -#
that prior, when it does happen, it 94 |
won't be as stressful. And it pretty 95 -#
much happens quite a bit. Ahmm, and 96

-ALTERNATIVE PLAN -LESSON
she also should of - I always try to 97 -#
give myself a buffer. If the 98 |
weather's looking OK, but it might 99 |
deteriorate later. I want to leave a 100 |

-ALTERNATIVE PLAN
little earlier just to give yourself 101 -$|
a buffer. Just in case something does 102 |
happen prior to departure, like this, 103 |
you'll still have enough time to get 104 |
up in the air and get to your 105 |
destination safely. 106 -$$

ELD: As you look at this, ahhh, 108
portion of the scenario, do you feel 109
time was a factor for this pilot 110
and if so, how did that affect her 111
thought process? 112

-TIME
EP3: Yeah, I think she, ahhh, she 114 -#
wanted to get to the airport and get 115 |

-WEATHER
Appendix G

Expert Pilot Coded Transcripts

Coded Version of EXP4SCI  9/1/01 2:55:58 PM  Page 1

EXP4SCI May 2, 2001

ELD: The, ahhh, next scenario deals
with, again, a cross-country flight, and ahhh, you arrived at your
and ahhh, you arrived at your
destination and there's a problem. So we'll let you read it over and then
we'll discuss it. [EP4 reads Scenario 1]. OK, well, as you come into this
airport and you're faced with this scenario, what's ahhh, could you talk
a little bit about your thought process and how you're gonna deal with
this situation.

#-RECOGNITION

EP4: [pause] Ahmm, I'm reminded of
a, of an airline guy who was clear to land on the runway in Oklahoma City
and the winds were, ahhh, at ninety degrees to the runway, fifty knots.
And the guy says, 'Are you kidding me, fifty knots?' and the tower says,'Nope, zero nine zero at fifty, cleared to land.' [laughs] and the
guy did - apparently it didn't crash.

#-CONTEXT

Ahmm, there's some things that you need to consider here. Ahmm, the winds are essentially ninety degrees to the, you know, to the runway at ten knots, gusting to seventeen. There is a demonstrated cross-wind component, demonstrated of, of fifteen knots. So, does that, ahhh,-- that doesn't mean that the gusts to seventeen really exceeds the cross-wind component. Ahhh, but you have to understand that the cross-wind, and that the cross-wind, demonstrated cross-wind component, has no legality. There's nothing legal.

#-ANALYSIS

about it. If you are proficient in the airplane, you should be able to handle a ten-knot, ninety degree wind fairly easily. If you're not proficient, you might elect to go somewhere else, especially since the other, other runway isn't, isn't active for some reason. Ahhh, you can't demand that you land on it. They might just say, 'Well, you can't land on it -- it's got sink holes on it or something.' Ahmm, so I don't think a ten - to me, personally, a ten knot cross wind - I hardly notice it.

#-SAFETY

Ahhh, someone with less experience might be, might be ahhh, concerned about it, maybe should be. Student pilots might be concerned about it. I
Appendix G

Expert Pilot Coded Transcripts

Coded Version of EXP4SC1 9/1/01 2:55:58 PM Page 5

ELD: Let's say that was the case

$-PRACTICE

EP4: OK. Let's say, let's say you have, you know, thirty knot cross wind, OK. That, that gets your attention. You won't even try an approach at that point. But you know of another airport fifteen miles away and assuming that you have plenty of fuel, ahhh, weather isn't a big factor, but it's becoming one [reading from the scenario]. And you know there's a runway where the wind is right down the runway - it makes more sense to do that. It makes more sense. I mean you always land into the wind if you can do it. If you can't do it, then, make the best that you can. But if you, if you, even in this situation if you were to say, it's against, it's beyond your ability. You have to make that assessment. And if you say, 'this isn't something I can do.' For whatever reason I'm not comfortable with it, well then yeah, go someplace else where the wind is right down the runway. I mean I think about that all the time, if I can't get in, I know I can get into Frederick. Cause if the wind is a cross wind here it's gonna be right down the runway at Frederick. So I have that in the back of my head that I will, again, have an escape route. I will go someplace where I can do it.

ELD: Presuming that the winds were more, ahhh, than depicted here in this scenario and they were approaching your limitations, ahhh, is there any additional information, that's not in there [the scenario] that you would like to have?

