

1 MR. LEWIS: I am willing to listen.

2 MR. DUBUC: Just a second. Off the record.

3 (Discussion off the record.)

4 MR. DUBUC: On the record.

5 Mr. Connors reminded me, we have had probably
6 at least two days of testimony from Mr. Edwards on the wing
7 problem in previous depositions, at least two days, and of
8 course Mr. Edwards is here on new matter. If the wing
9 stresses and wing discussions, which is the prior discussions,
10 is relevant to anything that he is offering in calculations
11 and he can tell us that, fine. But, I don't want to go
12 over that whole ground.

13 MR. LEWIS: I don't plan to go over two days
14 of testimony, Mr. Dubuc.

15 MR. DUBUC: In view of the fact that we did not
16 agree to contest liability, I don't think I am going to
17 let him answer the same questions all over again because I
18 don't want him impeached because he doesn't remember what
19 he said in 1979. I don't think that is fair and I think
20 that is one of the quid pro quos of liability. If we're
21 going to go back into the liability, I suppose it raises
22 the specter of going back into the entire case and then we
23 begin to impinge the sanctity of the stipulations.

MR. LEWIS: As I understand the rule, if it is relevant with respect to damages, then it's admissible and certainly discoverable.

MR. DUBUC: It's discoverable if it is new matter. But I think we're certainly under the agreement that if we were re-evaluating the wheel with witnesses who testified.

MR. LEWIS: My question is related to --

MR. DUBUC: I don't want him, I am not going to let Mr. Edwards get down the road of discussing Senator Proxmire and all of that other stuff that we went through in the liability stages. I am going to stop that right now and we will go to the Judge or whatever we have to do.

MR. LEWIS: I just want to find out, I have to start somewhere and I am laying a predicate. I want to know if there were a wing problem or problems, I thought that was generally admitted that there were. Then I was going to ask him what, if any, he took, what wing problems he took into consideration in arriving at the conclusions that he did as to where the various parts ended up and why they ended up where they were. That is what I want to do. If you tell me he won't answer the question, then --

MR. DUBUC: If it has relationship to the wing,

1 if it is a wing problem, fine, and if it is a wing life
2 we're talking about, that is something different. I think
3 we should explore that before we go over old ground.

4 MR. LEWIS: My understanding of the conclusion
5 of the wing, and in fact you were in charge of the rewing
6 program, weren't you?

7 THE WITNESS: No, sir.

8 MR. LEWIS: You weren't?

9 MR. DUBUC: Note my objection as to the relevancy

10 BY MR. LEWIS:

11 Q. I thought you were the Project Manager or
12 Assistant Project Manager of putting the new wings on, is
13 that not right?

14 A. No, that is not right.

15 Q. Have you ever been a Project Manager or Assistant
16 Project Manager in any way related to wings?

17 A. Are you going to talk about a point in time?

18 Q. At any time.

19 A. Today, yes, but not when the wing mod design
20 was accomplished.

21 Q. But you are now?

22 A. I am now, but the work has been done and the
23 decisions are in the hardware stage, but during the

1 formative design stages, I had almost -- I had nothing to
2 do with the structural redesign of the wing.

3 Q You're not a structural engineer, are you, is
4 that right?

5 A My degree is not structural, that is true.

6 Q Is it mechanical?

7 A It's not mechanical.

8 Q What is it?

9 A Electrical.

10 Q Now, are you now the Project Manager of the
11 replacing wings on the C5-As, is that correct?

12 A I am now the Chief Project Engineer at Lockheed,
13 Georgia of all aircraft.

14 Q Of all aircraft, does that include the replace-
15 ment wings on the C5-A aircraft?

16 A That includes the production phase of the wing
17 mod on the C5-A as it also includes the production and mod
18 of the other aircraft.

19 MR. DUBUC: Note my objection as to relevancy
20 of all of this. Can I have a continuing objection?

21 MR. LEWIS: Of course.

22 BY MR. LEWIS:

23 Q Were you in that capacity when you did the

1 study marked Defendants' D-1298?

2 A That is the study done in the past four weeks.

3 Yes, that was my title at that time. In effect, that
4 document has my signature with that title on it.

5 Q As the Project Manager for Lockheed, you are
6 aware of the history of the wing problems with the C5-A,
7 are you not?

8 MR. DUBUC: Problems?

9 THE WITNESS: First of all, the Project Manager
10 is not the same as the Chief Project Engineer. The Chief
11 Project Engineer is not the Project Manager, I really
12 don't know what that is, that could be things of a non-
13 engineering nature. Now when I wrote this report, I had
14 the title that I now have, Chief Project Engineer, but as
15 I stated, the design of this wing modification was
16 accomplished some three years ago, approximately. At that
17 time, I was Deputy, I believe I was -- my title at that
18 time was Assistant Systems Design Engineer in charge of
19 functional systems on the aircraft as opposed to the
20 structure.

21 BY MR. LEWIS:

22 Q My only question is in your, at the time that
23 you did your analysis of what you say happened with this

1 airplane, when it broke up, were you aware of the history
2 of the problems that the C5-A had with wings, if any?

3 A The previous aircraft, the previous wing had
4 the life, a fatigue life, not a strength, not an ultimate
5 strength, it had a fatigue life that was less than what the
6 Air Force desired.

7 Q Less than contract?

8 A No, siree, not less than contract. Therein
9 lies a big difference. It was Lockheed's contention in that
10 discussion with the Air Force that the wing met the
11 contract in that there was no contractual life, there was
12 a goal, but a goal is not a contractual requirement.

13 Q But what was the goal?

14 MR. DUBUC: Mr. Lewis, I want to say something,
15 I think this is going far beyond the scope of the trial.
16 It goes into the old matters, if you're going to raise
17 these issues and if the point is to try to get them in,
18 and of course I will object to the relevancy, and I should
19 state on the record that if they come in, then of course
20 we would have to put on witnesses other than Mr. Edwards
21 to explain it. I am just not so sure that the judge is
22 going to let us do all this because I think we may be
23 wasting our time unless you suggest we vitiate the

1 stipulations and go back to trying the case on the liability
2 stages, which I am not saying I would do, but in view of
3 the new information we seem to have acquired from the Air
4 Force, I would seriously consider it.

5 MR. LEWIS: Are you offering to do that?

6 MR. DUBUC: I am not deciding to do that.

7 MR. LEWIS: You let us know.

8 MR. DUBUC: I will certainly let you know,
9 right.

10 MR. LEWIS: And be sure to include the open
11 question of punitive damages when you do that.

12 MR. DUBUC: I will do that. If it was decided,
13 of course I realize what that would involve.

14 BY MR. LEWIS: . . .

15 Q Now I want to ask this witness some questions
16 on the subject so that I can see how it ties into his
17 report.

18 MR. DUBUC: It doesn't tie in.

19 MR. LEWIS: That is your point, Mr. Dubuc, and
20 you keep -- you know we can go through the things that I
21 want to ask him about and get finished with the deposition
22 and all go about our business. You keep interrupting him,
23 I think I have a right to ask him.

1 MR. DUBUC: I haven't interrupted, I think I
2 have been overly patient for my usual attitude and method.
3 I thought we weren't going to go through old ground. This
4 all has been testified to.

5 MR. LEWIS: I understand that. I am just trying
6 to find out a few short things so I can get into --

7 MR. DUBUC: You say you want to tie it to the
8 report.

9 MR. LEWIS: I have to start somewhere. Now I am
10 just trying to see what premise we have to start from, we
11 have to agree on at least some basic principles before we
12 can go into the question. I told you in advance what I
13 wanted to do and I don't think I have to do that, Mr. Dubuc.
14 This is a discovery deposition and I think I have a right.

15 MR. DUBUC: It's not an unlimited discovery.

16 MR. LEWIS: No, it isn't.

17 MR. DUBUC: It's limited to new matter.

18 MR. LEWIS: I am willing to adjourn and take
19 it up with the Court if that is what you want to do.
20 Either we can take it up with the Court and/or let me
21 proceed in an orderly fashion, I beg you.

22 MR. DUBUC: See where it goes, I don't want to
23 bring him back.

1 BY MR. LEWIS:

2 Q What was the goal for the life of the wings?

3 MR. DUBUC: As wing life.

4 MR. LEWIS: Yes.

5 MR. DUBUC: I object, I am going to ask him
6 not to answer that until you ask him whether that has got
7 any relevance to what -- in fact, no infants were sitting
8 in the wings and nobody, I don't think you have any claim
9 that any infant was riding on a wing or connected with the
10 wings which went off.

11 MR. LEWIS: So you won't be misled, Mr. Dubuc,
12 we contend that the airplane broke up in a different fashion
13 than this witness says and we contend that the parts became
14 differently from what this witness says. This witness is
15 an expert representative of a major aircraft manufacturer
16 and I think I have a right to ask him the premise for his
17 report and I am asking questions about wing life because I
18 want to go to wing life, wing strength, and wing attachments
19 and all of those kind of things. I know you contend they
20 don't matter and I know you contend they aren't relevant
21 and they don't connected with one another. I do think that
22 I have the opportunity for or ought to have the opportunity
23 to try. Maybe somebody else will say they do. I just want

1 to get some data from this witness.

2 MR. DUBUC: I am not aware of any contention
3 by the plaintiffs that the wings came off any differently
4 than our contention. Is there such a contention? That is
5 a new one.

6 MR. McMANUS: That is not the point. He told
7 us the structural integrity of the plane and construction
8 of the plane is done as a whole, that you don't just build
9 different parts and then at the end put them together. It's
10 all put together with one whole design in mind. He has
11 given us a new report indicating his opinion.

12 MR. DUBUC: No, Mr. McManus. Are we going to
13 have two attorneys on this issue?

14 MR. LEWIS: Surely you don't object to an
15 enlightenment from Mr. McManus?

16 MR. DUBUC: I would be glad to hear it.

17 MR. McMANUS: He has given us a new report which
18 he says was completed within the past month or so which
19 indicates his opinion how the plane broke apart. If the
20 plane has a hole, and he talked in there about the wings
21 coming off and we have diagrams from the defendant which
22 you wish to use that show the wings flying off and talked
23 about how they flew off today, we are certainly entitled

1 to find out his premise as to why the wings fell off. If
2 in his new capacity as Chief Project Engineer for the new
3 wing structure he's got information, which he certainly
4 should have, he's got to have the historical information
5 about the whole wing assembly from the time the plane was
6 first put together as part of his opinion as to how this
7 plane broke apart. We're certainly entitled to get that
8 information. It all flows from the testimony he's given
9 today.

10 MR. LEWIS: And we seek to impeach it if we
11 can.

12 MR. DUBUC: Let me respond to Mr. McManus, if
13 he is speaking for you.

14 First of all, there has been no testimony that
15 the airplane, including wings as put together, those
16 questions were directed to the fuselage this morning and
17 the hull. Secondly, you may want to ask him that, I don't
18 think the wings are constructed as part of the fuselage.
19 I am sure you will find they are put on after. Secondly --

20 MR. McMANUS: You missed the point.

21 MR. DUBUC: Let me finish now. Secondly, I do
22 not believe that this is any new position. It's a new
23 report but not a new position. Mr. Edwards was in the same

1 position last year when he testified.

2 MR. LEWIS: Are you going to let me ask the
3 questions?

4 MR. DUBUC: I am not going to let you go forever
5 and ever.

6 MR. LEWIS: Just tell me, be merciful, if you
7 don't want me to ask the questions, we will seek the Court's
8 permission to do so. If on the other hand, let's stop all
9 of this collaboration and get on with it.

10 MR. DUBUC: It's wing life, are you interested
11 in wing life?

12 MR. LEWIS: I want to get to wing strength and
13 the descent attachments, but I have a right to go, however
14 screwy you think it is, to what I believe to be a reasonable
15 way of proceeding.

16 MR. DUBUC: No, if we're going to a wing life
17 problem and all of the business that has previously been
18 covered on Proxmire's committee --

19 MR. LEWIS: Let's go see the Judge, Mr. Dubuc.
20 I can't see paying for all of this record. It's ridiculous.
21 Make your decision.

22 MR. DUBUC: I am going to make an objection as
23 we go along and you go ahead and we will finish the record

1 and then we will go down and strike it.

2 MR. LEWIS: Fine.

3 MR. DUBUC: So we're agreed we're going to take
4 this record down to the Judge?

5 MR. LEWIS: I don't object to that at all.

6 MR. DUEUC: Let's go.

7 MR. LEWIS: I would do anything to preserve it.

8 MR. DUBUC: I am going to let you finish with
9 Mr. Edwards and I am going to make my objections.

10 MR. LEWIS: That is an orderly way to do it.

11 BY MR. LEWIS:

12 Q Now, Mr. Edwards, what was the goal of the wing
13 life?

14 MR. DUBUC: My objection is irrelevant as
15 previously testified to.

16 THE WITNESS: Well, I am sure that two or three
17 years ago I could recall that from memory, and I am really
18 hesitant now to say that I can remember that amount of
19 detail with all of the other water that has gone under the
20 bridge and all of the other data that I have had to review
21 and assimilate in a period of time, I really can't recall.
22 That was a goal written in the mill specs and I can't recall.

23 Q What did the Air Force contend the goals for

1 wing life was?

2 A I guess I just don't recall the detailed number
3 of hours discussed.

4 Q Was it a precise number of hours?

5 A I am sure there was. As I stated previously, I
6 really was not directly involved in that structural design
7 and therefore it wasn't part of my job to know.

8 Q I understand that.

9 Let me ask you this then, did you examine at
10 any time prior to forming your opinions on what happened,
11 how the wings behaved, when they detached, in other words
12 the accident scenario? Did you review the structural
13 information that was available about the wings and the
14 wing attachments?

15 A In my opinion?

16 Q Just firstly, you did or didn't.

17 MR. DUBUC: Are we off wing life now?

18 MR. LEWIS: We're going to get into it.

19 MR. DUBUC: Your question shifts, are you asking
20 him if he reviewed the wing life problems which he says he
21 does not remember.

