

EDWARDS

1/27/82

KURTH

2431

1 TRANSCRIPT OF PROCEEDINGS

2 THE CLERK: CIVIL ACTION 80-3223, THE CASE
3 OF KURTH VERSUS LOCKHEED.

4 THE COURT: GOOD MORNING. BRING IN THE JURY,
5 MARSHAL.

6 (THE JURY WAS BROUGHT INTO THE COURTROOM, AND
7 THE FOLLOWING PROCEEDINGS WERE HAD, WITHIN THE PRESENCE
8 AND HEARING OF THE JURY:)

9 THE COURT: GOOD MORNING, LADIES AND GENTLEMEN.

10 MR. DUBUC?

11 MR. DUBUC: MAY I PROCEED, YOUR HONOR?

12 THE COURT: YES, PLEASE.

13 WHEREUPON,

14 JOHN W. EDWARDS

15 RESUMED THE STAND, AND, HAVING BEEN PREVIOUSLY DULY SWORN,
16 WAS EXAMINED AND TESTIFIED FURTHER AS FOLLOWS:

17 MR. PIPER: YOUR HONOR, MIGHT I COME AROUND
18 HERE?

19 THE COURT: SURELY.

20 MR. LEWIS: COULD WE HAVE THE EXHIBIT NUMBER
21 OF THIS PARTICULAR MOVIE?

22 THE COURT: OF COURSE.

23 MR. DUBUC: D-1322.

24 MR. LEWIS: THANK YOU.

25 THE CLERK: I BEG YOUR PARDON?

1 MR. DUBUC: D-1322.

2 THE CLERK: THANK YOU.

3 DIRECT EXAMINATION -- (CONTINUED)

4 BY MR. DUBUC:

5 Q. GOOD MORNING, MR. EDWARDS.

6 A. GOOD MORNING.

7 Q. NOW, YESTERDAY, JUST BEFORE WE CLOSED, WE HAD
8 REFERRED TO A MOVIE, EXHIBIT D-1322. AND I THINK YOU
9 TOLD US YOU HAD SEEN IT, AND YOU HAD SEEN THE AREA THAT
10 IT DEPICTS; IS THAT CORRECT?

11 A. YES, I HAVE SEEN THE MOVIE, AND I HAVE SEEN
12 THE AREA SEVERAL TIMES.

13 Q. ALL RIGHT.

14 MR. DUBUC: YOUR HONOR, WITH YOUR PERMISSION,
15 I WOULD LIKE TO SHOW THE MOVIE AND HAVE MR. EDWARDS COMMENT
16 AS TO WHAT HE OBSERVES IN IT.

17 THE COURT: VERY WELL.

18 THE WITNESS: COULD I HAVE THE POINTER?

19 MR. DUBUC: DO YOU WANT THE POINTER? OKAY.

20 MR. LEWIS: YOUR HONOR, MAY I APPROACH COUNSEL
21 FOR ONE SECOND?

22 THE COURT: SURELY.

23 MR. DUBUC: WHY DO YOU NOT GET THE MICROPHONE,
24 MR. EDWARDS.

25 THE WITNESS: ALL RIGHT.

1 CAT THIS POINT, DEFENDANT'S EXHIBIT D-1322,
2 A MOVIE, WAS SHOWN TO THE JURY, AND THE FOLLOWING PROCEEDINGS
3 WERE HAD WITHIN THE PRESENCE AND HEARING OF THE JURY:)

4 BY MR. DUBUC:

5 Q. NOW, IF YOU COULD TELL US, SIR, WHAT IS DEPICTED
6 HERE, BASED UPON YOUR KNOWLEDGE OF THE AREA AND YOUR REVIEW
7 OF THE ACCIDENT SCENE?

8 A. WELL, AS I MENTIONED YESTERDAY, I WALKED THIS
9 AREA SEVERAL TIMES ON BOTH SIDES OF THE RIVER; THAT IS,
10 THE EAST SIDE, WHICH IS THE FIRST TOUCHDOWN POINT, AND
11 THE WEST SIDE, WHICH IS THE SECOND TOUCHDOWN POINT.

12 THIS MOVIE MOVES RATHER FAST, AND IT STARTS OVER
13 ON THE EAST SIDE, AND IT BASICALLY FOLLOWS THE PATH OF
14 THE AIRCRAFT PRIOR TO THE FIRST TOUCHDOWN ON THE EAST
15 SIDE AND THEN ACROSS TO THE WEST SIDE.

16 THEN, IT COMES BACK AND GOES IN MORE DETAIL ON THE
17 EAST SIDE AND AGAIN ON THE WEST SIDE.

18 THIS MOVIE WAS TAKEN ON THE 6TH OF APRIL, TWO DAYS
19 AFTER THE ACCIDENT.

20 THE AIRCRAFT IS COMING IN.

21 I WILL MERELY POINT OUT POINTS THAT YOU SHOULD NOTICE.

22 THE FIRST TOUCHDOWN POINT; SOME SLIGHT ABRASION;
23 AND YOU HAVE TO LOOK CLOSELY AT THIS LITTLE DIKE ABOUT
24 ONE-FOOT HIGH.

25 THERE IS ANOTHER SLIGHT ABRASION AT THIS DIKE, AND

1 THEN FOUR MARKS, INDICATING THAT THE WHEELS TOUCHED DOWN
2 HERE AND HERE, ROLLED FOR A SHORT DISTANCE, AND THEN THESE
3 MARKS DISAPPEAR.