EP4: If, ahhm, well, [coughs] ahhm, I would think if you, depending on how far away this airport was - you should have gotten the weather forecast which you're required to do [coughs] ahhm, you're suppose to know, quote, 'all available knowledge of the airport of intended landing' [quoting from FAA regulations]. Aahm, I would think a person irresponsible to get to where he's going - to find out that he weather doesn't suit him. He should
Appendix G
Expert Pilot Coded Transcripts

Coded Version of EXP4SC2  9/1/01 3:03:09 PM  Page 9

#-TIME

times. It happens so infrequently 474M -# 1-9
that you don't recognize it for what 475 | | it is. It's almost like landing 476 -# 5

downwind [with the wind as opposed to 477 landing into the wind] it happens so
infrequently that you don't know why, 479
why is the plane going so fast when 480
everything looks perfect? I'm, I'm 481
rambling, but I'm sorry. 482

ELD: No, no that's, that's excellent 484
-- good example, good example. Ahhh, 485
as you look at this scenario, what 486
would be your thinking priorities? 487
The most important thing you need, you 488
feel you would need to consider, the 489
second most important thing you would 490
need to consider as you look at the 491
situation. 492

#-PRIORITY  #-SAFETY

EP4: Well, I think the most important 494 -#
thing is, as a pilot -- if you have to 495 | put a plane down someplace, you need 496 | to put it down someplace where you're 497 | not gonna hurt anybody. That's 498 | probably the most important thing, 499 | ahhhh, in my thinking. I mean, this is 500 -# your responsibility. There are places 501 where you couldn't possibly put it 502 down without doing major damage to 503 ahmm, people and vehicles on the 504 ground, but I think in your, in your, 505

#-PLAN

ahhh, as you play the 'where can I 506 -#
land' game, you're always looking to 507 | keep it -- damage to an absolute 508 |

**-PRIORITY

minimum. Not to yourself, I mean you 509 | ** put yourself in this position so you 510 | have to think about other people. 511 Ahmm, the second, or the first or the 512 | second depending on how, how you look 513 | at it would be, ahmm, the worse enemy 514 |

$-EXPERIENCE  $-LESSON

you have in the cockpit is panic. You 515 -$-8* know, you can go through a period of 516 | denial and you can, and you can do 517 | whatever, but you really have to fight 518 | the tendency to panic and I think a 519 | lot of that comes from how you are 520 |

#-PRIORITY

instructed. You know, if you're 521M -# 1 instructed to always fly the airplane, 522 | that's number one, always fly the 523 |

**-PLAN

airplane. Then, and then if you have 524 -#-5 ** been, if you've had certain procedures 525 | just hammered into your head so often 526 | that you do it without thinking, then, 527 ** ahmm, I think you're ahhhh, that, you 528 |

know, - since you're doing things 529 | reflexively that you're, you're now, 530 | ahmm, reducing the tendency to panic 531 because you've practiced it and 532 |
Appendix G

Expert Pilot Coded Transcripts

Coded Version of EXP4SC2	9/1/01 3:03:10 PM	Page 14

very possible, I mean that, that
happened to me before. Now I do
remember once where I had an
electrical failure and this plane I
was flying had a fuel totalizer.

ELD: I don't know what that is.

EP4: It just says how much fuel is
going into the engine.

ELD: Oh, OK.

$-EXPERIENCE

EP4: O.K. Ahhh, the fuel totalizer
started - it didn't blink but it
started to fade. You know the LCD
display. Or, you know, the, the LED
display started to fade and I was
with a guy and I had never seen it
before. I've never seen that display

$-LESSON

fade. What it was telling me was, I
found out later, that I was losing,
you know, the alternator wasn't - I
was now running on the battery
[alternator was not supplying
electrical power] and I can't remember
- I think I, I think I saw an ammeter
display indicating it charging. I
think I did, but I can't swear to it.

$-EXPERIENCE $-WEATHER

So we take off, get into IMC
[Instrument Meteorological Conditions]
-- flying in the clouds] and guess

$-DEFINNEDIT

what? We lose, lose the radios, lose
all electrical, that we had to crank
the, crank the [landing] gear down.

$-WEATHER

Fortunately, it was a high ceiling
[lowest layer of clouds] and we
descended down into VFR [Visual Flight
Rules - not flying in the clouds] and
landed up in Pennsylvania somewhere.
So it, as careful as you are, I mean
here is something that we had never

$-RECOGNITION $-RECOGNITION

seen before. Now I know it's telling
me that I'm losing, you know, my
electrical system is, isn't, is not
functioning right. It's not, it's not
the instrument, it's the system.