22 MR. LEWIS: He says he doesn't remember the
23 wing hours, I don't know that he doesn't remember the wing

1 life problem. Maybe he doesn't.

2 MR. DUBUC: He said he doesn't remember the
3 hours. Are you asking a question on strength?

4 MR. LEWIS: Mr. Dubuc, please let me ask my
5 questions.

6 MR. DUBUC: I told you I am objecting to the
7 relevancy and the form.

8 BY MR. LEWIS:

9 Q Would you answer the question, please.

10 A I will have to give you the same answer and
11 same reason as before, because in my opinion the wing
12 structure was not relevant to the cause.

13 Q But the answer is that you did not review the
14 structure of the wing attachment, is that correct, in
15 preparing your opinion about this accident?

16 A My answer was that I did not review it because
17 it was not relevant.

18 Q I understand that. I appreciate it, you didn't
19 think it was relevant. I didn't hear you say the first
20 time, I didn't hear, I want to make sure the record is clear.
21 Did you review wing fatigue, metal fatigue, in connection
22 with your analysis of how this airplane broke apart at any
23 time?

1 A I don't recall any. I would like to state that
2 whatever that reliability is or unreliability as you would
3 choose to call it has not been sufficient for the Air Force
4 to want to invest any time or money to improve it.

5 Q The radar altimeter is the one that is reported
6 on the MADAR, is that not correct?

7 A I am not really sure about that. I am sure
8 that the central air data computer altimeter is reported
9 on the MADAR. I don't believe, I am not sure about the
10 radar altimeter.

11 Q Which altimeter is the one that was reported
12 on the MADAR that you used to get your height calculations,
13 can you tell me that?

14 A I believe that one comes from the central air
15 data computer.

16 Q Are you sure?

17 A I am fairly sure, but.

18 Q I just want to know whether you're prepared
19 to stand on it as a representative of Lockheed. If you
20 know it, I am not really quarreling with you. If you don't
21 know it, I need to know that.

22 A I would rather hedge that answer, I would not
23 be absolutely totally positive.

1 MR. DUBUC: Note my objection to form.

2 THE WITNESS: Same answer, I did not review it
3 because it was not relevant.

4 MR. LEWIS: Off the record.

5 (Discussion off the record.)

6 MR. LEWIS: Back on the record.

7 BY MR. LEWIS:

8 Q Are you familiar, sir, with any history of
9 problems with the altimeter, radar altimeter on this airplane?

10 A Nothing specific except that any sophisticated
11 electronic system, due to its sophistication and advancement
12 of the state of the art, that brings about reliability
13 problems and the radar altimeter falls in that problem
14 category of having failures.

15 Q Was there a reliability problem with the radar
16 altimeter?

17 A Nothing is ever as reliable as you would like
18 it to be. I don't recall what the reliability of that
19 system is. I am sure it could be -- people would like to
20 have it better.

21 Q I understand. Well, there were specific
22 complaints about the Air Force, about the reliability of
23 the radar altimeter, was there not?

1 Q It could be the radar altimeter, am I right?

2 A It could be, but I don't think it is.

3 Q What is the degree of air with the variation
4 of air in all of the altimeter systems on that airplane
5 by altitude?

6 A I don't recall the exact accuracy of the MADAR,
7 the record that is on MADAR is recorded and it has a --
8 they call it a gate that the altitude has got to change
9 some 50 or 55 feet before it will stop recording that
10 altitude and record the different higher or lower altitude,
11 55 feet increment recordings.

12 Q Now in the radar altimeter, the plane does have
13 a radar altimeter?

14 A The aircraft has two.

15 Q Two radar altimeters. Are they redundant?

16 A They figure into the overall redundancy. They
17 figure prominently in the landing system, in its importance
18 really, that comes in at very low altitude when the aircraft
19 is coming in to land in adverse weather.

20 Q Do they both perform the same function?

21 A Yes, they do.

22 Q Now the design specs, what percentage of air
23 is permitted below 100 feet in the radar altimeter?

1 A I really don't recall from memory.

2 Q Do you know what design air, if any, is permitted
3 below 100 feet and below 5,000 feet?

4 A I don't recall the specific numbers. I am sure
5 I knew intimately at one time, I just don't recall.

6 Q What design variations, in other words, is
7 permitted or air is permitted by the design from 5,000 feet
8 to 20,000 feet?

9 A Same answer, I just can't recall that from
10 memory.

11 Q Do you know anything about -- the answer would
12 be the same above 20,000 feet?

13 A Yes, right.

14 Q But there is a percentage of air, isn't there?

15 A There is a recognized percentage of air on any
16 instrument, of course, and that is no different.

17 Q Is there a percentage of air in the other
18 altimeter, the non-radar altimeter?

19 A The central air data computer, any instrument
20 must obviously have some recognized state of the art air.

21 Q What is the percentage, would you tell me again
22 what you call that particular altimeter, not the radar one
23 but the other one?

1 A It's part of the central air data system.

2 Q The central air data system.

3 A Central air data computer which does many, many
4 functions other than just calculating and providing the
5 altitude.

6 Q How does it arrive at its understanding of
7 altitude, what process does it use, is it a barometric
8 system?

9 A It derives its data from a barometric system,
10 from a Ram air system.

11 Q It is essentially a barometric system?

12 A A barometric system, yes.

13 Q And I understand that it may go through a
14 computer, but --

15 A It's a function of the air pressure, yes.

16 Q As opposed to radar, which is a different
17 method?

18 A That is right.

19 Q And do you know the percentage of air in that
20 central air data computer?

21 A No, it's been some 15 years since I really was
22 intimately involved in that. I just don't recall the detail.

23 Q Did you look that up when you made your report

1 on the altitude of the airplane at different times?

2 MR. DUBUC: You mean the MADAR stuff?

3 BY MR. LEWIS:

4 Q Yes.

5 A You mean the amount of air that could have been
6 in the altitude?

7 Q Yes. Did you consider that when you made your
8 report, that the altitude was, whatever it was in and you
9 reported at different times and different stages, of course?
10 I just want to know if you considered that when you wrote
11 your report?

12 A I guess we all accepted the fact that there
13 were no written writeups, maintenance writeups that would
14 lead us to not believe that that altitude information was
15 anything other than what would be read on any normal aircraft

16 Q Could it have been broken, couldn't it?

17 MR. DUBUC: You want him to speculate?

18 MR. LEWIS: No, I want to know from the witness
19 if it might not have operated correctly.

20 THE WITNESS: There is no reason to believe
21 that it was not operating in a normal manner for that
22 aircraft.

23 BY MR. LEWIS:

1 Q There have been instances where it did, correct?

2 MR. DUBUC: You mean other than this airplane?

3 BY MR. LEWIS:

4 Q Yes. Isn't that right?

5 A There have been instances in which -- oh, yes,
6 they can fail, if that is your question, but in this
7 particular accident, there was no reason, no writeups nor
8 reason to question that the data recorded was anything other
9 than what would be experienced on any normal C5-A or any
10 other aircraft.

11 Q Now did you consider when you wrote your report
12 and discussed the different altitudes, did you make the
13 chart showing the MADAR altitude reports?

14 MR. DUBUC: You're talking about the chart we
15 were using now?

16 MR. LEWIS: Yes.

17 THE WITNESS: Okay, I did.

18 BY MR. LEWIS:

19 Q You did make that?

20 A My Art Department.

21 Q Under your direction?

22 A Under my direction, the data from the previously
23 supplied MADAR data that is part of all of the reports we

1 have been talking about for years and that, as reproductions
2 of it, yes.

3 Q In writing that exhibit, did you consider the
4 error that, the design error?

5 A No, as I stated previously, there was no reason
6 to doubt there was anything out of the ordinary.

7 Q I am not talking about broken, there is a
8 variation of air within the design parameters, is there not?

9 MR. DUBUC: You're talking about D-1215?

10 MR. LEWIS: Yes.

11 THE WITNESS: There is a recognized allowable
12 air in any system.

13 BY MR. LEWIS:

14 Q I want to know, did you consider that air?

15 MR. DUBUC: He answered the question.

16 THE WITNESS: This is preproduction of what is
17 in the MADAR.

18 BY MR. LEWIS:

19 Q So you did not consider the variations of air
20 which maybe existed in the system and still be within the
21 design parameters?

22 MR. DUBUC: I object to the form, he told you
23 that.

1 BY MR. LEWIS:

2 Q Is that correct?

3 A I previously stated there was no reason to doubt,
4 there was anything out of the ordinary. We merely put in
5 art form what had been previously supplied as part of the
6 MADAR.

7 Q Now how many hours were -- strike that.

8 At the time of this accident, had the load limits
9 of the C5-As been reduced by the Air Force?

10 A There were limitations on the number of pounds
11 of cargo that could be carried as a part of a program to
12 extend the wing fatigue life.

13 Q And that was reduced to half its maximum capacity,
14 is that correct?

15 A I don't recall exactly what those load limits
16 were.

17 Q Is that approximately correct?

18 MR. DUBUC: He just said he doesn't recall.

19 BY MR. LEWIS:

20 Q You don't. When was it reduced by the Air
21 Force, before this accident?

22 A Sometime before the accident.

23 Q Now a number of C5-As had been found to have

1 structural deficiencies in their wings, had they not?

2 MR. DUBUC: Note my objection.

3 MR. LEWIS: Prior to this accident.

4 MR. DUBUC: We're going back to that again?

5 THE WITNESS: Well, as I said before, that
6 was not my immediate responsibility.

7 BY MR. LEWIS:

8 Q Did you say you didn't know that?

9 A No, that wasn't my answer.

10 Q I am asking you.

11 MR. DUBUC: You're asking him whether he knows
12 or doesn't know the details?

13 THE WITNESS: I do not know the details of that.
14 It was not in my immediate -- I was merely on the fringes
15 as an outsider and did not feel it my responsibility to be
16 intimately knowledgeable and I still don't.

17 BY MR. LEWIS:

18 Q I am not asking intimately, do you know exactly
19 or approximately how many -- what percentage of C5-A wings
20 were found to be deficient on inspection?

21 MR. DUBUC: Note my objection. I don't know
22 what you mean by deficient.

23 BY MR. LEWIS:

1 Q Structurally deficient.

2 A I am not knowledgeable of any deficiencies
3 other than this difference of opinion between Lockheed and
4 the Air Force as it regards fatigue life.

5 Q Are you familiar with the history failure with
6 engine mounts on the C5-A prior to this crash?

7 MR. DUBUC: Note my objection.

8 THE WITNESS: Sometime prior to this accident,
9 several years prior to this accident, there was a fatigue
10 problem on one of the pylon aft bulkheads or the aft pylon
11 box attachment which resulted in a design change and which
12 resulted in modifications of all pylons for all aircraft.
13 That modification was subsequently tested and met and/or
14 exceeded the fatigue life requirements and that modification
15 was incorporated on all aircraft years prior to this
16 accident.

17 BY MR. LEWIS:

18 Q And then the pylons on a C5-A, the C5-A 218
19 were not original design, but were modified, is that correct?

20 A Those pylons on that aircraft, as well as other
21 aircraft, had this design change incorporated and this is not
22 abnormal for any aircraft to undergo modifications once
23 it's been produced and delivered.

1 Q Had there been a history of problems with
2 landing gear prior to this accident?

3 MR. DUBUC: Note my objection.

4 THE WITNESS: Just as we discussed on the radar
5 altimeter a moment ago, the C5-A has a very complex landing
6 gear and it has to do many functions. It has to check
7 crosswinds, caster, all those things are not normal to
8 record for a commercial aircraft; because of this complexity,
9 there were problems with that complexity. Normal mal-
10 functions of equipment, et cetera, none of which had really
11 caused any great problem. There was a maintenance problem
12 but it was never really significant hazard to the aircraft.

13 BY MR. LEWIS:

14 Q Well, did you take the landing gear problems
15 into consideration in the history of landing gear problems
16 in detail when you considered the data and made your report
17 and gave your opinion as to how the airplane broke up?

18 MR. DUBUC: Note my objection.

19 THE WITNESS: The answer to this question is
20 similar to many of the last, the crew statements were to the
21 effect that the landing gear was down and locked prior to
22 the initial touchdown and therefore we did not consider
23 any relevancy to any landing gear, past history or anything.

1 It was not relevant, it was down and locked.

2 Q So you did not consider any problems, any
3 history of problems with landing gear in arriving at the
4 conclusions that you arrived at in your report, is that
5 correct?

6 A That's absolutely correct because they were not
7 relevant.

8 Q Did the airplane ever have a wheel fall off
9 prior to this crash? I don't mean this airplane, I am
10 talking about the C5-A.

11 MR. DUBUC: Note my objection.

12 THE WITNESS: I guess every airplane ever built
13 has a wheel fall off, sooner or later, because the nut on the
14 cotterpin is going to fall off and it happens to every
15 airplane in the world and will continue to happen, and yes
16 it did happen on the C5s in the past.

17 BY MR. LEWIS:

18 Q How many times?

19 A I know of two or three cases, but I am sure
20 that despite all that can be done, it eventually will
21 happen that someone is going to leave that axle nut off
22 or leave off the cotterpin or the device that is equivalent
23 to the cotterpin and the wheels will fall off.

1 Q Was there a cotterpin on this airplane?

2 A It performs the same function, I merely used
3 the term cotterpin.

4 Q I didn't think there was one.

5 A There is not a cotterpin, per se, there is a
6 locking device and the locking device includes two, two
7 screws when turned in and locked properly. Now you have
8 two methods of keeping that wheel from falling off. Someone
9 must turn in those two screws, screw them down, you don't
10 know, if you don't you will lose a wheel undoubtedly, no
11 doubt about it.

12 Q On one of the early test flights a wheel came
13 off on a C5-A, did it not?

14 A Not a test flight, no.

15 Q On a demonstration?

16 A Not on a demonstration flight.

17 Q I have seen a television program in which the
18 C5-A was flying for a group of distinguished visitors, the
19 wheel was rolling along the runway.