4 SOME DISRUPTION OF THIS BANK.

5 THERE IS DEEPER PENETRATION OF THE SOIL HERE.

6 NOTICE THIS LITTLE MARK. IT GOES BY REAL FAST.

7 DEEP PENETRATION HERE.

8 AND FROM THEN ON, NO MORE DEEP PENETRATION.

9 YOU SEE SOME SCATTERED DEBRIS, PARTS THAT DEPARTED
10 THE AIRCRAFT AND SCATTERED DOWN IN THIS AREA. THERE ARE
11 PEOPLE IN THIS AREA.

12 AND, AGAIN, MARKS IN THIS SOFT SOIL. THE SOIL NOW
13 BECOMES WET, AS YOU SEE HERE AND HERE.

14 PARTS BOUNDING THROUGH THIS SOFT RICE PADDY: HERE
15 IS A POINT; HERE IS A POINT.

16 THEN, THERE IS GENERAL DEBRIS THROUGH THIS AREA.

17 TALL VEGETATION, PALM-FROND-TYPE VEGETATION.

18 AIRCRAFT PARTS, AIRCRAFT PARTS.

19 NOW, WE ARE APPROACHING THE RIVER.

20 THE SECOND TOUCHDOWN POINT. IF YOU LOOK CLOSELY,
21 THERE IS SOME DISTURBANCE OF THE VEGETATION RIGHT HERE.
22 THERE IS SOME DISTURBANCE ON THIS DIKE, DISTURBANCE HERE
23 IN THE DIKE.

24 FARMERS' IRRIGATION DITCHES.

25 PENETRATION IN THE SOIL.

1 THIS IS A FARMER'S IRRIGATION DITCH. THIS IS THE
2 AIRCRAFT PATH.

3 BOUNDING PARTS, DISTURBANCE OF THE SOIL, WATER COLLECTING,
4 SCRUBBING OF THE VEGETATION IN THIS AREA.

5 THERE IS GREEN VEGETATION, UNDISTURBED, ON THIS SIDE.

6 THE T-TAIL, THE TROOP COMPARTMENT, THE FLIGHT DECK,
7 AND OFF IN THE DISTANCE THE WING.

8 THE WING AND THE BLACKENED AREA, THE SOOTED AREA,
9 FROM THE WING FIRE.

10 THERE WAS ANOTHER RIVER JUST BEYOND THAT.

11 NOW, WE ARE BACK TO THE FIRST TOUCHDOWN POINT, AND
12 WE ARE LOOKING AT THE SIDE OF THIS DEEP GOUGE IN THE EARTH,
13 FOLLOWING THE PATH OF THE AIRCRAFT TOWARD THE RIVER.

14 THERE ARE TREES TO THE RIGHT OF THE FIRST TOUCHDOWN
15 POINT: TREES CLIPPED OFF, MOST PROBABLY, BY THE WING.
16 THERE ARE FOUR TREES THERE.

17 AGAIN, WE SEE THE DEBRIS.

18 ANOTHER LOOK AT THE TREES -- ONE, TWO, THREE, FOUR
19 TREES. WE WILL SEE MORE OF THOSE LATER.

20 THE WET SOIL.

21 TWO VERY ROUND MARKS.

22 A GEAR. PAY PARTICULAR ATTENTION TO THIS: FOUR
23 TIRES ON THIS GEAR, AND LOOK AT THE BREAK AT THIS POINT
24 RIGHT HERE.

25 THE TALL RICE.

1 AN AIRCRAFT PART HERE.

2 IT LOOKS LIKE TWO TIRES OFF OF ONE OF THE BOGIES.

3 AGAIN, LOOKING TOWARD THE RIVER.

4 THIS PART APPEARS TO BE A COUPLE OF TIRES OFF OF
5 THE LANDING GEAR.

6 WE ARE LOOKING DOWN INTO THAT HEAVY PALM FROND, AND
7 THIS IS ONE OF THE GEAR PARTS. THIS IS WHAT WE CALL
8 A GEAR STRUT.

9 NOW, WE ARE LOOKING AT THE SECOND TOUCHDOWN POINT.
10 WE ARE LOOKING AT THE DIKE.

11 THE AIRCRAFT IS TRAVELING IN THIS DIRECTION.

12 THE TOUCHDOWN, THE GOUGES. THE AIRCRAFT STARTED
13 SCRUBBING INTO THE RIDE PADDY, AND YOU CAN SEE IT IS WET.

14 THE AIRCRAFT PARTS, AIRCRAFT PARTS, AIRCRAFT PARTS.

15 SOME PART DETACHED FROM THE AIRCRAFT, BOUNDING, DIGGING
16 A HOLE, DIGGING A HOLE. BUT THE MAIN AIRCRAFT IS IN THIS
17 DIRECTION.

18 YOU CAN SEE SOME OF THESE LIGHT, METAL PARTS BEING
19 BLOWN BY THE DOWNWASH FROM THE HELICOPTER BLADES.

20 THIS, I IDENTIFIED AS PART OF THE PEDAL DOOR. THIS
21 OBJECT IS PROBABLY 20 FEET LONG, AND IT IS VERY LIGHT,
22 RELATIVELY.

23 SO THE HELICOPTER KIND OF BLOWS IT ALONG.

24 HERE IS THIS FARMER'S IRRIGATION DITCH, BUT THIS
25 IS THE PATH OF THE AIRCRAFT.

1 GOUGES FROM PARTS DETACHED FROM THE AIRCRAFT.

2 SCRUBBING OF THE SOIL.

3 SCRUBBING OF THE VEGETATION OFF THE TOP OF THE SOIL.

4 WE ARE LOOKING AT THE T-TAIL LYING UPSIDE DOWN, TWO
5 PIECES. THIS IS KIND OF OFF TO THE RIGHT OF THE BASIC
6 FLIGHT PATH OF THE AIRCRAFT.