ELD: You mentioned you had an
electrical problem at BUI also?


ELD: Could you talk a little bit
about that?

$-EXPERIENCE

EP4: Well, that was just, just, I say,
a ground strap on a battery came lose.
Appendix G

Expert Pilot Coded Transcripts

Coded Version of EXP4SC2  9/1/01 3:03:10 PM  Page 15

% - CONTEXT
And ahh, we were cleared to do the 835 | -%
ILS [Instrument Landing System - type 836 | |
of precision approach for landing] 837 | |
into runway 33 Right, low approach. 838 | |
There was a [Boeing] 727 [type of 839 | |
commercial aircraft] waiting, you 840 | |
know, to take the runway. This is at 841 | |
night and we lost, you know, we were 842 | |
inside the outer marker [within 2 843 | |
miles of the runway threshold] and we 844 | |
lost total electrical power. No, we, 845 | |
we were just right at the, at 846 | |
the, right at just about right at the 847 | |
outer marker - maybe just a little bit 848 | |
outside because, you know, when you 849 | -%
lose electrical power, a lot of people 850 | 
don't realize this, I mean, when you 851 | 
say it it sounds silly but people 852 | 
don't realize it. You're headset 853 | |
doesn't work, the intercom doesn't 854 | 
work, radios don't work. You're 855 | |
shouting at each other. That little 856 | |
flashlight that you should have tucked 857 | |
away in your shirt isn't there and as 858 | |
you're shouting at each other. 'Should 859 | |
i pump the gear down? Yes, great idea, 860 | |
pump the gear down.' [laughs] because 861 | |
this was an electric motor but a 862 | |
hydraulic, hydraulic system. So you 863 | |
had to chchchch, pump it down. We lost, 864 | |
we didn't get a, we didn't get any 865 | |
signal light at all from the tower. 866 | |
Fortunately, the 727 opted not, you 867M | |
know, they saw all of our lights just 868 | |
blink out and they opted not to take 869 | 
the runway until they figured out what 870 | 

$ - PLAN
we were gonna do. So we figured at 871 | -$
that point we're just gonna land the 872 | |
airplane, apologize later. But the 873 | -$
[control] tower didn't even have any 874 | 
knowledge - you know we called the 875 | 
tower after we got off the, you know, 876 | |
out of the airplane and they said, 'oh 877 | |
yeah, we were wondering where you 878 | |
went.' But they, all the lights just 879 | 
blinked right out. 880 | -$

ELD: That fast. 882

$ - EXPERIENCE
EP4: That fast -- it was instantaneous. 884 | -$
I mean we, and we had a charging 885 | |
system when we left Gaithersburg. And 886 | |
what happened was the little ground 887 | |
strap had broken - a little connector 888 | |
had broken. Nothing you could fix 889 | |
from the inside of the cockpit. 890 | -$

ELD: Incredible. 892

$ - EXPERIENCE $ - ANALYSIS
EP4: And what it was it, because it 894 | -$

$ - DEFINESIT
had broken, ahhhm, for some reason the 895 | -$
Appendix G
Expert Pilot Coded Transcripts

Coded Version of EXP4SC2 9/1/01 3:03:10 PM Page 16

alternator was a generator [aircraft] 896 1
had a generator rather than an 897 1
alternator and the gener, it wasn't, 898 1
it wasn't producing any power. Or 899 -S
maybe it was - I'm not quite sure but 900 1
I, I think maybe where there's a "Y" 901 1
between the generator and the battery 902 1
- it broke right there. So that the 903 1
generator wasn't working and the 904 1
battery wasn't working - was 905 1
disconnected. The battery would have 906 1
worked, but it was disconnected. The 907 1
generator didn't do its thing or 908 1
something. 909 -#

ELD: Well, that's a pretty large 911 1
pucker factor there isn't it - at 912 1
night at Baltimore. 913

#-RECOGNITION #-LESSON #-EXPERIENCE
EP4: Yeah. But you know, you know 915M -#-S
from your experiences you learn to 916 1
look for certain things and do certain 917 1
things. You know, I know if I have a 918 1
flickering light on a display I'm 919 1
gonna look real close at those 920 1
alternators. Make sure they're 921 -# 1
charging, make sure the battery is 922 1