20 MR. DUBUC: I will object to the observations
21 of the television program unless you want to see if he saw
22 it.

1 Q Did you see the same program?

2 A I did not see the program.

3 Q You have seen the film that shows the wheels
4 rolling down the runway?

5 A I don't believe I have.

6 Q Maybe I can get it.

7 MR. DUBUC: Good. We will argue whether you
8 can use it.

9 BY MR. LEWIS:

10 Q Are you familiar with the incident --

11 A I know of the incident, probably the one you
12 have in mind.

13 Q Would you describe it?

14 MR. DUBUC: Objection.

15 How can he describe it if he hasn't seen it?

16 MR. LEWIS: He knows of the incident. I want
17 him to describe the incident, not the program.

18 MR. DUBUC: He didn't see the incident.

19 MR. LEWIS: He said he is familiar with it.

20 MR. DUBUC: Is this from the standpoint of
21 reading it in the papers?

22 MR. LEWIS: Whatever source he has.

23 MR. DUBUC: You want him to describe what he

1 read in the papers?

2 BY MR. LEWIS:

3 Q You didn't learn about it in the paper, you
4 learned about it, heard about it through company sources,
5 isn't that right?

6 MR. DUBUC: Note my objection.

7 THE WITNESS: I did see an article, I heard it
8 discussed at Lockheed or not, I don't know. But only on the
9 delivery flight of an aircraft to Charleston Air Force Base
10 very early in the program, yes, a wheel did go or come off
11 and rolled down the runway beside the aircraft.

12 BY MR. LEWIS:

13 Q That was an airplane that had been previously
14 maintained by the Lockheed Aircraft Corporation?

15 A Right, and I might add for the record that
16 there have been other cases of where the wheels have come
17 off of the C5-A that were maintained by the Air Force, and
18 other cases of 747s and DC-10s, and whatever, maintained
19 by the commercial airlines who are real super maintenance
20 people, there have been wheels that come off of automobiles
21 for the equivalent reasons, unfortunately it's something
22 that happens despite all design features that can be
23 accomplished on an aircraft.

1 Q Now the aircraft was originally designed to
2 land in rough landing areas, was it not, on unpaved road?

3 A Unprepared runways, that is true.

4 Q And the airplane was not authorized to land in
5 unpaved or unprepared runways at the time of this crash, was
6 it?

7 MR. DUBUC: Note my objection.

8 It's all been covered in seven or eight days
9 of testimony. Is this relevant to your thinking of landing
10 on unpaved runways?

11 MR. LEWIS: It wasn't paved.

12 MR. DUBUC: We of course didn't land on a runway.

13 MR. LEWIS: It wasn't paved either, it was a
14 field I understand.

15 MR. DUBUC: It was a rice paddy.

16 Do you want to ask him?

17 BY MR. LEWIS:

18 Q Was it designed to land in rice paddies?

19 A No, sir, I think the terminology is unprepared
20 runways, but it's still called a runway.

21 Q It's still a runway. It wasn't designed to
22 land in a field?

23 A No, not fields.

1 Q Pardon?

2 A Not fields, that is a hard thing to define.

3 Q I am talking about, when I say field, level
4 agricultural fields, not airfields.

5 A It's described in more precise terms, it's
6 described by the soil bearing ratio, CBR, et cetera, which
7 means a certain tightness of the soil you're involved in.
8 It's defined in terms of how much the aircraft would weigh
9 when it would land on that unprepared runway and of course,
10 the consideration, the speed of the aircraft as it would
11 touch down and et cetera.

12 Q Now when you wrote the report on how the airplane
13 broke apart, the one we have been discussing all the while,
14 Exhibit D-1298, did you have any written reports by a
15 structural engineer to assist you in this analysis?

16 A I don't know that I had any reports in my hand.
17 Of course I had prior knowledge of a lot of structural data
18 on the aircraft.

19 Q So you had no structural analysis from a
20 structural engineer, is that correct?

21 MR. DUBUC: He didn't say that.

22 BY MR. LEWIS:

23 Q Any written structural analysis from a

1 structural engineer?

2 MR. DUBUC: You want to let him finish?

3 THE WITNESS: My answer, I believe was that I
4 said I don't recall that I had those reports in front of me.
5 I did say that I had knowledge of such discussions, reports,
6 et cetera.

7 BY MR. LEWIS:

8 Q I want you to tell me first the names of the
9 engineers whose input you used, first, and then I am going
10 to ask you about what each one of them reported and what
11 parts you used. So tell me how many names of the engineers,
12 structural engineers that you relied on?

13 A Names of an individual who may have been involved
14 in their preparation of that data are a little hard for me
15 to come back by. When I say structural depth, that could
16 mean any of several people, many of several people. One
17 reference that I had in mind was some statements in the
18 accident report involving, I believe it's over in Section T,
19 engineering analysis where it discusses the flight from
20 lift-off until touchdown and a statement in that report
21 that mentions the landing weight of that vehicle at that
22 time and I don't recall the precise language.

23 The statement says if that landing weight, the

1 main gear would have been expected to fail if the sink rate
2 had been around 11 to 16 feet per second. That is in the
3 accident report. It's been talked about many times. I had
4 that fact in mind. Now, that statement was prepared in
5 1975, I can't really tell you who did that calculation. I
6 didn't.

7 Q Can you tell me the name of the persons?

8 A No, I can give you the name of a man in the
9 LAC Department at that time.

10 MR. DUBUC: He is trying to give you the names.

11 BY MR. LEWIS:

12 Q Let me explain, I just want names of the people
13 that you relied on. If you used that Section D about the
14 sink rate and you don't know who wrote Section G?

15 A T.

16 Q T as in Tom?

17 A Yes.

18 MR. DUBUC: He's also referred to D-2 marked
19 three years ago.

20 THE WITNESS: I can give you the name of the
21 man who was the head of the department that I talked to,
22 whether or not he did a calculation or some of his people,
23 I can't answer.

1 BY MR. LEWIS:

2 Q. Anybody else?

3 A. That is the only one that comes to mind.

4 Q. You can't think of the names of any other
5 structural engineers?

6 MR. DUBUC: You don't want his name.

7 MR. LEWIS: Is this the statement you're
8 relying on, is that right?

9 MR. DUBUC: He said he would give you the name
10 of that guy.

11 BY MR. LEWIS:

12 Q. What is the name of that man?

13 A. The name of the department manager?

14 Q. Yes.

15 A. Tom Disney.

16 Q. Did you consult Mr. Disney in writing this
17 report?

18 A. I believe I called him about that 11/16ths
19 feet per second.

20 Q. Any other part?

21 A. That is the only person that I recall talking
22 to.

23 Q. Did you talk to Mr. Disney about any other

1 aspect of Exhibit D-1298 except the sink rate?

2 A I don't believe so.

3 Q So the only structural engineer that you talked
4 to about this report was Mr. Disney and the reference was
5 to the sink rate?

6 A Mr. Disney is not a structural whatever, he is
7 a department manager.

8 Q He was the structural engineer, in any event?

9 A In the Loads Department, structural loads.

10 Q I understand. My question, the answer to that
11 is yes?

12 MR. DUBUC: What is the question?

13 BY MR. LEWIS:

14 Q My question is did you consult anybody else
15 other than Mr. Disney in the preparation of this report
16 or reaching the conclusions that you reached in Exhibit
17 D-1298?

18 MR. DUBUC: Consult anyone?

19 BY MR. LEWIS:

20 Q I am talking about structural engineers is the
21 topic we're on, except Disney, and I thought you said no.

22 MR. DUBUC: Let's see what he said.

23 THE WITNESS: I talked to Mr. Disney about that

1 sink rate, okay, and then there are some other calculations
2 I really didn't do myself. I had one of my engineers, as
3 far as I am concerned, it's my calculation, okay?

4 BY MR. LEWIS:

5 Q Please listen to my question, my question is
6 about structural engineers, I just said --

7 A I am absolutely trying to not mislead you,
8 okay.

9 Q I appreciate that, Mr. Edwards, and I am not
10 suggesting that you are. I am just trying to find out
11 whether you consulted any structural engineers other than
12 Mr. Disney and I thought you said no.

13 A The answer is no but I gave you the provisor.
14 One of my engineers performed the mechanical mechanics
15 of some operations and specifically in regard to that John
16 Stepp report. A couple of pages of data, I had him do the
17 calculations on.

18 Q Is he a structural engineer?

19 A A mechanical engineer.

20 Q Not a structural engineer?

21 A He is a mechanical engineer in our group.

22 Q That is above structural engineers?

23 MR. DUBUC: He is trying, he's giving you

1 another name and you have been talking about landing gear.
2 He throws out a guy that is a mechanical engineer for the
3 landing gear that did some calculations.

4 THE WITNESS: I am satisfied with myself as if
5 you are, I don't want to mislead you in any manner whatsoever.

6 BY MR. LEWIS:

7 Q It would be helpful if you answered the question
8 and then explain it if you need to.

9 A That is exactly what I am doing, Mr. Lewis.
10 I am trying to be as responsive as I can.

11 Q I appreciate that.

12 MR. DUBUC: If you will explain -- let him
13 explain, he will do the best he can.

14 BY MR. LEWIS:

15 Q Disney was the only structural and I emphasize
16 structural three times, structural, structural, structural
17 engineer that you consulted with in the preparation of this
18 report, is that correct?

19 A That is correct.

20 Q And the area that you consulted with Mr. Disney
21 was in connection with the sink rate, is that correct?

22 A The sink rate and landing gear, it's part of
23 your sink rate, et cetera.

1 Q But no other?

2 A Nothing else.

3 Q Now what other engineers did you consult in the
4 preparation of Exhibit D-1298 in the formulation of your
5 theories of how the airplane broke apart? In discussions
6 with Mr. Disney, who you mentioned.

7 A I don't know as I consulted with anyone in
8 preparation of this report.

9 Q This is all your work then?

10 A That is all my work, but again to try to be
11 totally responsive and bear with me --

12 Q I am willing to do that.

13 A -- the sequence that I have described in that
14 report are essentially what I described in Court testimony.

15 Q That is your report too, isn't it?

16 MR. DUBUC: You have asked him.

17 THE WITNESS: All of the time prior to that
18 testimony and during the accident report, lots of people
19 sat around and discussed theories. As far as consulting
20 for that report, I made no further consultations other than
21 Mr. Disney's. You understand that proviso?

22 BY MR. LEWIS:

23 Q I just want to make sure this is your work or

your theory or someone else's that you're repeating.

A It is my work.

Q So you did not have any other engineers other than Disney and the man that did the calculations, but that was a mechanical chore, I gather?

A. In regard to the structural aspect, in the record I have referred to other people's work, just as John Paul Stepp.

Q You didn't consult with Dr. Stepp?

A No, sir.

Q Did you consult with Dr. Turnbow?

A. Not in reference to preparation of that report, no, sir. I have talked to Dr. Turnbow, I sat next to him in this meeting.

Q. What did he say at the meeting?

A I don't recall all those kinds of things.

Q You recall anything he said?

A I don't recall anything specifically other than what I was describing, the sequence of events from rapid decompression, et cetera. Several people asked questions and I answered and I am sure that probably Dr. Turnbow was one of those. Nothing comes to mind.

Q What kind of data did you provide Dr. Turnbow?

1 A I don't know that I provided Dr. Turnbow anything
2 directly or anything that I would prepare, of course, I would
3 give to Mr. Dubuc. I believe that, and it's my impression
4 that Dr. Turnbow asked for certain pages to be reproduced
5 out of the maintenance tech orders, pictures of airplanes,
6 things like that because I had the original of the document
7 that I would reproduce at Lockheed, send it to Mr. Dubuc,
8 and whether or not he sent it to Dr. Turnbow, I don't know.

9 Q In terms of -- he asked for certain other
10 maintenance tech orders?

11 A Pictures out of the maintenance tech orders.

12 Q Diagrams, you mean?

13 A Pictures of airplanes and plan views, elevation
14 views, things like that, it would include the wing width,
15 fuselage length, things like that.

16 Q When you were in --

17 MR. DUBUC: So the record is clear, you're
18 referring to things like D-1217 and D-1216?

19 MR. LEWIS: I don't have them memorized.

20 MR. DUBUC: Is that what you're talking about?

21 THE WITNESS: These kinds of pictures, sketches,
22 right out of the tech order.

23 BY MR. LEWIS:

1 Q This is a technical manual for the airplane,
2 you mean?

3 A Yes, I believe those came out of the one,
4 C5-A-9 loading manual.

5 Q A loading manual?

6 A I am not positive, I believe some of those,
7 maybe all of them came from the one C5-A-9 which is a
8 technical manual on a cargo loading kit that you put in
9 the aircraft for certain emissions and et cetera.

10 MR. LEWIS: Did you furnish those to us at an
11 earlier time?

12 MR. DUBUC: The technical manuals, as far as
13 I know, go all of the way back.

14 MR. LEWIS: I think our people were refused
15 access to them.

16 MR. DUBUC: No, that is absolutely not so, no,
17 sir.

18 MR. LEWIS: Yes.

19 MR. DUBUC: And besides you have copies of all
20 of these documents now.

21 MR. LEWIS: I don't think I have to look at it
22 if I didn't have an opportunity to get them earlier.

23 MR. DUBUC: As far as I know, the technical

1 manuals were produced.

2 MR. LEWIS: The record will establish whatever
3 it is.

4 MR. DUBUC: I can remember lots of testimony
5 about tech manuals that went for days and weeks.

6 MR. LEWIS: We will see whether the loading
7 manuals were produced.

8 MR. DUBUC: That is fine.

9 MR. LEWIS: Either they were or weren't, but
10 we will undertake to look. Will you try to undertake to
11 look to see when they were?