7 THIS IS AT ACTUALLY THE UPPER SURFACE. THIS SURFACE
8 MOVES. THIS IS WHAT YOU USE TO TRIM THE FLIGHT OF THE
9 AIRCRAFT.

10 THIS IS THE LOWER FUSELAGE.

11 HERE WE SEE A SECTION OF THE CARGO FLOOR. I BELIEVE
12 THIS IS THE SECTION RIGHT HERE.

13 WE ARE LOOKING AT THE AFT END OF THE TROOP COMPARTMENT,
14 IN A DIRECTION LIKE THIS. THIS IS THE AFT END, THE FORWARD
15 END.

16 WE ARE LOOKING AT THE LEFT SIDE. THESE ARE THE
17 EXITS.

18 THERE IS AN OPENING HERE, A LARGER OPENING HERE.

19 WE ARE SWINGING AROUND TO THE FRONT. NOTICE THE
20 WATER, THE BLUE, THE BLUE, THE WATER.

21 LOOKING INTO THE FRONT END, THERE IS A SLIGHT OPENING
22 RIGHT HERE. THIS IS A BULKHEAD DESIGNED TO BLOW OUT IN
23 THE EVENT OF A DECOMPRESSION.

24 SWINGING AROUND TO THE OTHER SIDE, YOU SEE THE WATER.
25 YOU SEE THE WATER HERE, AND THE TALL VEGETATION. THIS

1 AREA HAD NOT BEEN TILLED, AS MOST FARMERS LET SOME OF
2 THE SOIL GO UNTILLED FROM YEAR TO YEAR.

3 SWINGING ALL THE WAY AROUND, NOW WE ARE LOOKING BACK
4 AT THE AFT END AGAIN.

5 NOTICE HOW THE THING GETS LARGER AS IT GOES AFT.

6 WE ARE SWINGING AROUND AND LOOKING AT THE WATER,
7 THE WATER, THE VEGETATION, THE WATER HERE, THE WATER IN
8 THIS AREA.

9 THIS IS THE FLIGHT DECK, AND IT IS UPSIDE DOWN. YOU
10 ARE ACTUALLY LOOKING DOWN ON THE FLIGHT DECK AT THIS POINT.

11 AND, AS WE SWING AROUND, YOU CAN KIND OF RECOGNIZE
12 IT AS BEING THE FLIGHT DECK.

13 THIS WOULD BE THE PILOT'S WINDOW RIGHT HERE, AND
14 THEY OPENED THIS WINDOW; ROLLED IT BACK IN THE RAILS,
15 OPENED THE WINDOW, AND CLIMBED OUT AT THIS POINT.

16 AND THIS IS THE FUSELAGE THAT GOES ALL THE WAY DOWN
17 TO THE BOTTOM OF THE AIRCRAFT.

18 THIS IS ANOTHER SERVICE DOOR, OR EXIT DOOR.

19 AND NOW WE ARE SWINGING AROUND, LOOKING AT THE AFT
20 END.

21 AND THIS IS ACTUALLY THE FLOORING OF THAT FLIGHT
22 DECK, AND HERE IS A LARGE PIECE OF FUSELAGE STRUCTURE
23 COMING OFF ALL THE WAY DOWN TO ALMOST THE VERY BOTTOM.

24 AGAIN, YOU SEE WATER IN THIS AREA AND THE VEGETATION.

25 WE SWUNG OVER NOW TO THE WING. THE WING WAS WAY

1 AHEAD OF EVERYTHING ELSE. AND WHEN THE WING IMPACTED
2 THE GROUND, SOME OF THE WING BROKE OFF; THE FUEL SPILLED
3 OUT; AND IT CAUGHT ON FIRE.

4 NOW, THE WING IS ACTUALLY LYING UPSIDE DOWN. YOU
5 CAN SEE THIS LONG PIECE RIGHT HERE. THAT IS ONE OF THE
6 MAIN FRAMES THAT GOES DOWN AND TIES TO THE FUSELAGE.

7 THIS IS AN ENGINE THAT WAS WITH THE WING WHEN IT
8 IMPACTED, AND IT FELL OFF.

9 SOME MORE FARM LAND, AND YOU SEE THE WATER THAT IS
10 IMPOUNDED HERE.

11 NOW, WE ARE LOOKING BACK ON THE THING: THE WING,
12 THE TROOP COMPARTMENT. THIS IS THE FRONT END. THE DISTANCE
13 HERE.

14 THAT IS THE FLIGHT DECK.

15 AND, AGAIN, YOU SEE THESE MAIN FRAMES STICKING UP
16 RIGHT HERE.

17 THIS IS THE RIVER, WHICH WAS ON BEYOND THE FLIGHT
18 PATH OF THE AIRCRAFT.

19 A HIGHER AERIAL VIEW: THE WING, THE FLIGHT DECK,
20 THE TROOP COMPARTMENT, THE T-TAIL, AND THE RIVER. THE
21 AIRCRAFT CAME IN THIS DIRECTION.

22 YOU CAN SEE THE BLACKENED MARKS, THE SKID MARKS,
23 WHERE THE THING SCOOTED THROUGH THIS VEGETATION. YOU
24 CAN SEE THE SKID MARKS HERE.