#-ANALYSIS
charging. Ahhh, but you wonder, I 923M -#-S
mean, how many of these things can you 924 1
incorporate into your, into your own 925 1
personal checklist to the point where 926 1
you don't even fly the airplane? 927 1
Cause you have so many things that, so 928 1
many things could happen. 929 -#

ELD: Well, you made a good point 931 1
about the - your experiences and the 932 1
value of your experiences. You've 933 1
obviously learning a lot of important 934 1
things from them. And, do you think 935 1
those experiences were applicable - I 936 1
mean do you find yourself thinking 937 1
back to certain experiences you've had 938 1
when you're faced with various 939 1
situations? In other words, if 940 1
something were to come up -atypical- 941 1
that perhaps you had not experienced, 942 1
could you associate it with something 943 1
that you had experienced in the past 944 1
that may have been somewhat similar? 945 1
Maybe not the same thing but somewhat 946 1
similar to that. 947

#-EXPERIENCE #-RECOGNITION
EP4: Ahhh, yeah, I think if you saw a 949 -#
flickering display or something. It 950 1
wouldn't have to be a totalizer, it 951 1
would be a radio, it could be a 952 1

$-KNOWLEDGE $-LESSON
transponder. Cause usually, if you, 953 -$S
if you're electric system starts to 954 1
fail, it's the ones [electrically 955 1
powered components] that draw the most 956 1
current that are gonna fail first. So 957 -$S
Coded Version of EXP4SC3  9/1/01 3:10:01 PM  Page 1

EXP4SC3 May 2, 2001

ELD: The next scenario, ahhh, you're also on a cross-country flight, you've landed at your destination, ahhh, you're going through your pre-flight inspection and you have a problem. So I'll let you read this over and then we'll discuss it.

!-CONTEXT

EP4: I'm all by myself? 11!

ELD: That's correct [EP4 reads Scenario 1] All right, well, could you talk a little bit about your thought process, about this particular scenario. What are you thinking about? What's going through your mind?

EP4: On this one.

ELD: Yes.

$-PRACTICE

EP4: Well, on this, in this instance, it's a no-brainer. You simply don't flap the airplane. And if the person is inconvenienced, he friend or not, it's too bad. You might be sorry enough to buy him an hour of time, in an airplane but, ahhh, there's no way I'm gonna take off in an airplane that's got flaps frozen at thirty

$-CONTEXT
degrees. Now if they were twenty, $-$

$-RECOGNITION $-KNOWLEDGE $-LESSON
fifteen or twenty, I probably would because that's what you do anyway for, ahhh, when you fly at \( V_x \) [speed at which aircraft will produce the best angle of climb] take, you know, short field takeoff [some aircraft operating ** procedures advise pilots to takeoff with 10-20 degrees of flaps for short

$-KNOWLEDGE
field operations]. In many cases the flaps are, the flap selection is designed to put you at \( V_x \). So the plane doesn't know if you're at \( V_x \), commin' or goin', it just knows

*-DEFINISIT
it's flying at \( V_x \). So if I had, if I had partial flaps, I would definitely

$-WEATHER
takeoff. Ahhh, but then, but the weather was good seems to be deteriorating [EP4 is reading from the written scenario] with higher winds

$-UNCERTAIN
and lower ceilings. I'm not sure how to interpret that. You know, I'm assuming I had VFR [Visual Flight Rules - generally favorable flying conditions] even though the ceiling is
Coded Version of EXP4SC3  9/1/01 3:10:01 PM  Page 2

coming down I still have VFR 59 |
conditions. I mean if the ceiling is 60 |
coming down; down, down, down 61 |
obviously then that is a no-brainer, 62 |
$-WEATHER |
too. You're not gonna go. VFR 63 -$ |
conditions with partial pan, partial 64 |
#-SAFETY |
flaps, I'd do it. IFR [Instrument 65 -# |
Flight Rules - generally unfavorable 66 |
flight conditions which may include 67 |
flying in the clouds] or marginal VFR 68 |
no. Because now you just, you're 69 |
just a statistic waiting to be counted 70 -# |
#-PRACTICE |
OK. Ahmm, as far as the, the 71 -# |
airport attendant [makes 72 |
unintelligible noise] you know, 73 |
[laughs] ahhh, he can, he can go 74 |
attend something else because, ahmm, I 75 |
mean I might know the limit switch is 76 |
$-ANALYSIS |
stuck and I might not, I might even 77 -$|
know how to fix it, but I wouldn't 78 |
even try. And I wouldn't let someone 79 |
else who wasn't a mechanic do it 80 -# |
either. Because, if he fixes it to his 81 |
satisfaction then how, how am I gonna 82 |
know that it doesn't fail 83 |
#-ALTERNATIV |
immediately...later on? So, ahmm, as 84 -#-
far as an A&P at an airport 85 |
with fifty miles away - I'd find a 86 |
way to call a cab or, you 87 |
$-EXPERIENCE |
know, pay to have the A&P come to the 88 -#-
airport. You know, flying is all 89 |
about spending money, you know 90 -$
[laughs]. 91