12 MR. DUBUC: Sure.

13 BY MR. LEWIS:

14 Q Now, Mr. Edwards, when the airplane was --
15 strike that.

16 When you were at Saigon, did you learn through
17 any sources as to whether or not the area in which the
18 C5-A-218 had been sprayed or prepared with a chemical
19 known as Agent Orange?

20 MR. DUBUC: Objection.

21 THE WITNESS: I have no knowledge of anything
22 like that.

23 BY MR. LEWIS:

1 Q I am just asking.

2 A I never heard it discussed.

3 Q Did you see where the -- I believe that the

4 Department of H.E.W announced either yesterday or the day

5 before that areas around airports in Vietnam had been

6 sprayed with Agent Orange and I am just curious as to

7 whether you had come into that knowledge.

8 MR. DUBUC: Note my objection.

9 THE WITNESS: I did not read that.

10 (Whereupon, a short recess was taken.)

11 (Whereupon, Mr. Mattingly left the proceeding
12 and was relieved by Ms. Cubbage.)

1 (Whereupon, at 3:30 p.m. Deborah S. Cubbage
2 reported the following:)

3 BY MR. LEWIS:

4 Q. Let me show you what appears to be the front of an
5 airplane, C5A, and ask you if you know why that picture was
6 taken.

7 MR. DUBUC: Well, maybe we better find out if he
8 has ever seen it before.

9 Is this from the package?

10 MR. LEWIS: Yes. That's from the group.

11 MR. DUBUC: Okay.

12 MR. LEWIS: I'll get a number for it.

13 THE WITNESS: I don't know why this picture was
14 taken.

15 BY MR. LEWIS:

16 Q. Does it show any defect in the aircraft?

17 A. Any defect in the aircraft?

18 Q. Is there any problem with the airplane that's shown
19 there?

20 MR. DUBUC: Well, you are not representing this is
21 the C5A involved in the accident.

22 MR. LEWIS: I don't think it is. It's part of the
23 pictures that we're settling on from the government. I don't

1 know what it is. I presume it's not part of the CSA in this
2 picture, but I don't know.

3 MR. DUBUC: You don't know whether it was ever
4 identified?

5 I didn't go to all of those depositions, so I don't
6 know whether anybody identified it.

7 MR. LEWIS: Pardon?

8 MR. DUBUC: And I don't know if anybody identified
9 it in any detail as to what it is.

10 MR. LEWIS: I never -- this picture was first
11 revealed to me a few days ago when we got this box of
12 pictures.

13 MR. DUBUC: I see. This is in the box of
14 pictures?

15 MR. LEWIS: Yes. So I have never seen it before,
16 so I have no idea what it means.

17 MR. DUBUC: Let's hold it up a minute.

18 BY MR. LEWIS:

19 Q. While we're waiting for him, let me ask you some
20 other questions.

21 Was the wreckage, the major part of the wreckage
22 that are photographed and used in the accident report ever
23 cleaned or washed in Vietnam before they were photographed?

1 A. No.

2 Q. There are some pictures in this group of what I
3 take to be tie rods. Do you know whether these are the tie
4 rods that were in the accident or not?

5 MR. DUBUC: Note my objection. We're back to tie
6 rods.

7 MR. LEWIS: I was just trying to --

8 MR. DUBUC: Okay. Go ahead.

9 MR. LEWIS: I'm just trying to understand this
10 picture business, Mr. --

11 MR. DUBUC: Is this part of the pictures?

12 MR. LEWIS: Yes, it's part of the new group of
13 pictures.

14 MR. DUBUC: It is?

15 MR. LEWIS: Yes.

16 MR. DUBUC: Tie rods. I don't recall a group of
17 tie rods being in this picture.

18 MR. LEWIS: It is.

19 MR. DUBUC: Do we have a number for it?

20 Are you representing that's part of the --

21 MR. LEWIS: I swear it is.

22 MR. DUBUC: Part of the --

23 MR. LEWIS: Pictures that we got from the aircraft.

MR. DUBUC: No. Part of the Exhibit 3 we were talking about this morning?

MR. LEWIS: Yes. Yes.

MR. DUBUC: It is?

MR. LEWIS: Yes. There are two tie rods.

MR. DUBUC: I don't think we got those pictures, but I can go ahead and look.

MR. LEWIS: I can probably find it in the index if you want me to, but anyway I will represent that it is.

MR. DUBUC: Well, let's see if its here.

MR. LEWIS: Oh, it is there. We don't have any pictures this size anyway, Mr. Dubuc. These are the only pictures that we have of this size.

MR. DUBUC: Okay.

THE WITNESS: I can't say within a real certainty that this is a picture from a tie rod from a 1A.

MR. LEWIS: I understand. You just don't know.

THE WITNESS: I cannot verify it.

MR. DUBUC: We can go ahead with the pictures.

Do you want to come back to the other one?

MR. LEWIS: Well, he said he doesn't know what--

MR. DUBUC: Alright.

BY MR. LEWIS;

5

1 Q. And that's a normal airplane?

2 A. Yes.

3 Q. And there are no cracks in it?

4 A. I don't know what airplane it is or where it is.

5 Q. Okay.

6 Let me show you this picture. And again, I don't
7 know the number of it. It shows a man hopping over a ditch.
8 That bears on the -- where is that on the terrain?

9 A. I really can't say. I would say it is in Vietnam,
10 but I can't even guess as to which side of the river you are
11 talking about here.

12 Q. Are you in that picture?

13 A. I don't believe so. I don't believe so.

14 Q. Does that look like the terrain in the vicinity of
15 the accident?

16 MR. DUBUC: Where? Do you want him to place that
17 as best he can with respect to the accident scene?

18 MR. LEWIS: The wreckage, yes, or the touchdown
19 the first time.

20 MR. DUBUC: Well, do you want him to look at the
21 diagram and do that or --

22 MR. LEWIS: If he can.

23 MR. DUBUC: Alright. Let's get the diagram.

1 I'm looking at Exhibit D-9, now, which is a diagram.
2 I don't know if that helps us at all.

3 THE WITNESS: No, it doesn't help me. The diagram
4 doesn't help me to locate this picture, because in all of
5 my travels around the accident site, I don't believe I ever
6 saw any terrain like this. There was this one slight
7 exception, and that's over the first impact point, the point
8 where one of the landing gears ended up over in the ditch
9 which we, you know, found a thousand odd feet from the --

10 BY MR. LEWIS:

11 Q. But you do not know where that is?

12 A. I do not.

13 Q. Alright. Now, let me show you this picture of the
14 interior of the troop compartment.

15 Have you seen that before?

16 Do you know that -- can you find the number of
17 this?

18 A. I believe I saw that picture last night.

19 MR. DUBUC: That's 194.

20 THE WITNESS: I believe I saw this picture last
21 night.

22 MR. LEWIS: Alright.

23 MR. DUBUC: What's the question?

1 BY MR. LEWIS:

2 Q. I just firstly asked you if you have seen it. You
3 looked at it last night, you say. You noticed the blisterine
4 of the material on the whatever you call the upper area above
5 the seats?

6 Excuse me.

7 I'm pointing at this area right here which is in
8 the upper righthand corner of the photograph.

9 A. Oh, I see some bubbles in that plastic
10 covering.

11 Q. Okay. What is that material?

12 A. That trim is covered with a vinyl plastic.

13 Q. Alright. And what is the material underneath it?

14 A. It's a sandwich material. And a sandwich material
15 is composed of a layer of fiberglas about a quarter of an
16 inch of foam, and I'm not sure what the foam is, and then
17 another layer of fiberglas on the other side. And the outside,
18 the exterior is covered with a thin sheet of vinyl.

19 Q. Is that vinyl polyvinylchloride?

20 A. I believe that would be right.

21 Q. And what is the adhesive used to attach that to
22 the -- did you say fiberglas sandwich?

23 A. Sheet of fiberglas. This would be cemented and

1 bonded to fiberglass.

2 Q. With what material?

3 A. I don't recall. I don't know.

4 Q. Do you know whether or not those bubbles were
5 caused by heat?

6 A. I would say they were not caused by heat.

7 Q. Do you know?

8 A. I was in the area, and there were not signs of
9 heat.

10 Q. Do you know -- that is the interior of the troop
11 compartment that you were in, right.

12 A. Right.

13 Q. Those bubbles were there when you were there?

14 A. Right.

15 I'm not saying that I paid that much attention
16 to the bubbles. It didn't upset me.

17 Q. Did you observe those bubbles?

18 A. I observed the whole thing.

19 Q. Did you observe -- did you note those bubbles
20 there?

21 A. I probably did, but they didn't make an impression
22 on me.

23 Q. You didn't make any record of it?

1 A. It was not relevant.

2 If you like, I will tell you why.

3 Q. Tell me why.

4 A. Okay. These bubbles -- and you can call them

5 bubbles; actually, it's an area on this fiberglass whereas

6 after a period of time the cement -- and I don't know what
7 technically happens to it -- but it dries out or something,

8 and it becomes unbonded. So you have got a little spot of

9 vinyl that's not bonded any more. And when the altitude

10 changes that aircrafts go through, that eventually ends up

11 -- I guess you can call it an air bubble. But that's a

12 fairly common thing to happen on this trim. And periodically

13 --

14 Q. On the C5A?

15 A. On this particular trim. And I don't know what
16 other aircrafts it's used in. But periodically, the people
17 on refurbishing go in there and reglue it, flatten it down.

18 Q. Do you know whether this condition existed prior
19 to the accident or not?

20 A. I can't say. But if it was like the other C5, it
21 did, it did exist.

22 Q. All of the C5's have that condition?

23 A. I can't say all C5's. I'm saying that some of them

1 do. You know, I haven't seen all of the C5's there are.

2 Q. How many do? Any idea?

3 A. Since I haven't seen them all, I can't really
4 respond to that. But it's a fairly common thing.

5 Q. Does Lockheed Aircraft Company have records of
6 that or anything additional?

7 A. I think there probably would be people at Lockheed
8 who are familiar with this characteristic.

9 Q. And you say it's a fiberglas sandwich with an
10 adhesive and vinyl on the top?

11 A. On the outside, yes.

12 Q. And are you also saying that heat will not do that?

13 A. The heat will not do that?

14 Q. Yes.

15 Will heat do that?

16 MR. DUBUC: You mean do it this way?

17 MR. LEWIS: Yes.

18 MR. DUBUC: Same condition?

19 MR. LEWIS: Yes, calls a condition like that.

20 MR. DUBUC: Are you talking about a degree of heat?

21 MR. LEWIS: Heat.

22 MR. DUBUC: Any heat?

23 MR. LEWIS: From a fire.

1 MR. DUBUC: From a fire.

2 Is that in the question?

3 MR. LEWIS: Well, let's just say the heat from
4 whatever source.

5 THE WITNESS: Oh, I guess really it's difficult to
6 answer. The heat might cause some disbonding even though I
7 don't know how much heat that is. But it does disbond in
8 the normal range of temperature so the aircraft sees. You
9 know, sitting out on the runway it sees 125 degrees. On
10 hot days with the sun shining on the fuse box, it gets kind
11 of warm in an inactive aircraft. But that's on the normal
12 aircraft today.

13 BY MR. LEWIS:

14 Q. It is also -- then heat from a fire or hot smoke
15 could also cause that condition; is that your testimony?

16 MR. DUBUC: You mean as it appears here?

17 MR. LEWIS: Yes.

18 MR. DUBUC: Without any other signs?

19 MR. LEWIS: Just like that.

20 THE WITNESS: I would assume that heat would have
21 other indications in addition to this. And I certainly did
22 not observe any other indications.

23 BY MR. LEWIS:

1 Q. I just want to know if you are saying it could not
2 do that, heat could not cause that.

3 MR. DUBUC: Well, he's told you about heat on a
4 runway.

5 Now, do you want him to address heat from a fire?

6 MR. LEWIS: Even if it isn't fire.

7 MR. DUBUC: Well, he started to address that when
8 you are saying the other indications. Do you want him to
9 finish that or what?

10 MR. LEWIS: He has already said that he doesn't
11 consider that there was any other indication. I understand
12 that.

13 MR. DUBUC: That's right.

14 THE WITNESS: There were no indications of any
15 heat in that compartment.

16 BY MR. LEWIS:

17 Q. What was the condition of the compartment when you
18 went in there?

19 A. I went in the compartment approximately two days
20 after the accident. And by the time I arrived, the seats
21 were still on the floor tied to the floor, but all of the
22 seat cushions had been removed. The seat cushions and seat
23 covers had been removed. And you had the bare metal seats

1 sitting there. Everything that was easily removable such
2 as the seats and seat covers were removed. Things have been
3 taken out of the galley, the refrigerator, things like
4 cartons of milk, etc. The milk had been consumed and the
5 carton dumped on the floor. Kind of messy in that respect.

6 The trim of which you see a picture there had been
7 pulled down to see what was behind it, I guess. I don't
8 know. And part of the trim was gone, has been removed and
9 gone.

10 The insulation -- the insulation bats that were
11 visible when you pulled down the trim, a lot of that had been
12 removed because its light. But things were in somewhat of
13 a disarray due to the pilferage at that time.

14 Q. What was the material the seats were made of, the
15 seat covers?

16 A. I couldn't tell you exactly. It was --

17 Q. Polyvinylchloride?

18 MR. DUBUC: The seats?

19 MR. LEWIS: Covers.

20 THE WITNESS: It would be the same material, in
21 fact, the same material that I'm assuming that all commercial
22 airliners use today. In fact, the seats were made by --
23 I can't give you the vendor's name now, but it was made by

1 someone who was in the business and manufactured the seats
2 for commercial aircraft. So I would assume he would use the
3 same material.

4 BY MR. LEWIS:

5 Q. Do you know -- was it a polyvinylchloride type
6 material.

7 A. I really can't say.

8 Q. What was the foam backing?

9 A. The film?

10 Q. The foam.

11 Wasn't there padding on the seat between the cover
12 and the metal?

13 A. Here again, I can't tell you in detail. I assume
14 that he would use the same materials he used for commercial
15 airlines.