25 THIS IS A DIKE THAT THE THING IMPACTED ON THE SECOND

1 IMPACT.

2 AND WAY OVER HERE IS THE FIRST IMPACT.

3 YOU CAN SEE THAT SOME OF THE RICE PADDIES WERE BEING
4 TILLED. SOME WERE NOT. THIS ONE WAS BEING TILLED. SOME
5 WAS LYING IDLE. THIS ONE IS IDLE. THIS ONE IS BEING
6 TILLED.

7 YOU CAN SEE THE SAME THING ON THIS SIDE OF THE RIVER.

8 NOW, WE HAVE SWUNG AROUND PRETTY MUCH AND ARE LOOKING
9 IN THE DIRECTION THAT THE AIRCRAFT TRAVELED.

10 YOU CAN SEE IT GOING THROUGH HERE, AND YOU CAN SEE
11 THE REFLECTION FROM THE WATER IN THESE IRRIGATION DITCHES
12 AND DRAINAGE DITCHES, ET CETERA.

13 Q. THANK YOU, MR. EDWARDS.

14 MR. EDWARDS, YOU MENTIONED IN THAT MOVIE SEVERAL
15 ITEMS THAT YOU POINTED OUT TO NOTICE.

16 THE COURT: DO YOU WANT HIM TO RETURN TO THE
17 STAND?

18 MR. DUBUC: I THINK HE CAN RETURN TO THE STAND,
19 YOUR HONOR, UNLESS IT BECOMES NECESSARY FOR HIM TO MOVE
20 DOWN HERE WHEN WE HAVE THE SLIDES.

21 WE HAVE SOME SLIDES THAT ARE EXHIBITS, WHICH
22 ARE PARTS OF THIS.

23 THE COURT: VERY WELL.

24 MR. DUBUC: IF YOU WILL BEAR WITH US JUST A
25 SECOND.

1 THE COURT: YES, SIR.

2 MR. DUBUC: THE FIRST SLIDE I WOULD LIKE TO

3 SHOW THE WITNESS IS EXHIBIT D-1429.

4 THE COURT: MR. DUBUC, THESE ARE EXHIBITS THAT

5 WERE NOT SHOWN BY THE PLAINTIFF?

6 MR. DUBUC: I BELIEVE SOME OF THESE HAVE BEEN,

7 AND SOME HAVE NOT, YOUR HONOR.

8 I DON'T BELIEVE THERE IS ANY OBJECTION TO ANY

9 OF THE PICTURES.

10 THE COURT: VERY WELL.

11 BY MR. DUBUC:

12 Q. COULD YOU TELL US WHAT THAT IS, MR. EDWARDS?

13 A. YES.

14 THIS IS A VIEW LOOKING IN THE DIRECTION THAT THE
15 AIRCRAFT TRAVELED AND COVERS THE FIRST TOUCHDOWN POINT.

16 IN THE VIEW ON THE VERY LOWER LEFT, YOU SEE THAT
17 DIKE THAT IN THE MOVIE HAD A SLIGHT DISTURBANCE.

18 Q. THAT IS THE ONE YOU MENTIONED?

19 A. THAT IS THE VERY FIRST POINT.

20 Q. ALL RIGHT.

21 A. AT THE VERY LOWER LEFT, ABOUT SIX INCHES UP
22 FROM THE BOTTOM, THAT DIKE HAD A VERY SLIGHT DISTURBANCE.

23 Q. HERE?

24 A. ABOUT IN THAT AREA. THAT IS CORRECT.

25 Q. ALL RIGHT.

1 A. BUT THEN THERE IS NO DISTURBANCE FROM THERE
2 TO THE SECOND DIKE, WHICH RUNS A LITTLE CLOSER TO THE
3 MAIN IMPACT OF THE TIRES.

4 Q. BEFORE OR AFTER THE IMPACT?

5 A. BEFORE.

6 Q. THIS ONE HERE?

7 A. RIGHT ABOUT IN THERE, THERE IS ANOTHER DISTURBANCE,
8 BUT THERE IS NO DISTURBANCE IN THE BASIC RICE PADDY IN
9 BETWEEN.

10 Q. OKAY.

11 NEXT IS EXHIBIT D-1405. WHAT IS THAT, SIR?

12 A. THAT IS ANOTHER VIEW, A LITTLE CLOSER DOWN
13 TO THE GROUND.

14 RIGHT IN THE LOWER CENTER, YOU CAN VERY EASILY SEE
15 THE DISTURBANCE IN THAT LITTLE DIKE, WHERE THE TOP OF
16 THE DIKE WAS KIND OF PUSHED OVER.

17 Q. OKAY.

18 A. AND THEN ON DOWN, OF COURSE, UP AT THE TOP
19 OF THE SCREEN, YOU SEE THE TRACKS WHERE THE TIRES ACTUALLY
20 CONTACTED THE GROUND.

21 Q. THE NEXT EXHIBIT IS EXHIBIT D-1406. WHAT IS
22 THAT, SIR?

23 A. WE HAVE NOW MOVED DOWN CLOSER, AND NOW WE CAN
24 SEE, AGAIN, IN THE LOWER PART OF THE PICTURE, A LITTLE
25 BIT TO THE RIGHT OF CENTER, YOU CAN SEE THE DISTURBANCE

1 OF THAT LITTLE DIKE.

2 AND THEN THE AIRCRAFT DESCENDED LOWER, BEYOND THAT,
3 AND THE TIRES ACTUALLY CONTACTED THE GROUND.

4 AND ON THE LEFT YOU CAN SEE VERY DISTINCTLY FOUR
5 TIRE MARKS.

6 THE NATURE OF THE GEAR ON THIS AIRCRAFT IS SUCH THAT
7 THERE ARE SIX TIRES, BUT THE SIX TIRES REALLY ONLY LEAVE
8 FOUR TRACKS, BECAUSE TWO TIRES KIND OF FOLLOW EACH OTHER.