ELD: I'm gonna stop for just a second 93
and change [sides of the tape] 94

#-EXPERIENCE #-RECOGNITION

EP4: You know, it says here, 'you 96 |
call the flight school and you get 97 |
their answering machine.' And if 98 |
they're like [mentions the name of a 99 |
$-PRIORITY #-POSATIONS |
local flight school] they never even 100 -#-
check the answering machine. So, but 101 |
that hasn't completely resolved you of 102 |
your, absolute you of your 103 |
#-EXPERIENCE #-PRACTICE #-PRIORITY |
responsibility to contact this guy 104 -#- |
whose going for a checkride. I have 105 |
always made it a point who is on after 106 |
me [who has scheduled the airplane 107 |
ext]. If I have an airplane 108 |
scheduled for a two-hour block of 109 |
time, I would say well, 'Joe Blow has 110 |
get it at four o'clock,' so I got to 111 |
be walking in the door at a quarter, a 112 |
quarter of four. You know, if I'm not 113 |
going to be able to walk in the door 114 |
at a quarter of four, I make sure that 115 |
Coded Version of EXP4SC3  9/1/01 3:10:07 PM  Page 11

perubations that you get between 579 |
ground effect [when aircraft is within 580 |
a wingspan of the ground - reduction 581 |
in drag which allows aircraft to fly 582 |
#-EXPERIENCE
at lower than typical stall speed] 583 -$-
and, and, the flying air. I mean I 584 |
have routinely flown with full flaps. 585 |
A lot of times, ummm, flying with the 586 |
Civil Air Patrol [auxiliary of the 587 |
U.S. Air Force - involved in search 588 |
and rescue operations] if we wanted to 589 |
gerel real slow and we wanted to circle 590 |
$-CONTEXT
around something, put all those flaps 591 -$-
down. But, I needed to make that 592 |
qualification, it, it's the take off 593 |
I won't do, with full flaps, at least 594 -$
deliberately. 595

ELD: You mentioned that your second 597
option was a possibility. Could you 598
elaborate a little bit more on that? 599

EP4: Ahhh, about having the attendant 601
change the switch. 602

ELD: Right, right. 604

$-CONTEXT  *-EXPERIENCE
EP4: Ahhh, it would depend on the 606 -$ -*
attendant. I know a lot of people who 607 |
%-DEFINITE
have as much mechanical skills as any 608 -$-$ |
A&P, but they're not an A&P. I mean, 609 |
you know, I'm a retired engineer and 610 |
I've turned a wrench many a day on, on 611 -*
engines. But, there are things 612 |
that I might do, because I know I can 613 |
getch that flap up. But I'm not sure I 614 |

%-ANALYSIS  #-PLAN
would trust someone else, ahhh, to do 615 -# |
it. I mean I would be, if, if I could 616 |
see that the flap was stuck, and I 617 |
could get the flap up myself, and then 618 -# |
pull the breaker or something so it 619 |
won't come down - I might be inclined 620 |
to get airborne and then boogey on 621 |
back home and then just not plan to 622 |
use flaps. It's the trusting some 623 -%

$-KNOWLEDGE  %-EXPERIENCE
attendant who you don't know to do it. 624 -$-$
Ahhm, I mean I've done lots of work 625 -$
on airplanes, but I'm not an A&P. And 626 |
I know there's certain things that I 627 |
%-UNCERTAIN
can do to make, you know, to fix 628 -$-$
things, but I don't know that the 629 -$
attendant knows that. 630

ELD: Well, you mentioned you might 632
let the attendant work on it. It 633
depended on some things. Could you 634
expand on that. What specifically 635
would you be looking for in the 636
attendant to make the decision as to 637
Appendix G