16 Q. Well, I'm --

17 A. But I don't know.

18 Q. You know, it wasn't a commercial airliner, and I
19 just would like to know if you know.

20 MR. DUBUC: He just said he didn't know.

21 MR. LEWIS: Okay.

22 THE WITNESS: I don't know.

23 BY MR. LEWIS;

1 Q. Do you know how thick the feet padding was?

2 A. I could only give you a guess, and that's --

3 Q. I don't want a guess. Alright.

4 Do you have an approximate answer?

5 A. I would say approximately three inches. And that's
6 about the same as it is on a commercial airliner. And I'm
7 just saying that from my feel of leaning back against the
8 seat. There were fairly standard seats with some military
9 innovations in them, of course.

10 Q. They were not like in a commercial airliner, were
11 they?

12 Are you saying they were like the seat in a
13 commercial airliner?

14 A. I'm saying they had an awful lot of similarity.

15 Q. Some similarity?

16 A. I said an awful lot of similarity.

17 Q. Same width?

18 MR. DUBUC: Are you talking about first class or
19 coach on a commercial airliner?

20 MR. LEWIS: Let's start with first class.

21 THE WITNESS: First class. I don't think they
22 were as wide as a first class seat.

23 BY MR. LEWIS:

1 Q. Was wide as a coach seat?

2 A. I would say that they were maybe a little bit
3 in between the coach and first class as far as width is
4 concerned. And then again, this is an approximate. I
5 didn't measure the seats.

6 Q. Well, I just wondered if you knew.

7 You don't know, do you?

8 A. I don't know the precise width.

9 Q. Now, the -- it is your conclusion that the bulk
10 head in the forward section of the troop compartment was
11 displaced in the crash; is that correct?

12 A. The forward end, the forward end of the aft
13 troop compartment?

14 Q. That's what I'm speaking of.

15 A. There is no structural bulk head up there. There
16 are structural beams. But there is a bulk head there, but
17 it's a very light bulk head. It's intended to control air
18 distribution and not really a structural piece of structured
19 per se. The beams do the structural portion of it.

20 Q. Your conclusion was that it was when this separated
21 from the wing area, when that separation occurred, immediately
22 after the wings, that that left the front of the troop
23 compartment open; is that not correct?

1 A. Yes. This very light bulk head that I referred to
2 probably blew forward as a function of the rapid decompression,
3 because it's intended to do just that, in fact.

4 Q. So then when the wings section separated from the
5 aft troop compartment section, the aft troop compartment
6 would have been open from its forward end as it moved through
7 the air; is that not correct?

8 A. That is correct, yes.

9 Q. Now, how fast did you calculate the airplane --

10 MR. DUBUC: Did you say as it moved through the
11 air? I mean, are we talking about while it's on the ground?

12 MR. LEWIS: You heard my question.

13 THE WITNESS: We are on the ground when this is
14 open.

15 MR. LEWIS: I'm talking about the original impact
16 -- after the second impact.

17 THE WITNESS: After the second impact when the
18 plane separated, the forward end was open, true.

19 BY MR. LEWIS:

20 Q. Now, did you calculate the speed of the wreckage
21 as it moved across the ground at different points?

22 A. Well, I believe I have stated previously that the
23 calculations that I made were based on the total distance

1 that the vehicle travelled and the initial speed and the
2 final speed which was zero, and that I used an average for
3 the whole thing.

4 Q. So then you don't really know the different speeds
5 at any given time when the speed of the wreckage was moving
6 either through the air or on the ground after the second
7 impact; is that correct?

8 MR. DUBUC: Note my objection to form.

9 THE WITNESS: Well, you know, as I said, I used
10 an average.

11 BY MR. LEWIS:

12 Q. But an average would be incorrect most of the time,
13 wouldn't it, for the actual speed?

14 A. Well, the previous questions had to do with
15 average G-load vs. peak G-loads. And as I indicated in that
16 answer, I looked at these many cases in John Paul Stepp
17 report and looked at the variations in the peaks and the
18 averages on that and related it to this accident average.

19 Now, you could do the same thing with velocity
20 because velocity and the G-loads are directly related.

21 Q. When we're speaking of velocity, we're speaking
22 of speed, right?

23 A. Speed, right.

1 MR. DUBUC: So are you asking him for velocity?

2 MR. LEWIS: No, I'm just saying -- I'm saying you
3 used an average rather than attempting to calculate at any
4 given point; is that right?

5 THE WITNESS: The record states that I used an
6 average.

7 MR. LEWIS: I understand that. You have spoken
8 earlier on the subject.

9 I'm asking you right now in connection with this
10 report and the current state of your views.

11 THE WITNESS: I used an average. But then I
12 added that I calculated the peaks and valleys that would be
13 probable if this thing would follow the thing that John
14 Paul Stepp did on the G-load and then you can turn around
15 and relate the G-loads to velocity, which I didn't do but
16 which is possible.

17 BY MR. LEWIS:

18 Q. Did you calculate vertical G's at any time.

19 A. Well, right here today I indicated that I really
20 didn't calculate the G's, vertical G's; but at the first
21 impact, I did do some calculations, did evaluate some on-
22 site data, the way the land gear broke, etc., and came up

1 with a maximum G's that did not -- that did not exceed, which
2 was something like two G's or something like that.

3 Q. But that was at time of the first impact?

4 A. Right. And in the report it talks about the second
5 impact. And on the second impact the report states that
6 the vertical G's at second impact were essentially negative.
7 And it gives the reasons, the reasons being that the track of
8 the stubs of the gear made on the approach to the dike showed
9 no gradual enlarging or anything like that to indicate any
10 change in the flight path aircraft. It was essentially level
11 flight path.

12 Q. Tell me, did you measure the marks in the dike?

13 A. I did not physically measure the marks in the dike
14 while we were present.

15 Q. Did anybody?

16 A. I don't know.

17 Q. Do you have any measurements of those?

18 A. No. They're all photographs, but --

19 Q. You don't have any measurements available to you
20 and never have; is that correct.

21 A. Never did.

22 Q. So you can't tell me the length or width or depth
23 of those marks; is the correct?

1 A. Except from what you can get from the photographs.

2 Q. But you didn't -- you had an opportunity to measure
3 them while on the scene and did not; is that correct?

4 A. This is right. And while we were on the scene,
5 that type of information was not relevant to the cause of the
6 accident. And the photographic evidence for the record was
7 deemed sufficient for the purpose known at that time.

8 Q. Now, can you tell me how deep the marks were in
9 the dike? Do you know how deep they were?

10 A. As I stated previously, I did not measure it.

11 Q. Alright. And you don't know whether they were
12 of equal depth or varied in depth, do you, the marks in the
13 dike?

14 A. No. If I didn't measure it, I couldn't tell you
15 that. Okay. That's obvious.

16 Q. I understand that. I'm just trying to be as clear
17 as I can.

18 Now, do you contend the airplane hit the water
19 before it struck the dike?

20 A. Yes. The photographic evidence bears that out.

21 Q. Did you ever --

22 A. The aircraft or at least the stubs of the gears
23 were in contact with the water, and those tracks are evident

1 in the photographs that the Plaintiffs have already used in
2 court trial.

3 Q. Alright. Did you ever testify to that before?

4 A. Yes, sir, in court.

5 Q. Alright. And do you say the body of the aircraft
6 or the stubs of the landing gear?

7 A. It's my opinion the stubs of the landing gear.

8 Q. Alright. So the body of the aircraft did not hit
9 the water in your opinion?

10 A. There's no reason to really believe that.

11 Q. Okay. That's fine.

12 A. If it did, it was so slight that it really didn't
13 disturb the other vegetation. There are two very definitized
14 tracks in the vegetation on the approach side that way.

15 Q. You mentioned the stubs of the landing gear. Some
16 of the landing gear had wheels on it, did they not?

17 A. The forward main and the nose gear were still in
18 tact.

19 Q. Did they strike the dike?

20 A. In my opinion, they did, yes.

21 Q. So when you say stubs of the landing gear, did
22 the wheels touch the water in your opinion?

23 A. The wheels may have been skimming along the top of

1 the water, but not too deep because if the wheels had been
2 skimming the water, the tracks, the swath through the
3 vegetation would have been much wider than what those
4 photographs showed.

5 Q. So with respect to the water, the contact with the
6 water doesn't have any engineering significance; is that
7 correct?

8 A. It does have engineering significance. I will
9 level with you on that.

10 Q. Okay. What is that?

11 A. It's just the question that you previously asked;
12 and that is, did the fuselage of the aircraft strike the
13 water before the dike. My opinion is that it did not; or
14 if it did, it was so slight that it did not leave a clean
15 cut swath through that vegetation. So it is significant,
16 very significant.

17 Q. Significant meaning it did not?

18 A. Significant -- it tells you a great many things.

19 Q. What does it tell you?

20 A. Well, as I have just stated, the swath created by
21 those parts dragging through there -- first of all, the
22 swath was rather narrow, much less in width than a swath
23 that would have been left had the entire landing gear been

1 deeply submerged in that vegetation -- in the water, and
2 therefore in the vegetation on the approach side of the dike.
3 So that's very significant.

4 Q. How high is the dike?

5 MR. DUBUC: Wait a minute. Let him finish.

6 THE WITNESS: The other significance of that is
7 that the swath, the width of the swath allowing for normal
8 variations in vegetation patterns, the width of the swath was
9 essentially constant from the moment it is seen in the
10 photograph until it gets to the dike. It was essentially
11 constant. The significance of that is that the aircraft
12 was not coming in with a great rate of descend. If it had of
13 been a great rate of descend, the swath would have been at
14 an ever increasing widths, I assume.

15 BY MR. LEWIS:

16 Q. Anything else?

17 A. Well --

18 Q. I just want to know if there's anything else, draw
19 any other conclusions that you draw from that.

20 A. Well, I'm sure there are others, but none off the
21 top of my head right now, okay?

22 Q. How far was the dike from the river level?

23 A. I state approximately five feet.

1 Q. Did you measure it?

2 A. No. I'm just judging from the photographs. And I
3 did walk on that dike. But I did not measure that dike. I
4 didn't walk on it in that immediate area, but I did walk that
5 dike at least once.

6 Q. But you never did walk the dike at the area where
7 the aircraft struck it, did you?

8 A. I don't recall that I did.

9 Q. Alright.

10 A. Because --

11 Q. So you then would not be in a position to say from
12 personal observation on the scene how high it was?

13 A. As I stated previously, for the purpose of which
14 we were there, that information was not relevant at that time,
15 and we didn't measure it. Okay?

16 Q. I'm not criticizing you, Mr. Edwards. I'm trying
17 to find out whether you had an opportunity to personally
18 observe the heights of the dike at that location.

19 MR. DUBUC: He said he walked it.

20 THE WITNESS: I said I walked on it.

21 MR. LEWIS: He said he didn't walk on it as that
22 location.

23 MR. DUBUC: At that particular location --

1 THE WITNESS: From the photographs, there's not
2 reason to think it's different.

3 BY MR. LEWIS:

4 Q. But you didn't walk on it where it struck the --

5 MR. DUBUC: He said that. Your question was could
6 he estimate the height, and he has given you the two reasons
7 why he couldn't.

8 MR. LEWIS: I'm just saying from his personal
9 observation.

10 BY MR. LEWIS:

11 Q. Now, what was the composition of the dike?

12 A. The dike was composed of the same soil that the
13 farm land in that area and which is a -- there were normal
14 delta silt type soil, very black silty soil.

15 Q. Was it hard-packed?

16 A. It was not the type of soil that I guess is not --
17 I don't know whether it's clay soil or not. It didn't seem
18 to me any different from any ordinary soil that's dried.

19 Q. Yes, but was the dike packed hard?

20 A. Well, a dike obviously is man made. Okay. You
21 shovel it up there, and then it sits there for however long
22 a time.

23 Q. Maybe thousands of years?

1 A. I really don't know. But it gets all the normal
2 rain, etc.; and it's just normal soil for that area.

3 Q. Soil comes in a variety of forms. Some of it is
4 very hard, some of it is very loose. I'm just saying it was
5 hard-packed, wasn't it?

6 A. It's the normal soil they have in there.

7 Q. So you are saying it was not hard-packed; is that
8 what your testimony is?

9 A. I don't know what you would call it. As I said --
10 all I'm saying, is just normal farm land soil.

11 Q. But I'm trying to get the state of compaction.

12 You are an engineer. You understand what I'm
13 talking about, don't you?

14 MR. DUBUC: Well, you have just established that
15 he didn't take measurements. So I don't know how you measure
16 compaction.

17 BY MR. LEWIS:

18 Q. Well, did you try to determine how hard it was?

19 A. No, I did not, because as I stated previously,
20 that kind of information was not relevant.

21 Q. Alright. So you don't have any personal knowledge
22 as to how hard this soil was?

23 A. I could not give you the CPR rating of that soil,

1 no, siree.

2 Q. And you have no estimate of it?

3 A. No.

4 Q. Do you have any experience as a soil scientist?

5 A. No, sir.

6 Q. The purpose of the dike was ostensibly to hold the
7 bank of the river; is that not correct?

8 A. To hold the banks of the river and also in turn
9 to hold the water, the irrigation water on the other side.
10 There were two dikes there -- one larger dike to hold the
11 river out and then the water and then another smaller dike
12 to contain the water as it's carried to the various low
13 fields.

14 Q. Now, there were interior dikes that subdivided the
15 field, were there not?

16 A. Yes, there were.

17 Q. Did you measure how far apart they were?

18 A. How far apart?

19 Q. Yes.

20 A. You mean the dimensions of a plot of land that's
21 enclosed by a set of dikes?

22 Q. Well, that's what I mean.

23 It's my understanding that the airplane at the

1 second touchdown at some point, you contend, proceeded
2 across the ground, scooted across the ground.