9 AND YOU CAN SEE VERY DISTINCTLY THAT THE LEFT GEAR CONTACTED
10 THE GROUND FIRST AND ROLLED FOR A SHORT DISTANCE.

11 THEN, ALL OF A SUDDEN, THE TRACKS DISAPPEAR, INDICATING
12 THAT THAT GEAR HAD TO DEPART THE AIRCRAFT.

13 Q. WHAT SIGNIFICANCE, IF ANY, TO YOU ARE THESE
14 DIKES AND THESE MARKS WHICH ARE SHOWN IN THESE THREE SHOTS?

15 A. THEY HAVE A GREAT DEAL OF SIGNIFICANCE.

16 GOING BACK TO THE FIRST DIKE THAT WE LOOKED AT, AND
17 IT PUSHED OVER THE DIRT ON THAT DIKE, AND THEN THERE IS
18 NO DISTURBANCE BETWEEN THAT DIKE AND THE SECOND DIKE --
19 THAT MEANT THAT -- THAT DIKE IS APPROXIMATELY A FOOT HIGH,
20 FROM A FOOT UP TO KNEE HEIGHT. IT VARIES, OF COURSE.

21 BUT THAT MEANS THAT THE AIRCRAFT WAS DESCENDING AT
22 A VERY LOW DESCENT RATE, ALMOST FLAT, A FLAT FLIGHT ATTITUDE
23 AT THIS POINT.

24 BECAUSE IT DID NOT TOUCH THE GROUND IN BETWEEN.
25 IT TOUCHED THAT DIKE, AND THEN IT TOUCHED THE DIKE ON

1 BEYOND, AND THEN IT DESCENDED SOME MORE BEFORE THE TIRES
2 COULD ACTUALLY GET TO THE GROUND.

3 SO YOU ARE TALKING ABOUT A VERY LOW RATE OF DESCENT.

4 Q. ALL RIGHT.

5 THE NEXT SLIDE IS EXHIBIT D-1430. WHAT IS THAT,
6 SIR?

7 A. WE ARE STILL LOOKING AT THE FIRST TOUCHDOWN
8 POINT, AND YOU CAN SEE THE TIRE MARKS OF THE LEFT BOGIE, AND
9 THE TIRE MARKS OF THE RIGHT BOGIE.

10 AND THEN, BEYOND THAT, YOU SEE THAT VERY DEEP, DARK GOUGE,
11 WHICH IS SOMEWHAT IN THE CENTER OF THOSE FOUR TIRE MARKS.

12 THEN, OFF TO THE RIGHT, YOU SEE WHERE THE SOIL HAS
13 BEEN BRUSHED MORE LIGHTLY; NOT DUG IN LIKE IT WAS WITH
14 THAT DEEP TRENCH.

15 OFF TO THE LEFT OF THAT DARK TRENCH, YOU SEE TWO
16 VERY FAINT MARKS, ALMOST WHITISH IN COLOR.

17 Q. IN HERE?

18 A. THOSE ARE THE TWO MARKS.

19 Q. ALL RIGHT.

20 A. MY OPINION IS THAT, THE AIRCRAFT DESCENDING
21 WITH THE LEFT WING LOW, THE ENGINES GOT CLOSE ENOUGH TO
22 THE GROUND THAT THESE BIG, POWERFUL JET ENGINES ACTED
23 LIKE A TREMENDOUS VACUUM CLEANER.

24 THEY PULLED UP ALL THE LOOSE STRAW AND DUST FROM
25 THAT AREA. MY OPINION IS THAT IT REALLY DIDN'T TOUCH

1 THE GROUND, SO MUCH AS IT GOT CLOSE ENOUGH TO THE GROUND
2 TO VACUUM UP THOSE TWO STREAKS.

3 BECAUSE IT IS NOT DARK AND BLACK LIKE YOU SEE OVER
4 THERE WHERE YOU ACTUALLY HAD CONTACT WITH THE GROUND.

5 Q. ALL RIGHT, SIR.

6 A. OFF TO THE DISTANCE, YOU SEE THE SMOKE; AND
7 THAT IS EVIDENTLY THE WING FIRE ACROSS THE RIVER.

8 Q. WHAT SIGNIFICANCE, IF ANY, ARE THERE BETWEEN
9 THESE GOUGE MARKS AND THE DEEP MARKS THAT YOU MENTIONED?

10 A. WELL, QUITE OBVIOUSLY, THE FOUR TRACKS THERE
11 ON THE LEFT, WHERE THE FIRST GEAR TOUCHED DOWN, THOSE
12 WOULD MATCH WHAT YOU WOULD EXPECT TO SEE OF TIRE MARKS,
13 SIR.

14 BEYOND THAT, THAT DARKER TRENCH, MY OPINION IS THAT
15 THAT WAS MADE BY THE LANDING GEAR STRUT WHICH WAS STILL
16 THERE.

17 THE BOGIE HAS NOW BROKEN OFF, AND IT IS TUMBLING
18 BY ITSELF.

19 AND THE GEAR STRUT WAS STICKING DOWN AND DRAGGING,
20 KIND OF PLOWING THROUGH THAT FARM LAND.

21 Q. ALL RIGHT, SIR.

22 A. NOW, WAY DOWN TO THE RIGHT OF THE FLIGHT PATH,
23 YOU CAN VERY FAINTLY SEE THE FOUR TREES THAT WE TALKED
24 ABOUT, OFF TO THE RIGHT.