Expert Pilot Coded Transcripts

Coded Version of EXP4SC3  9/1/01 3:10:08 PM  Page 16

go below minimums, then yeah, we go,  874 |  
we'll take a charter flight because,  875 |  
you know, we got better equipment, you  876 |  
got longer range on the fuel and we  877 |  
know we can get back, we can get  878 |  
somewhere. But in a Cessna 182, it's  879 |  
a different situation. So yeah, I  880 |  
have my own personal minimums, but  881 |  
they vary depending on the airplanes  882 |  
there's enough. I mean when I fly a  883 |  
Pilatus [high performance aircraft],  884 |  
I'll make decisions to go in  885 |  
that plane to airports that I know I'm  886 |  
gonna shoot an approach to that I  887 |  
wasn't make the decision - if I  888 |  
could make it range-wise, you know,  889 |  

-DEFINISIT  #-PRACTICE

distance-wise and still have reserves,  890 |  
ahhh, in a [Cessna] 172. So,  891 |  
depending on the airplane. Sort of  892 |  
raises and lowers your, your minimums.  893 |  

ELD: Would there be anything else in  895 |  
addition to the type of equipment  896 |  
you're flying that would factor into  897 |  
this go/no-go decision?  898 |  

-WEATHER

EP4: Yeah, the type of equipment,  900 |  

$-ALTPLAN  $-PRIORITY

ahhh, you always want to know where  901 |  
there's VFR conditions, ahhh, you  902 |  
always have to have an escape route.  903 |  
I don't emphasize that enough. You  904 |  
don't have an escape route, you're,  905 |  

*DEFINISIT

you're, you're reducing your options  906 |  
automatically. Ahhh, as far as, as  907 |  
far as, as you know, like the minimums  908 |  
or the conditions at the airport that  909 |  

%EXPERIENCE

I'm going to. Again, that depends on  910 |  

%WEATHER

the airplane that I'm flying. If I  911 |  
was in the Pilatus and this happened  912 |  
back when they had the big ice  913 |  
storm that came through here. We were  914 |  
coming back from Salt Lake City and we  915 |  

%ANALYSIS  %ALTERNATIV

Washington non-stop and still have an  917 |  
hour of fuel left over. But we got to  918 |  
talking about it, you know, and I  919 |  
said, 'look,' I said, 'why don't we  920 |  
plan to stop in Indianapolis. We'll  921 |  
refuel and then make a decision  922 |  
whether we're even gonna continue to  923 |  
fly,' which I talked the owner out of  924 |  

%ALTPLAN

continuing to fly. I didn't think it  925 |  
was a good idea. So what we did, we  926 |  
refueled in Indianapolis. The idea  927 |  
being that we could fly all the way to  928 |  
Baltimore, not get in, and fly all the  929 |  
way back to Indianapolis and land  930 |  
safely. So that was a you know,  931 |
Appendix G
Expert Pilot Coded Transcripts

Coded Version of EXP4SC3  9/1/01 3:10:08 PM  Page 17

because of that airplane had that kind 932 |
of range then we, we, that was the 933 |

#-ANALYSIS
decision that we were discussing as we 934 -# |
were coming in for landing. But then 935 |

$-UNCERTAIN
we got on the ground, you know, and I 936 |-$ |
said, 'You know, we're flying into an 937 |
unknown situation. I mean, I can't, 938 |
there's, you know, I can't get the 939 |
AWOS, [Automated Weather Observation 940 |
Station] you know, you call the AWOS 941 |
on a cell phone at Gaithersburg. I 942 |

can't get them, they're not coming up 943 |-$ |-*
- I don't hear anything. And I said, 944 |
'we have massive ice storm, snow 945 |
storm, you know. Chances are we're 946 |
gonna be shooting an approach to 947 |

$-CONCERNS
minimums.' Ahhh, there is, ahhh, what 948 |-$ | |
other consideration? Ahhh, I said, 949 |
'we're gonna, you know, we're gonna be 950 |
tired, it's gonna be night, it's gonna 951M |
be minimum conditions, we don't know 952 |-$ |
the condition of the runway at 953 |
Gaithersburg. There's no one there, 954 |-$ |
ox no one's answering the phone. So what 955 |
does that mean when no one is 956 |
answering the phone? It means they're 957 |
not there.' [coughs] This airport is 958 |
like a lot of airports - they don't 959 |
prow the runways until the snow stops. 960 |
So you could have, you could be 961 |
fly into a situation where you have 962 -# |