3 A. Absolutely.

4 Q. I'm saying from the point that the airplane first
5 struck the dike to the point that the last piece of it came
6 to rest wherever, did you undertake to locate with any
7 precision the number of interior dikes that existed there
8 and where they were, how many there were, and their heights,
9 and anything, any quality about them that you can --

10 MR. DUBUC: Size?

11 MR. LEWIS: Size and that sort of thing.

12 THE WITNESS: No, I did not count the number of
13 dikes and I did not precisely measure the heights, widths,
14 lengths, etc. intermediate dikes that the aircraft would have
15 crossed. The -- a good idea of this can be had from studying
16 photographs of that whole area --

17 MR. LEWIS: I understand that.

18 THE WITNESS: -- and then also as augmented by a
19 knowledge of having been there and walked those dikes.

20 MR. LEWIS: I understand that. I'm trying to --

21 THE WITNESS: I did not measure it, no.

22 MR. DUBUC: Are you trying to give him the idea of
23 how far they are apart and whether they are bigger, smaller,

1 or whatever?

2 MR. LEWIS: Any other quality that he knows about.

3 THE WITNESS: Alright.

4 BY MR. LEWIS:

5 Q. Now, in the opinions that you have expressed both
6 in depositions, in your testimony, and in Exhibit D-1298, up
7 to this point in time, have you ever undertaken to count
8 the number of interior dikes that you say the airplane
9 proceeded past until different parts of it came to rest?

10 A. I never really sat down and counted them, per se.
11 I do have an awfully good idea of the size of those dikes
12 from having been on them and had to -- and trying to walk
13 on them. And the reason I say I have a good idea is because
14 as you walk those dikes, most of them you have to put each
15 foot in front of the other, because the dike is so narrow
16 that you can't just walk normally. You have to put your
17 feet in front like you are walking down a railroad track.
18 The dikes in most cases -- these little intermediate dikes
19 that enclose various plots of land were -- sometimes on top
20 of the dike is no wider than your hand, sometimes as wide
21 as two hands. But that's about it, because they don't
22 spend any more energy making that intermediate dike than they
23 have to, because they shovel up the earth and pile it up.

1 Q. You fell off them?

2 A. Fell off them and slid through and whatnot.

3 Q. Now, how many were there?

4 A. How many dikes?

5 Q. Yes.

6 A. Well, as I said previously, I don't know as I
7 really counted each and every dike.

8 MR. DUBUC: You are talking now the one foot
9 intermediate dikes?

10 MR. LEWIS: Whatever they were.

11 MR. DUBUC: You know --

12 MR. LEWIS: If you say one foot, foot and a half,
13 I don't -- I guess we can get somebody that knows something
14 about them.

15 BY MR. LEWIS:

16 Q. Do you know how many there were?

17 A. Raised dikes, there were probably a half a dozen
18 this this vehicle would have crossed. There were in addition
19 to the raised dikes, there were some areas where there were
20 -- depression in the soil where they really are ditching
21 away to carry water out or carry water to some other area.

22 Q. Were they small hillocks there?

23 A. No real hillocks, no.

1 And the depth of those dikes are, you know, you're talking
2 about a foot, foot and a half, something like that. And it
3 -- a dike is enclosed -- you know, it's wet, because it's
4 acting as a dam holding water, so --

5 Q. It's water tight, water won't flow past it.

6 A. I'm sure water would seep past it but at a slow
7 enough rate so the sun would dry it out and it wouldn't
8 disturb the other plot of land.

9 Q. They were hard-packed, were they not?

10 A. The point I want to make is most of those dikes
11 when we got there were standing in water and the dike was
12 wet. And therefore, it had very little resistance from --
13 if you would like to call it that -- if you were plowing
14 through it with a tractor, you would hardly know it was
15 there. It was a small dike in a swell.

16 Q. Did you undertake to test it or see -- did you
17 try to shovel it or did you try to move it in any way to
18 test it for compaction?

19 A. I really didn't. I kind of tested a couple of
20 them accidentally by stepping on it and the thing crumbling
21 and dumping me down in the water. But I didn't test it, per
22 se. But I do know they weren't much of a dike, because I
23 fell on them several times.

1 Q. I'm not talking about hills, but I'm talking about
2 rises in the land.

3 A. There were irregularities in the land, of course,
4 as there is in any farm land. Nothing is perfectly smooth.
5 And that is why I objected to the word "smooth" a while ago.
6 There were normal irregularities in that soil.

7 Q. What was the greatest change in elevation, sir,
8 from the base of the dike that the airplane struck at the
9 time of the second impact until the troop compartment, the
10 forward end of the troop compartment?

11 A. Well, from the river to the whole 2,000 ft., I'm
12 sure you are talking a matter of change in elevation of no
13 more than probably two or three feet --

14 Q. Alright.

15 A. -- because there were patches of water on both ends.
16 And the water is going to stand the same on both ends. So
17 it's some minor variations in between, but --

18 Q. Did the front end come to rest in water?

19 A. The front end came to rest in some vegetation.
20 There was water in that vegetation, yes. You had to step
21 from one patch of grass to another, and sometimes you would
22 go in the water when you stepped on the grass. It was
23 water on both ends.

1 Q. So there is water in the front end.

2 The front end was in a pool of water?

3 A. Not in a pool of water.

4 When you stepped out of it, there is grass. And
5 sometimes that grass would hold you and sometimes it wouldn't.
6 The grass on the front of the troop compartment was taller
7 than the grass on the aft end of the troop compartment.

8 Q. Was there mud all over the troop compartment?

9 A. There was mud splattered on the outside and the
10 top of the -- and on top of the troop compartment. And not
11 all over it. It's kind of a splatter type thing. Some
12 places it was heavier than others. Some places there was
13 none.

14 Q. But was it splattered from the front to the back?

15 A. There was some to the front to the back, yes.

16 Q. And was there mud splattered inside the troop
17 compartment?

18 A. There was not enough splattered inside to demand
19 any special attention. You kind of expect as the thing
20 is sliding through there there is going to be some debris --
21 straw, and stuff like that -- that would come inside but
22 nothing of any significance.

23 Q. Well, when -- but it was moving fast.

1 Was it moving fast enough that by the friction it
2 would cause the water to turn to steam if it passed through
3 any water.

4 A. I wouldn't think so.

5 Q. Pardon me?

6 A. I wouldn't think so.

7 What you have to bear in mind is this troop
8 compartment is sliding through. Initially, it's farther
9 above the ground, because the structure is still in the
10 process of eroding. And the further it went, the structure
11 eroded, and then the closer it got down to the ground.

12 Q. But there are -- in your view, there is a distinct
13 track from the point of impact to the place where the troop
14 compartment came to rest in a direct line; is that correct?

15 A. There is a distinct track, yes. The track varies
16 for the same reason I have previously mentioned, that
17 initially the separation point there is more structure under
18 that troop compartment and you get a different looking track
19 or even a wider track or maybe a disbursement of tracks. But
20 as it gradually wears down and there is less structure out
21 there, it's now closer to the ground, that the tracks move
22 in and match that structure.

23 Q. But there is a distinct track all the way from the

1 point of impact all the way to where the tracks --

2 A. The tracks around the servants -- all the way
3 through, but they do vary as according to the degree of
4 erosion of structure.

5 Q. And as a breakdown the dikes through everyone
6 that it goes through?

7 A. It went through the dikes and disrupted the dikes
8 and the water spilled or unless it was already there.

9 Q. Did it breakdown all of the dikes is my question,
10 between the point of impact and where the troop compartment
11 ended up?

12 MR. DUBUC: All the six dikes?

13 MR. LEWIS: However many there were. I didn't
14 know he said there were six.

15 MR. DUBUC: He said half a dozen.

16 THE WITNESS: I'm guessing there were six dikes
17 in addition to the ditches. There were several ditches,
18 cross ditches.

19 BY MR. LEWIS:

20 Q. Did it breakdown all of those dikes, however many
21 there were, as the wreckage passed through?

22 A. I believe that it did; but subsequently, those
23 dikes were re-dammed, and you know, built back up just as the

1 river dike was so that they could dry out that area as a
2 process looking through it and just getting around in that
3 area.

4 Q. Before you got there?

5 A. Repair work was done before we got there, yes, in
6 order to try to dry out the area to aid in the search for
7 parts.

8 Q. Can you see that in the photograph, the repair
9 areas?

10 A. It's more distinct on the large dike, the river
11 dike. The other dikes were, you know, still essentially wet,
12 still in the process of drying when we got there. And it
13 was kind of hard to tell in the smaller ones.

14 Q. But the tracks were --

15 A. The tracks were --

16 Q. -- open all the way?

17 A. Yes, and especially in the aerial photograph, some
18 of the color photographs, Plaintiffs' Exhibits we have used.

19 MR. LEWIS: Let's take a five minute recess if
20 that suits everybody.

21 (Whereupon, a short recess was taken.)

22 MR. LEWIS: That's all of the questions I have of
23 this witness at this time.

1 EXAMINATION BY COUNSEL FOR DEFENDANT
2 AND THIRD PARTY PLAINTIFF

3 BY MR. DUBUC:

4 Q Mr. Edwards, Mr. Lewis asked you questions about
5 various pictures and particularly a group of pictures that I
6 think were identified as Exhibit 3 to a deposition of an
7 air force witness, Major Walker. I believe those were the
8 800 or some odd pictures that were in Exhibit 3. And you
9 said you had seen some of those pictures; is that correct?10 MR. LEWIS: I believe he said he saw 80 percent of
11 those in the Clark Air Force Base in the Philippines and the
12 most or the rest of them in the United States.

13 MR. DUBUC: Is that right?

14 THE WITNESS: Yes, but I couched that answer by
15 saying that sometimes having seen all of these parts I might
16 say I had seen a picture and in reality I had seen the part
17 and to me they are one and the same.

18 MR. DUBUC: Okay. That's fine.

19 BY MR. DUBUC:

20 Q And so some of those pictures were taken in the
21 United States also; is that correct?

22 A Yes, they were.

Q And some of them were taken at Kelly; is that right?

1 A Some were taken at Kelly.

2 Q And were all of those, as far as your knowledge
3 of them, taken as part of the accident investigation by the
4 air force?

5 A Yes, they were all taken in conjunction with --

6 Q And there was a request or a question asked of you
7 as to whether you had asked for any of those pictures to be
8 taken and you said there were some; is that right?

9 A While on site I might ask the photographer to take
10 a picture of a certain part because I thought that might be
11 useful information, yes.

12 Q Now, you said you were the senior member of the
13 four Lockheed personnel that were technical consultants to
14 the accident board?

15 A Yes. That's correct.

16 Q And those are yourself, Mr. Lovelace, Mr. Current,
17 and Mr. Dobson; is that correct?

18 A That's correct.

19 Q All right. Now, to your knowledge, in connection
20 with that group's participation as advisors to the air force,
21 did you on behalf of Lockheed receive any prints or negatives
22 of any of those 800 pictures which are Major Walker's Exhibit
23 3 so that you had possession of them and could take them

1 away from the accident board's investigation?

2 MR. LEWIS: Excuse me. Is the question about he
3 or the whole group?

4 MR. DUBUC: I will take him first.

5 BY MR. DUBUC:

6 Q My question is: Did you ever have custody of those
7 pictures; or if you did not, can you tell us what disposition
8 was made of any pictures you saw?

9 A I never had custody of any of those pictures. I
10 did examine the pictures on the table as everyone did, but
11 they stayed in the air force's hands.

12 Q And did you take any of those pictures back with
13 you to Lockheed's plant in Georgia?

14 A No, sir.

15 Q And to your knowledge as the senior member of the
16 group Dobson, Current, Lovelace, and yourself, do you know
17 whether either of them, any of them, had possession, took
18 any of those pictures back to Lockheed?

19 A To my knowledge they did not take them back. And
20 in fact, they were instructed and, of course, knew the rules
21 that, you know, you don't carry anything back like that.
22 That's all air force. They're all very aware of that, and
23 I assume they complied.

1 MR. LEWIS: I just want to object. When he says
2 he assumes they complied, I don't know whether that is
3 evidence of the fact that they did.

4 MR. DUBUC: Well, I'm just asking of his knowledge.

5 MR. LEWIS: He can speak for himself and the
6 instruction he gave of what he things they knew, I guess.
7 Whether they did or not is another matter.

8 BY MR. DUBUC:

9 Q Now, sir, with respect to those pictures which are
10 Major Walker's pictures, you are also asked about a movie.
11 Did you ever actually see any movie?

12 A Never.

13 Q Did you ever have custody or control of any movie?

14 A No.

15 Q To your knowledge, did any of the other members
16 of that Lockheed group of technical advisors -- Dobson,
17 Current, and Lovelace -- either see the movie or have a
18 print or copy of it in Lockheed's possession?

19 A To my knowledge, no.

20 Q With respect to the pictures -- and Mr. Lewis
21 has shown you some -- we have some that we looked at and we
22 just want to ask you if you will take a look at these pictures.
23 I will just put them all in the record here. I'm going to

1 ask you if these pictures depict fairly and accurately what
2 you may have observed at various points of the accident scene.
3
4 And these are numbered 734, 735, 736, 737, 307, 741, 746,
5 745, 301, 339, 340, 341, 758, 74, 335, 763, 760, 196, 93, 761,
6 762, 757, 316, 250, 300, 189, 116, 296, 295, 294, 293, 187,
7 306, 292, 289, 290, 291, 208, 317, 85, 298, 318, 218.

8 Mr. Connors is saying 741 should be 741 or --

9 MR. CONNORS: 749 or perhaps 747. The number is
10 partially illegible.

11 BY MR. DUBUC:

12 Q I'm going to ask you to take a look at those.

13 My question is whether they represent things at the
14 scene that you saw fairly and accurately.

15 A Do you understand what I'm saying?

16 Q Yes.

17 A If there are any that don't, tell me that too.

18 Q All right. Give me a little while to look through
19 these.

20 Q Yes.

21 Well, why don't we take a minute.

22 MR. LEWIS: Off the record.

23 (Discussion off the record.)