25 AND YOU WILL NOTICE THAT THOSE TREES KIND OF GO OFF

1 STARTED TUMBLING BY THEMSELVES, AND THEN THE DEEP TRENCH.

2 AFTER THE DEEP TRENCH, YOU SEE A VERY LIGHTER GROUND
3 DISTURBANCE.

4 IN MY OPINION, THAT IS NOT A DISTURBANCE FROM THE
5 AIRPLANE ROLLING ALONG THE GROUND, OR SCRAPING ALONG THE
6 GROUND, BUT PROBABLY DIRT THROWN UP BY THAT PLOWING THROUGH
7 THAT EARTH AND MAYBE SOME OF THE DEBRIS TUMBLING THROUGH
8 THAT AREA.

9 Q. ALL RIGHT, SIR.

10 THE NEXT ONE IS EXHIBIT D-1432.

11 MR. LEWIS: WHAT WAS THAT LAST ONE, PLEASE?

12 MR. DUBUC: "31," SIR.

13 MR. LEWIS: THE LAST ONE THAT YOU SHOWED?

14 MR. DUBUC: 1431, AND THIS IS 1432.

15 MR. LEWIS: THANK YOU.

16 THE WITNESS: AGAIN, WE ARE NOW FURTHER DOWN
17 THE FLIGHT PATH, AND YOU CAN KIND OF FOLLOW THE FLIGHT
18 PATH BY LOOKING AT THAT DIFFERENCE IN THE SOIL APPEARANCE. NOW,
19 A LITTLE BIT TO THE RIGHT OF THE PEOPLE AND POINTING TOWARD
20 THE FIRE ACROSS THE RIVER, THE LIGHTER DEBRIS THAT YOU
21 SEE THERE --

22 BY MR. DUBUC:

23 Q. HERE?

24 A. YES.

25 (CONTINUING) -- THE LIGHTER DEBRIS THAT YOU SEE THERE,

1 IN MY OPINION, IS THE AIRCRAFT METAL THAT WAS BROKEN OFF
2 AS THE GEAR TUMBLED OUT FROM UNDERNEATH THE AIRCRAFT.

3 Q. ALL RIGHT.

4 THE NEXT SLIDE IS EXHIBIT D-1433. WHAT IS THAT,
5 SIR?

6 A. GOING FURTHER DOWN THE FLIGHT PATH, AGAIN,
7 YOU SEE THE DEBRIS.

8 YOU ARE BEGINNING TO SEE THE WATER, BECAUSE THIS
9 SOIL IS VERY SOFT.

10 THE SIGNIFICANCE OF THAT IS THAT IF THIS AIRCRAFT
11 HAD BEEN ROLLING THROUGH THERE OR SKIDDING THROUGH THERE,
12 YOU WOULD HAVE SEEN A GREAT DEAL OF DISTURBANCE.

13 NOW, YOU SEE SOME DISTURBANCE IN THE LOWER LEFT.
14 YOU SEE THAT LITTLE BLACKENED MARK WITH THE WHITE IN IT?

15 Q. IS THAT HERE?

16 A. YES.

17 THAT WOULD, TO ME, MEAN THAT THERE IS A PART THAT
18 IS NOW DETACHED FROM THE AIRCRAFT WHICH IS TUMBLING THROUGH
19 THAT WET, LOOSE SOIL.

20 AND, IN FACT, FURTHER ON DOWN, ABOUT IN THE MIDDLE
21 OF THE SCREEN AND TO THE LEFT, THE MIDDLE AND ON THE LEFT,
22 YOU SEE KIND OF A BLACK AREA.

23 THAT WOULD BE ANOTHER POINT, PROBABLY, WHERE THAT
24 OBJECT CONTACTED THE GROUND THE SECOND TIME.

25 Q. WHAT IS THIS DOWN HERE, SIR?

1 A. I AM SORRY. I CAN'T SEE BECAUSE OF THE PODIUM.

2 Q. ALL RIGHT.

3 A. YES, I SEE THAT NOW. THAT IS AN AIRCRAFT

4 TIRE THAT CAME LOOSE DUE TO THE BROKEN BOGIE TUMBLING.

5 Q. ALL RIGHT, SIR.

6 NOW, THE NEXT SLIDE IS EXHIBIT D-1434.

7 A. NOW, WE ARE LOOKING -- WE ARE STANDING APPROXIMATELY
8 WHERE THE AIRCRAFT PATH WOULD HAVE BEEN, AND WE ARE LOOKING
9 OFF TO THE RIGHT AT THOSE FOUR TREES.

10 ON THE RIGHT OF THE PICTURE, WE SEE A TREE THAT IS
11 PROBABLY CLIPPED OFF, AND, IN MY OPINION, CLIPPED OFF
12 BY THE WING AS THE AIRCRAFT WENT DOWN THAT PATH.

13 AND THAT TREE IS CLIPPED OFF, AND, AS YOU CAN TELL,
14 IT IS MUCH SHORTER THAN THE SECOND TREE.

15 USING A MAGNIFYING GLASS AND LOOKING AT THE TOP OF
16 THAT TREE, THE TREE IS JAGGED AND IT IS BROKEN, JUST LIKE
17 IT WAS BROKEN OFF, AS OPPOSED TO A VERY SMOOTH CUT THAT
18 A FARMER WOULD MAKE, IF HE IS CHOPPING THE TREE DOWN.