$-ALTERNATIVE
twenty inches of snow on the runway. 963 -# |
I said, 'everything points to us 964 |
spending the night here, going to a 965 |
restaurant and [coughs] and getting, 966 |
you know, have some wine, have a good 967 |
dinner, good night's rest and then 968 |
tomorrow the storm will be blown 969 |
through and we'll be able to go.' So 970 |
the owner of this airplane ahhh, has 971 |
never been one, I mean he, ahhh, well, 972 |
he's never been one to, ahhh, take 973 |
unnecessary chances. Now, saying 974 |
that, I mean the guy has a history of 975 |
dinging airplanes because of his 976 |
ability to fly. But he's never made a 977 |
bad decision. He's never made a 978 |
decision to go in the face of all 979 |
odds. So, I was, I was kind of, I was 980 |
kind of happy that we didn't have to 981 |

$-PLAN
yell and scream and shout at each 982 -# |
other. Because I wasn't gonna go. If 983 |
I had to, you know, he could have 984 |
fired me. I wasn't going, but he's 985 -# -%
not that way. 986 |

ELD: Have you had people put pressure 988 |
on you to do things like this... 989 |

$-EXPERIENCE $-STRESS
-#
Appendix G

Expert Pilot Coded Transcripts

Coded Version of EXP4SC4  9/1/01 3:16:35 PM  Page 4

meeting was and how stressed she was 174 |
at the meeting, this is another 175 |
stressor - and independent of anything 176 |
\$-OUTSIDEPAC
else. Like if this meeting hadn't 177 -\$-
gone well, she might be upset. The 178 |
fact that it went very well, she 179 |
might be emotionally charged, you 180 |
\$-ALTERNATIV
know, to get going, you know. Ahhh, 181 -\$-
and maybe you might consider not going 182 |
just because it's late in the day and 183 |
she's been in a meeting for two or 184 |
\$-EXPERIENCE
three, four hours. I fly down to 185 -\$-
Raleigh-Durham with a guy routinely. 186 |
His airplane and he, he's working down 187 |
in Raleigh and he goes down there for 188 |
two or three days and he comes back 189 |
coughs]. Well, he has me fly down 190 |
with him, especially if he knows he's 191 |
got you know, like if he's got a big, 192 |
heavy-duty meeting that he's got to 193 |
\$-STRESS
attend. He doesn't feel good about 194 -\$-
flying the airplane by himself when 195 |
his got all this stuff on his mind. 196 -\$-
So I go down and drop him off, bring 197 |
the plane back, go back down and pick 198 |
him up a few days later. And he gets 199 |
to fly his airplane without having to 200 |
be stressed about it. And I think 201 |
that's a marvelous thing. I mean, I 202 |
think more people ought to do 203 |
\$-NEGATIONS
something like that [coughs]. I mean, 204 -\$-
this woman [coughs] has a lot of 205 |
options that people don't consider 206 |
because for some reason pilots don't 207 |
\$-ALTERNATIV
like to spend money. I mean, you 208 -\$-
know, if worse came to worse, she could 209 |
get herself someone who is more 210 |
competent on instruments to fly with 211 |
her. And then put the person on a bus 212 |
or a cab or whatever. Her best bet 213 |
would be to rent a car and drive home. 214 -\$-
That way she has to bring the car 215 |
back and she can return the airplane. 216 |
\$-NEGATIONS
But, a lot of options available to her 217 -\$-
which probably she's not taking 218 |
advantage of. 219 -\$-

ELD: As you look at this go/no-go 221
decision that this pilot is about to 222
make, ahhh, is there any particular 223
lesson that stands out as far as ahhh, 224
people's thought process in trying to 225
make that decision. 226

\$-CONTEXT \$-LESSON \$-RECOGNITION
EP4: Well, let's, yeah. If this is a 228M -\$
flight that she had done routinely, 229
you know, she's done this 230 |
seventy-seven times, then she sort of 231 |
Appendix G

Expert Pilot Coded Transcripts

Coded Version of EXP4SC4 9/1/01 3:16:35 PM Page 5

knows what to expect along the way     --  232  -#
[mechanics talking in hangar] hold 233
that off just for a minute [ELD turns
off tape for several minutes].  234

ELD: All right.  237

#-LESSON
EP4: Ahmm, lessons to be learned.  239M -#
Comes from experience gained. If  240 -#

$-EXPERIENCE
ahhh, how do I say this without  241 -$%
appearing to encourage people to scud  242 |
run [fly in between relatively low  243 |
clouds, not on an instrument flight  244 |
plan - typically, in marginal VFR  245 |