THE WITNESS: I have trouble with one picture.

6

1 I think these pictures accurately depict the scene at
2 the accident that I personally observed except I have got one
3 peculiar picture here.

4 MR. LEWIS: What's the number?

5 THE WITNESS: Number 341, and it looks like a
6 double exposure on the same piece of film, something like the
7 same scene except from two different angles, because there
8 are too many things there.

9 MR. LEWIS: May I see it?

10 BY MR. DUBUC:

11 Q Other than that one.--

12 A Other than that one, I find no faults with these
13 pictures. I note some of these pictures are taken at
14 different points in time, so if you see a piece of structure
15 in one picture and look at it in another picture, it may
16 look exactly the same, because some pieces have been removed,
17 etcetera.

18 So except for that one, I find no --

19 Q Now, sir, with respect to these pictures, there
20 have been many many other depositions which went back into
21 some of the things that Mr. Lewis had asked you about, going
22 back to the liability stages of this case where the
23 depositions were taken a couple of years ago. If these

1 pictures had been available, would there have been any that
2 would have been of assistance to you in either formulating or
3 confirming some of the opinion or testimony that you
4 previously have given?

5 A Yes. I see some pictures in there that would have
6 allowed me to have proven beyond a shadow of a doubt some
7 of the things that I stated, which I kind of had to ask
8 everybody to accept on face value. And there were some things
9 in that picture which substantiate some of the statements I
10 made.

11 Q Okay.

12 A There are a few other pictures that give some
13 additional detail that maybe didn't show up some of the
14 larger photographs or some of the more distant photographs
15 I should say.

16 MR. DUBUC: Thank you very much.

17 MR. LEWIS: I have a few more questions on the
18 subject of the pictures.

19 FURTHER EXAMINATION BY COUNSEL FOR PLAINTIFF:

20 BY MR. LEWIS:

21 Q In discussing groups of pictures, we have already
22 talked about the ones that you saw at the Clark Air Force
23 Base in the Philippines and that were generated in the United

1 States, I believe you said at Clark and Kelly.

2 A You mean generated at Kelly?

3 Q At Kelly -- I'm sorry -- Air Force Base.

4 Now, did you have an opportunity to see the photographs
5 in the accident report itself, primary accident report?

6 A The primary accident report?

7 Q Well, whatever you call that as opposed to the
8 collateral report.

9 MR. DUBUC: You're talking about the sanitized
10 section?

11 MR. LEWIS: No. I'm talking about the unsanitized
12 section --

13 MR. DUBUC: Well, there are testimony on that you
14 know already, but go ahead.

15 MR. LEWIS: -- whatever that is.

16 BY MR. LEWIS:

17 Q Did you ever have an opportunity to see that?

18 A I have stated, you know, several times that I
19 never saw the total accident report but I could have seen
20 a picture that later on went into that report prior to the --

21 Q In the Clark or --

22 A Because I don't know what's in the report, and I
23 can't really say, so just so you understand.

1 Q I understand that.

2 Okay. Now, at some point I believe Mr. Dubuc had
3 obtained some pictures from Norton Air Force Base. Did you
4 see that group?

5 A I have seen a lot of pictures. I don't know --

6 Q Well --

7 A -- anything about what came from Norton Air Force
8 Base.

9 MR. LEWIS: Well, can we --

10 MR. DUBUC: He is referring to the portion of
11 the accident report that was released by the air force.

12 THE WITNESS: Oh, I saw that released accident
13 report, if that's what you're talking about, yes.

14 MR. LEWIS: Well, I'm not just talking about the
15 accident report but Mr. Dubuc has described the quantity of
16 pictures that he got from the air force from Norton Air Force
17 Base.

18 MR. DUBUC: No. I described pictures to you off
19 the record that you and me both obtained from Norton.

20 MR. LEWIS: I checked on that, and I find we did
21 not get any pictures in that group from Vietnam.

22 MR. DUBUC: In any event, if you did not, then
23 whatever pictures there were in that group are the pictures

1 that went with all of the tabs A through whatever they were
2 on the AAR that had been previously produced in this
3 litigation and was marked Exhibit D-4 and all the attachments
4 were in it.

5 MR. LEWIS: That's -- it's --

6 MR. DUBUC: That's what we're talking about.

7 MR. LEWIS: I'm not quarrelling with you, Mr.
8 Dubuc, at all. I'm just trying to clarify the record.

9 Those pictures didn't include the ones that we're talking
10 about here, did they?

11 MR. DUBUC: I don't -- have never compared them.

12 MR. LEWIS: I mean to the best of your recollection
13 they are not the same thing.

14 MR. DUBUC: If they do, it's another picture. It's
15 not those.

16 MR. LEWIS: I understand.

17 I mean, these pictures here, to me, anyway, unless
18 there is a, you know, a portion of one that may have been
19 used in, if I remember, some aerial photographs, but the
20 bulk of these pictures are unique to me very recently. And
21 I understand that your position is they're unique to you.

22 MR. DUBUC: That is correct.

23 MR. LEWIS: Is that correct?

1 MR. DUBUC: I think in looking at those pictures
2 again last night I see several pictures which are similar
3 to the ones that have already been marked in this litigation.

4 MR. LEWIS: The history of the pictures.

5 MR. DUBUC: But they are not the same pictures.
6 They are pictures like that.

7 MR. LEWIS: We requested pictures of the air force.
8 We were turned down in a freedom of information act request
9 originally, then they were withheld because of a claim of
10 privilege, and then we got a certain limited group of pictures.
11 We then undertook to try to get some pictures from the various
12 media -- United Press, as I recall, and there were some others.
13 But we got no ground level pictures from the air force of the
14 scene in Vietnam. I'm not talking about parts or anything
15 like that. We had some parts pictures, but I'm talking about
16 ground level pictures of the troop compartment and the
17 various configurations that we see in this group here. I
18 haven't counted them, but I understand there is a quad
19 number of different views of the troop compartment both
20 inside and outside here that are unique to us. And then --
21 so the pictures then that you got from Norton then were --

22 MR. DUBUC: Whatever was attached to the released
23 accident report.

1 MR. LEWIS: Just the released accident report?

2 MR. DUBUC: And those were produced, as I
3 understand.

4 MR. LEWIS: Okay. But I'm just trying to get the
5 record clear.

6 Is it your understanding they are substantially different
7 from these?

8 MR. DUBUC: Well, I haven't compared them, so I
9 don't know.

10 MR. LEWIS: Is it possible to do that and --

11 MR. DUBUC: For me to do that?

12 MR. LEWIS: Yes, or let us do that.

13 MR. DUBUC: Well, you can do that.

14 MR. LEWIS: I can do that with ours, but I don't
15 know whether we got the same things. That's what I'm saying.

16 MR. DUBUC: Well, if you got it from us, you got
17 it at the same time.

18 MR. LEWIS: We didn't get it from you. We got
19 it from the air force, not from you.

20 MR. DUBUC: I will have to check to see what you
21 got from us. But I know --

22 MR. LEWIS: I mean, we got a color picture of an
23 interior. And there are a few tabs that I have got that I

13

1 could give you, and I have forgotten the number. But I'm
2 talking about those were not part of the accident report. I'm
3 talking about we got a few pictures, and I can give you the
4 numbers. I don't remember the number, but it's five or six
5 of them, not many.

6 In fact, I have a letter here, if you want, probably
7 addressing that point. Let's see.

8 MR. DUBUC: Mr. Connors tells me there may have
9 been pictures in the collateral report as well, which I
10 guess you got.

11 MR. LEWIS: You produced for us?

12 MR. DUBUC: Well, I don't know whether we produced
13 the collateral report, but I --

14 MR. LEWIS: You didn't produce the collateral
15 report.

16 MR. DUBUC: -- know that you have the collateral
17 report, because you marked piles of it.

18 MR. LEWIS: We have the collateral report. We
19 don't have any ground level Vietnam pictures in the
20 collateral report.

21 You don't contend there are, do you?

22 MR. CONNORS: No.

23 MR. LEWIS: There were some aerial pictures.

1 MR. CONNORS: That's right.

2 MR. LEWIS: And we marked those as exhibits.

3 Just a minute, and I will come up with a letter. I
4 have a letter here, Mr. Dubuc, that describes the pictures
5 that we got from you. And this is dated July 30, 1979. And
6 you talked about --

7 MR. DUBUC: Can I see that?

8 MR. LEWIS: July 30th. Yes. I have the numbers
9 here. Just a second.

10 They are now Plaintiff's Exhibit 10. Okay. They are
11 the color slides, and they are Plaintiff's Exhibit 10. But
12 I don't believe you produced any other pictures to us.

13 MR. DUBUC: I don't know. I will look at that letter
14 if you want me to.

15 MR. LEWIS: Sure. I will be happy to have you
16 look at it.

17 MR. DUBUC: No. Okay.

18 Well, I will have to check. I don't know whether this
19 is the initial production of pictures or not.

20 MR. LEWIS: Well, my understanding is that those
21 are the only pictures that we got from you. If this is
22 different, I would very much appreciate it if you will let
23 me know promptly if you contend that you did give us any

1 other photographs.

2 MR. DUBUC: I see these were the subject of some
3 claim of privilege by the air force, so that tells me that
4 these were originally not produced because of that derivative
5 privilege claim we're obligated to directing that.

6 MR. LEWIS: That's not the point that I'm making.

7 My question is --

8 MR. DUBUC: What I will have to do is see whether
9 we have any other -- there was a whole group of production
10 statements of documents. And I don't know what pictures are
11 not --

12 MR. LEWIS: I understand.

13 So you will let us know whether there is anything other
14 than the ones described?

15 MR. DUBUC: I'm going to check. I think you got
16 a request to us something like that, so I will check.

17 MR. LEWIS: Okay. Fine. Good.

18 Now, do you know of any -- in our search for pictures,
19 do you know of any other pictures other than the ones we
20 have asked the witness about?

21 MR. DUBUC: Oh, sure. There are pictures that
22 have been marked as exhibits we haven't talked about today.
23 I think there are some pictures in those two accident reports

1 that we haven't talked about.

2 MR. LEWIS: Okay. But all of the pictures, I
3 believe, in any of the accident reports have been marked as
4 at least for identification as exhibits. That's my understanding

5 MR. DUBUC: I'm not sure they have all been marked,
6 but I'm sure they have all been looked at.

7 MR. LEWIS: Well, you know, just so that we can
8 try to get the picture situation in as clear as we can, I
9 think it's to everybody's benefit to --

10 MR. DUBUC: I understand that.

11 MR. LEWIS: I'm willing to cooperate with you in
12 any regard it takes to do that.

13 MR. DUBUC: So am I.

14 MR. LEWIS: I know you are.

15 MR. DUBUC: I just don't have committed to memory,
16 because I remember there are nine or ten --

17 MR. LEWIS: I did not expect you to have done so.

18 MR. DUBUC: As a matter of fact, Mr. Radcliffe
19 coordinated that, and I had asked him already to do that.

20 MR. LEWIS: Good. Excellent.

21 Hang on for just one second. I may have another
22 question.

23 BY MR. LEWIS:

1 Q Mr. Edwards, in response to Mr. Dubuc's question
2 you said that there were pictures that would allow you to
3 nail down, I believe you said -- I'm sorry if I don't
4 remember your precise words -- but in any event, establish
5 points that you haven't established otherwise for lack of
6 them.

7 A Substantiate.

8 Q Substantiate. Okay.

9 Can you tell me which of those pictures those pictures
10 are and what points you are speaking on, if you can.

11 MR. DUBUC: I think we're talking about -- well,
12 okay.

13 BY MR. LEWIS:

14 Q Well, first, tell me the point, and then maybe --
15 You have already given us the pictures.

16 A I have stated that, you know, repeatedly, that
17 at first impact the aft main gear broke due to the drag load,
18 not vertical load.

19 There is a picture in here that proves it beyond a
20 shadow of a doubt.

21 Q Okay. Which one?

22 A This picture right here.

23 MR. DUBUC: Which number is that?

1 MR. LEWIS: That is number 301.

2 BY MR. LEWIS:

3 Q And how does that picture establish that?

4 A Well, you notice right in the center -- let me
5 put my finger on it and then I'll turn my finger around --
6 almost exact geometric center of that picture, you see the
7 part that is broken --

8 Q Yes.

9 A -- jagged like a Coke bottle that breaks?

10 Q Yes. I see.

11 A Now, as the landing gear hangs down from the
12 aircraft and the strut is extended -- if my hand is the
13 gear and this is the strut hanging down here like this
14 (indicating) and as the airplane comes in like this
15 (indicating) and my hand being the gear hits this (indicating)
16 and this thing broke off right at this point (indicating),
17 snapped off, the extended part of that strut -- and that
18 strut moves up and down like a shock absorber on a car.

19 Now, let's assume for the purpose of discussion that
20 this gear broke due to the banging into the soil in the
21 vertical direction. If it had, this thing would punch right
22 on up through here and would have broken somewhere up in
23 here (indicating). It wouldn't have snapped off like that

1 (indicating).

2 Q Why?

3 A Well, you have got essentially a piston that
4 would have been pushed up in here. And as it's pushed up
5 in here, you have got two pistons. And the two pistons
6 would have been twice as strong, and it would have pushed
7 the thing out through the top.

8 Q Is the top the weakest part?

9 A In the vertical direction it is, yeah.

10 Q Isn't that the direction it's supposed to take
11 its greatest load, up and down?

12 A Yes. Yes.

13 Q So it's designed to take load from straight up
14 and down or it's designed; is that right?

15 A It's designed to take more vertical load than
16 drag load.

17 Q So it would take a greater force if the break
18 was going up and down?

19 A Yes.

20 Q But it could break up -- it could break going up
21 and down?

22 A But it did not. It broke in a drag direction.

23 It snapped off. As it was extended, it snapped off. And the

1 exposed portion of this, rather than pushing it all together
2 and then pushing something else out the side --

3 Q Are you saying the part that's there would have
4 been inside the cylinder if it collapsed?

5 A It would be a totally different failure mode of
6 this gear. And you would have found this vertical strut with
7 all of the other stuff still together and probably some other
8 part broken off.