19 THE SECOND TREE -- I AM GOING FROM RIGHT TO LEFT,
20 THE SECOND TREE.

21 Q. OVER HERE?

22 A. THAT'S THE TREE.

23 Q. OKAY.

24 A. THAT TREE, ALSO, WITH THE USE OF A MAGNIFYING
25 GLASS, INDICATES A JAGGED APPEARANCE. AND MY OPINION

1 IS THAT THE WING ALSO CLIPPED THAT TREE.

2 THE THIRD AND FOURTH TREES, I GUESS -- THE FIRST
3 TIME I LOOKED AT IT, I THOUGHT THAT THE WING CLIPPED THOSE,
4 ALSO.

5 BUT, I GUESS, ON A CLOSER EXAMINATION, I HAVE CHANGED
6 MY OPINION, AND I KIND OF THINK THAT MAYBE THOSE WERE
7 CHOPPED OFF BY THE FARMERS PREVIOUSLY.

8 BECAUSE THERE ARE OTHER TREES AROUND THERE WHERE
9 THEY CUT THE TOPS OFF OF THE TREES, AND THEY USE THESE
10 PALM FRONDS TO MAKE ROOFS FOR THEIR LITTLE HUTS.

11 AND, BECAUSE OF THE SMOOTH NATURE OF THE CUT ON THE
12 THIRD AND FOURTH TREES, I NOW DON'T REALLY BELIEVE THE
13 WING CUT THE THIRD AND FOURTH TREES.

14 Q. OKAY, SIR.

15 THE NEXT ITEM WE WOULD LIKE TO SHOW MR. EDWARDS IS
16 EXHIBIT D-1211. AND THIS IS --

17 MR. DUBUC: JUST A MINUTE. HOLD IT. THIS
18 IS AN ARTIST'S CONCEPTION PICTURE OF WHAT HE HAS JUST
19 DESCRIBED ON THE EAST BANK.

20 I THINK I WILL SHOW IT TO HIM AND HAVE HIM
21 DESCRIBE IT. THEN, IF THERE IS ANY PROBLEM, WE CAN APPROACH
22 THE BENCH.

23 BY MR. DUBUC:

24 Q. MR. EDWARDS, CAN YOU TELL US WHAT THIS IS,
25 EXHIBIT D-1211?

1 TO THE RIGHT.

2 THE SECOND TREE IS FURTHER FROM THE FLIGHT PATH THAN
3 THE FIRST TREE, AND THE THIRD TREE, AND SO FORTH.

4 THE COURT: I CAN'T PICK UP THE TREES, MR.
5 DUBUC.

6 THE WITNESS: THEY ARE KIND OF DIFFICULT TO
7 SEE.

8 THE COURT: WOULD YOU POINT THEM OUT TO ME,
9 PLEASE?

10 MR. DUBUC: YES, YOUR HONOR.

11 BY MR. DUBUC:

12 Q. ARE THESE WHAT YOU MEAN BY "THE TREES," MR.
13 EDWARDS?

14 A. THOSE ARE THE FOUR TREES THAT WE SAW IN THE
15 MOVIE.

16 THE COURT: THANK YOU.

17 BY MR. DUBUC:

18 Q. ALL RIGHT, SIR.

19 THE NEXT IS D-1431.

20 A. A LITTLE CLOSER TO THE TOUCHDOWN POINT, AND
21 LOOKING ALMOST STRAIGHT DOWN THE PATH THAT THE AIRCRAFT
22 TOOK, AND YOU SEE THE FOUR TIRE MARKS FOR THE LEFT BOGIE,
23 AND THE FOUR TIRE MARKS FOR THE RIGHT BOGIE.

24 AND, THEN, ALL OF A SUDDEN, THEY DISAPPEAR, INDICATING
25 THAT SOMETHING HAPPENED. THOSE PROBABLY BROKE FREE AND

1 A. YES.

2 THIS IS AN EIGHT-BY-TEN COLOR PICTURE OF AN ARTIST'S
3 CONCEPT OF PUTTING THE AIRPLANE AT THIS FIRST TOUCHDOWN
4 POINT, AND TOUCHING DOWN, AND THE BOGIES BREAKING OFF,
5 WITH THE LEFT WING LOW, AND WITH THE AIRCRAFT APPROACHING
6 THOSE FOUR TREES.

7 Q. SIR, WHAT, IF ANYTHING, DID YOU HAVE TO DO
8 WITH THE FACTUAL INPUT IN THE PREPARATION OF THIS EXHIBIT?

9 A. I DIRECTED THIS OPERATION. I MADE A SIMPLE,
10 FREE-HAND SKETCH. I AM NOT AN ARTIST. I MADE A SKETCH,
11 AND I GAVE IT TO AN ARTIST AND ASKED HIM TO MAKE THIS
12 INTO A DRAWING, AND COME BACK AND SHOW IT TO ME.

13 AND THEN I ASKED HIM TO MAKE CERTAIN CHANGES.

14 THIS DEPICTS WHAT I HAVE BEEN DISCUSSING ABOUT THE
15 BOGIES TOUCHING DOWN AND BREAKING OFF, AND THE LEFT WING
16 LOW, AND THEN THE AIRCRAFT APPROACHING THE TREES.

17 Q. IS IT BASED UPON YOUR OBSERVATION OF THE AREA,
18 YOUR OBSERVATION OF THE OBSERVABLE FACTS, AND YOUR OBSERVATIONS
19 AND YOUR OPINION AS TO THE SEQUENCE YOU HAVE JUST DESCRIBED,
20 SIR?