#-LESSON  #-PRACTICE
conditions]. You know there are ways  246 -#
to scud run. But the scud running  247 |
means you've got to have some  248 |
discipline. For example, I took, off  249 -#
out of Hagerstown one day, flying to  250 |
Gaithersburg [coughs]. And  251 |

#-ALTPLAN
essentially I was scud running, but  252 -#
I had an escape route. I knew I could  253 |
fly south down towards Martinsburg and  254 |

#-PRACTICE
be out of the, be out of the scud. I  255 -#-%
also could see the ridge line on the  256 |
mountains and I, I, I gave myself an  257 |
altitude below which I would not go  258 -%
and, as it turned out, I'm, you know,  259 |
twenty-five hundred feet going  260 |

#-ALTPLAN
across, I'm safe, you know. I'm  261 -#
going, heading in a direction where  262 |
the mountains are getting lower and  263 |
lower and I have my escape route. And  264 -#
I can always see the ridge line. And  265 |
my decision, my, you know, I, I've  266 |

#-ALTPLAN
made this decision. If I can't, as  267 -%
soon as I can't see the ridge line,  268 |
I'm heading south. As soon as I even  269 |
think that I'm gonna go below  270 |
twenty-five hundred feet, 'pffttttt'  271 |

#-LESSON
I'm heading south. So there, there  272 -#-%
are disciplined ways to be responsible  273 |

#-PRACTICE  #-PRIORITY
about scud running, but you can't  274 -#-%-
viole those rules. Once you, once  275 |
you've establish them, you can't  276 |
viole them because as soon as you  277 |
do, then you have to find a place to  278 |
land or run, and if you don't have  279 |
either, you're an accident waiting to  280 |
happen. Do I encourage people to do  281 -#
that? No, can you do it  282 |
responsibility and safely? If you're  283 |
disciplined, yes. I mean if she were  284 -$
in a situation like that, if she knew  285 
the route she was on and she knew that  286 
between Fort Columbus and wherever she  287 
was going that she wouldn't, if she  288
Appendix G

Expert Pilot Coded Transcripts

Coded Version of EXP4SC4  9/1/01 3:16:35 PM  Page 6

was, if she was as low as two thousand 289
feet with good visibility and she's 290
not gonna hit anything, well, yeah, I 291

*EXPERIENCE
mean we'd consider it. I mean you go 292
out to Kansas and you fly in Kansas, 293
you know they have skies overcast at 294
two thousand feet - thirty mile 295
visibility. And this happens all the 296

time. Would you consider going from, 297
you know, from ahhh, Wichita over to 298
Venton, Kansas at two thousand feet? 299
Yeah, cause you, you know, cause 300

$-CONTEXT
you've done it a thousand times. If 301
this is the first time she's been in 302
Port Columbus, first time she's made 303
this flight, she's got too many things 304

#-WEATHER
working against her. You know, 305
there's things that are stressing her, 306

!*WEATHER
the weather conditions, ahhh, and the 307
fact that she, you know, too many 308

$-CONTEXT
things working against her. If she, 309
if she were to sit back, if she were, 310
if she were sitting here in a chair 311
watching a video of her in that 312
situation, her sitting in a chair 313

#-ANALYSIS #-LESSON
would say, 'gee, she shouldn't go.' So 314
maybe you have to, then you have to 315
imagine yourself on a video in some - 316
that you're watching, you know, to 317
see, 'yeah, my objective self says 318
why she'd be a damn fool to go.' 319

ELD: OK, well, ahhh, that's a good 321
point. We'll take a look at the last 322
part of this scenario. She has made 323
her decision and then we'll discuss 324
it. 325

EP4: OK [EP4 watches second part of 327
video - Scenario 4] 328

ELD: Could you talk a little bit 330
about her in-flight decision-making on 331
this ahhh, in this scenario. 332

#-WEATHER
EP4: Ahhh, [pause] when she was 334
asking for [weather] conditions at 335
Palwaukee and they were great 336
conditions. I mean two five thousand 337
scattered [referring to height and 338
condition of clouds], twelve miles 339

$-DEFINITE
visibility, perfect VFR. Ahhh, 340
probably didn't have enough gas to get 341
to Palwaukee. I don't know how far it 342
is from Port Columbus to Palwaukee, 343
it's probably about, at least three 344
hundred miles...or more, maybe a little 345
bit more, cause Palwaukee is north of 346