9 Q And what difference does that make, if any?

10 A It substantiates my story that I have been saying
11 all along, that I personally observed this at the accident
12 site. And my observations proved it broke in this direction.
13 I stated that in Court testimony.

14 Q I understand that. I just want to understand
15 what difference that makes in the scenario.

16 A It substantiates what I said previously. I had to
17 ask people -- you're going to have to take my word for it.
18 I thought.

19 You don't have to believe me. Now, there it is. And
20 I'm grateful for this picture.

21 Q You haven't explained to me what difference it
22 makes.

23 A It substantiates my story. That's understandable

1 to me.

2 Q Okay. Thank you.

3 Now, what other picture did you mean -- what other
4 point is covered by these pictures that you --

5 MR. DUBUC: Well, there are some other points that
6 relate back to things irrelevant to the proceedings which
7 would have been relevant in the liability proceedings, for
8 example.

9 MR. LEWIS: I understand. I'm not arguing that.
10 I'm --

11 MR. DUBUC: You really don't care about those.

12 MR. LEWIS: I'm not disputing that. I'm willing
13 to stipulate that they would stay that if that's the
14 situation. I'm not quarrelling with that.

15 Is there any -- let me ask you this, Mr. Edwards.

16 MR. DUBUC: But he will go through it if you want
17 if it's relevant to these proceedings.

18 MR. LEWIS: I don't need to go up about the
19 question of liability.

20 MR. DUBUC: No, no.. But he will --

21 MR. LEWIS: I do want to touch on that --

22 MR. DUBUC: All right. Well --

23 MR. LEWIS: -- but not to discuss the liabilities.

1 BY MR. LEWIS:

2 Q There are a number of pictures that would relate
3 to the liability phase of the crash that you see in this
4 group -- is that correct, sir -- that were very material?

5 MR. DUBUC: That are material now, he can tell you
6 some more.

7 MR. LEWIS: I'm talking about that were material
8 to the liability phase of this case.

9 Is that correct, Mr. Edwards?

10 THE WITNESS: You are out of my line. You are
11 talking about the liability phase, etcetera.

12 MR. DUBUC: Okay.

13 MR. LEWIS: We will stipulate to that, okay.

14 MR. DUBUC: Leave it the way it is. We don't
15 want to get him off with that.

16 Now, if there is anything else in here that pertains
17 to this portion about --

18 THE WITNESS: Oh, about the sequence of -- well,
19 in general at the first impact point we have a relatively long
20 distance color photo that's been used. It's Plaintiff's
21 Exhibit so and so. These pictures closer to the ground and
22 some additional details along that flight path after the
23 thing, to me, definitely established that the air vehicle

23

1 itself was no longer in contact with the ground, but that
2 the parts that were broken off as a function of these gears
3 breaking and tumbling out and knocking the doors off that
4 surround the gear and some of the structure tied to that,
5 that these tumbling parts and also the tumbling earth that
6 was stirred up by this sweeping through this, that that
7 really is the pattern that was left on the ground down the
8 track. And also we see some of these photographs that show
9 evidence of the tumbling of these parts and gouges in the
10 earth made by portions of the landing gear tires, etcetera.
11 And in fact, later on you see the tire portion of the landing
12 gear down that track.

13 MR. DUBUC: Which picture are you talking about?

14 THE WITNESS: I'm talking about the first impact.
15 Do you want the specific picture?

16 MR. LEWIS: I don't need to know those right now.

17 THE WITNESS: Those are some of the things in
18 general. I --

19 BY MR. LEWIS:

20 Q Anything else?

21 A Okay. I have discussed previously in Court
22 testimony about the aircraft clipping of these trees in an
23 ascending manner. There is a side view of these trees --

1 MR. DUBUC: That's number 307.

2 THE WITNESS: 307.

3 -- that shows the first tree, the second tree, and the
4 third tree clipped off in an ascending manner.

5 BY MR. LEWIS:

6 Q In ascending?

7 A Ascending manner indicating that the aircraft --
8 you know, further substantiating that the aircraft really is
9 now airborne. It's not on the ground, and it came in and it
10 went like that (indicating). Okay.

11 Q But it did go along the ground for a period of
12 time, did it not?

13 A I have stated repeatedly it was in contact with the
14 ground only for a very short period of time.

15 Q How far?

16 A As these pictures showed as the tracks in the
17 earth showed, even in that long distance photo, the left
18 bogie touched first. It travelled a very short distance,
19 10 to 15 feet in that aerial photograph.

20 Q And broke off?

21 A And broke off. And the aircraft continued settle
22 slightly. And then there's a very narrow trench that
23 plowed up by that jagged strut. These pictures show that more

1 clearly.

2 Substantiation. All right.

3 Q Is that in dispute with what the --

4 A That's what I have always said. And now I have
5 a little bit more detailed photograph to prove to you folks.
6 You don't have to take my word anymore. It's there in the
7 picture.

8 And we have talked about this one (indicating).

9 Q The landing gear you mean?

10 A The broken landing gear on the drag.

11 Q What side of the landing gear is that? Which
12 landing gear is that?

13 A That is the right aft. And the left aft went off
14 the other side.

15 Q How can you tell that's the right aft landing
16 gear?

17 A I don't know. I can't recall right now, but in the
18 field we made that determination. I don't recall.

19 Q Is there anything that would indicate which that
20 was from the picture?

21 A I really can't recall right now.

22 Q So there isn't anything in the picture to indicate
23 which side it is; is that correct?

1 A I just --

2 Q Pardon me?

3 A It's been a long time. I know that we established
4 that was a right aft gear. And I don't recall exactly the
5 logic behind it now.

6 MR. DUBUC: There are some additional pictures
7 that are not in this group.

8 THE WITNESS: This is the only part of it.

9 And then the track we talked about on the second impact.
10 There are various photographs from different angle. And
11 some of these angles and some of these additional photographs
12 substantiate each different areas as you go back through the
13 trench. That's another general statement without getting very
14 specific.

15 Some of these photographs -- in fact, right here's one.
16 It happens to be picture number 335. That shows the plow
17 marks now filled with water as the structure plowed through
18 one of these cross dikes. And the water is now standing in
19 the area where the thing plowed through the dikes. And the
20 depths and width of the water on either side of that dike is
21 not materially different indicating that the aircraft didn't
22 bounce up when it hit that cross dike.

23 Q What's the number of that?

1 A 335.

2 Q You said the depth of the water. How could you
3 tell the depth of the water?

4 A The width of the track is the only thing you can
5 tell from the photograph, obviously.

6 Q You can't tell how deep it is?

7 A I withdraw the word "deep" okay?

8 Q Thank you.

9 A I would like to say that, you know, this is a very
10 quick glance at these pictures. And if I studied the
11 picture longer, I could probably find additional things of
12 interest.

13 Q Well, will you tell us or tell me if there is
14 something like that so I can ask you about those? You
15 didn't have an opportunity to see them yesterday.

16 MR. DUBUC: Well, we can --

17 MR. LEWIS: I'm not arguing, but I'm saying --

18 THE WITNESS: I mean, if I had a day -- you know,
19 there is the nose gear that came across to the second impact
20 point, and that picture --

21 MR. DUBUC: That's 196.

22 THE WITNESS: 196 substantiates the statements
23 I have been making.

1 BY MR. LEWIS:

2 Q Which is?

3 A That the nose gear did not break off and did cross
4 the river with the aircraft. And if it had hit on the other
5 side and if the aircraft had hit nose first over there,
6 that gear would have been broken on the first impact. It did
7 not. It came to the second impact point.

8 Many detailed views of the aft troop compartment. For
9 example, photograph number 139, which merely augments the
10 other pictures in that it shows the troop compartment in
11 essentially level fore and aft latitude. And some of the
12 other pictures -- yeah. There is a normal manufacturing line
13 that's visible in that picture where the other fuselage joins
14 the lower fuselage.

15 Another picture, number 116, that shows the vegetation,
16 this taller vegetation surrounding the troop compartment.

17 Another picture, number 296, that shows the taller
18 vegetation directly in front of the troop compartment.

19 A close-up picture of the aft end of the troop compart-
20 ment. Again, picture number 187 shows the water in the
21 area and the soil and shows the normal irregularity of
22 farmland soil.

23 Picture number 318 of the wing area showing a

1 discoloration from the smoke, soot and so forth from the fire
2 that consumed the wing. And it shows the smoke, etcetera,
3 going towards an area which other photographs will
4 substantiate that this area was away from the troop compartment
5 where the passengers were.

6 Q It was the -- is the main sparring intact in that
7 picture?

8 A The main wing spar?

9 Q Yes.

10 A Totally intact?

11 Q Yes.

12 A It looks like there are some little people that
13 have been chipping away on the airplane at this point in
14 time. There are parts of the airplane gone at this point.

15 Q I want to know is the main spar intact.

16 The answer is no, isn't it?

17 A The answer is it's been chipped and carried away.
18 If this picture is late in the program -- you see a lot of
19 people standing around removing and carrying away things.

20 Q Okay.

21 A The last picture in this group number 218 is a
22 ground level view of the area showing a helicopter. And
23 this picture attests to the essential farmland type levelness

1 of the terrain. It's really farmland level that you see in
2 this picture because -- well, the picture speaks for itself.

3 Q Okay. But in any event, you agree that these
4 pictures are very material to an understanding of what
5 happened in the crash?

6 A I didn't say it quite like that, now, Mr. Lewis.
7 I believe what I said was that these pictures would
8 substantiate the things that I have been saying that otherwise
9 really couldn't do. And that is I have been saying like the
10 drag direction, about the water and about the farmland and
11 everything else.

12 Q I understand that, sir.

13 A But I didn't say that that would not --

14 Q They are important. They are important to an
15 understanding of the crash, aren't they?

16 MR. DUBUC: Well, you know, you are getting into
17 a legal term that I don't think Mr. Edwards -- it's fair to
18 ask him.

19 MR. LEWIS: Then I withdraw the question.

20 That's all of the questions I have.

21 Do you have any more?

22 MR. DUBUC: No.

23 Just put on the record that there were a couple of open

1 questions that Mr. Edwards is not expected to come back for
2 retestifying on Mr. Piper's exhibits which we don't have.

3 That's --

4 MR. LEWIS: Well, I certainly don't want him to
5 unless it's absolutely urgent. And I don't expect that that
6 will be necessary, because I believe he has identified the
7 pictures in Walker Exhibit Number 3. And the only ones that
8 are missing are the movie. And he says he hasn't seen that.
9 I'm not -- you know, I have no way of knowing that one way or
10 the other. But if he hasn't seen any movie, I guess he hasn't
11 seen that one. I'm not stipulating to that, but that's
12 clearly what he said.

13 With respect to the color photographs that Piper had --

14 MR. DUBUC: Which ones are those?

15 MR. LEWIS: Well, he came up with a bunch of color
16 pictures and he came up with a bunch of --

17 MR. DUBUC: Really?

18 MR. LEWIS: Piper came up with some pictures and

19 --
20 MR. DUBUC: I mean, other than Exhibits 1, 2, 3 and
21 4 that we have already marked?

22 MR. LEWIS: Yes. There are also some slides that
23 Piper has. But as far as those kinds of things, I'm sure we

1 can probably work something out with this witness if it's --

2 MR. DUBUC: Okay. . .

3 MR. LEWIS: Thank you. . .

4 (Thereupon, at 5:07 o'clock p.m., the taking of the instant
5 deposition ceased.0

Signature of Witness

SUBSCRIBED AND SWORN to before me this _____ day of
, 1981.

Notary Public

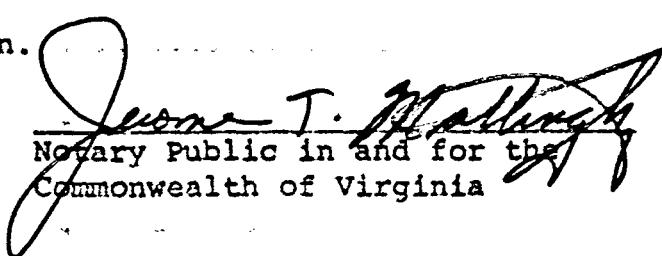
My Commission Expires: _____

1 CERTIFICATE OF NOTARY PUBLIC

2 COMMONWEALTH OF VIRGINIA)

3 COUNTY OF ARLINGTON)

4 I, JEROME T. MATTINGLY, the officer before whom the
5 first portion of the foregoing deposition was taken, do hereby
6 certify that John Edwards, whose testimony appears in the
7 foregoing deposition, was duly sworn by me, a Notary Public
8 in and for the Commonwealth of Virginia at Large; that the
9 testimony of said witness was recorded by me by stenotype
10 and thereafter reduced to typewritten form under my direction;
11 that said deposition is a true record of the testimony given
12 by said witness; that I am neither counsel for, related to,
13 nor employed by any of the parties to the action in which
14 this deposition was taken; and, further, that I am not a
15 relative of or employee of any attorney or counsel employed
16 by the parties hereto, nor financially or otherwise interested
17 in the outcome of the action.

18 
19 Notary Public in and for the
Commonwealth of Virginia

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1 CERTIFICATE OF NOTARY PUBLIC
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I, DEBORAH S. CUBBAGE, the officer before whom
the second portion of the foregoing deposition was taken
was recorded by me by stenotype and thereafter reduced to
typewritten form under my direction; that said deposition is
a true record of the testimony given by said witness; that I
am neither counsel for, related to, nor employed by any of
the parties to the action in which this deposition was taken;
and, further, that I am not a relative of or employee of any
attorney or counsel employed by the parties hereto, nor
financially or otherwise interested in the outcome of the
action.

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Deborah S. Cubbage
Notary Public in and for the
Commonwealth of Virginia