21 A. YES, IT DOES.

22 IT IS BASED ON THE FACT THAT I WALKED THIS AREA MANY
23 TIMES, AND I VIEWED MOST OF THESE PARTS AT THIS FIRST
24 TOUCHDOWN POINT.

25 I VIEWED THESE TREES.

1 I HAVE SUBSEQUENTLY REFRESHED MY MEMORY FROM

2 LOOKING AT PICTURES.

3 Q. ALL RIGHT, SIR.

4 MR. DUBUC: I OFFER D-1211 IN EVIDENCE, YOUR
5 HONOR.

6 MR. LEWIS: WE HAVE TWO VERSIONS, IF IT PLEASE
7 THE COURT, WITH THE SAME NUMBER.

8 CAN WE DISTINGUISH BETWEEN THE TWO VERSIONS
9 BY CALLING ONE "A" AND ONE "B"?

10 MR. DUBUC: WE ARE ONLY OFFERING THE ONE THAT
11 HE JUST MENTIONED THAT HE HAS LOOKED AT, CORRECTED, AND
12 SO ON.

13 AND THAT IS, AS FAR AS YOUR VERSION IS CONCERNED --

14 THE WITNESS: THE ONE THAT I AM LOOKING AT
15 ONLY HAS TWO TREES WITH TOPS ON THEM.

16 MR. DUBUC: THAT IS CORRECT.

17 MR. LEWIS: AND I HAVE ONE WITH FOUR TREES,
18 ALSO, AND I WOULD JUST LIKE ONE MARKED "A" AND ONE MARKED
19 "B," SO THAT --

20 MR. DUBUC: SO THAT MR. LEWIS IS CLEAR --

21 MR. LEWIS: (CONTINUING) -- I CAN DISTINGUISH
22 BETWEEN THEM.

23 MR. DUBUC: (CONTINUING) -- HE HAS ONE THAT
24 HAS ONLY THREE TREES IN IT, AND ALL OF THEM HAVE TOPS
25 ON THEM. WE ARE NOT OFFERING THAT ONE, BECAUSE MR. EDWARDS

1 HAS JUST DESCRIBED --

2 THE COURT: IDENTIFY THE OTHER ONE.

3 MR. DUBUC: THE OTHER ONE IS EXHIBIT D-1211,
4 WHERE IT DEPICTS TWO TREES WITH TOPS ON THEM AND TWO TREES
5 WITHOUT TOPS ON THEM.

6 THE COURT: THAT IS MARKED FOR IDENTIFICATION
7 AND NOT IN EVIDENCE.

8 MR. DUBUC: YES. THAT IS THE ONE THAT IS
9 MARKED FOR IDENTIFICATION.

10 THE COURT: WITH THAT EXCEPTION, I GATHER THERE
11 IS NO OBJECTION?

12 MR. LEWIS: NO, I HAVE NO OBJECTION. BUT
13 THEY ARE STILL BOTH MARKED WITH THE SAME NUMBER, YOUR
14 HONOR.

15 THE COURT: WELL, WE WILL STRAIGHTEN THAT OUT
16 LATER. IF YOU CANNOT STRAIGHTEN IT OUT NOW, STRAIGHTEN
17 IT OUT AT THE RECESS.

18 MR. LEWIS: THANK YOU, YOUR HONOR.

19 THE COURT: THE DOCUMENT IS RECEIVED.

20 MR. DUBUC: WE WILL SHOW THE JURY EXHIBIT
21 D-1211.

22 BY MR. DUBUC:

23 Q. NOW, WHAT IS THAT, SIR, JUST SO THE JURY UNDERSTANDS
24 WHAT WE ARE TALKING ABOUT?

25 A. THIS IS AN ARTIST'S CONCEPT, MADE AT MY DIRECTION,

1 THAT PUTS THE AIRPLANE IN THIS SCENE OF THE FIRST TOUCHDOWN,
2 AND WITH THE AIRCRAFT THEN BEING AIRBORNE.

3 IT SHOWS THE LEFT WING AS BEING LOW.

4 IT SHOWS THE GEAR, THE BOGIES HAVING BROKEN OFF AND
5 TUMBLING THEMSELVES.

6 IT SHOWS A DOOR BROKEN LOOSE.

7 IT SHOWS THOSE LOOSE STRUTS. IN FACT, ONE STRUT
8 IS NOW OFF THE AIRCRAFT AND TUMBLING IN FRONT OF THE AIRCRAFT.

9 AND ON THE RIGHT WING, IT SHOWS THE TWO TREES WITH
10 TOPS ON THEM; AND, AS I STATED EARLIER, MY OPINION IS
11 THAT THE WING CLIPPED THOSE TWO TREES OFF.

12 AND YOU SEE THE TWO TREES ON THE EXTREME LEFT WITH
13 NO TOPS.

14 AS I STATED, ORIGINALLY, I HAD KIND OF THOUGHT THAT
15 THE WING CLIPPED OFF ALL FOUR TREES. BUT, WITH MY MAGNIFYING
16 GLASS, AND LOOKING AT THE TOP OF THAT TREE, IT WAS A VERY
17 SMOOTH CUT, AND PROBABLY CUT BY A FARMER. SO I JUST
18 CHANGED MY OPINION AFTER CLOSER EXAMINATION.

19 Q. ALL RIGHT.

20 I BELIEVE THE NEXT ONE WE HAVE IS D-1443?

21 MR. CONNORS: NO, THE DIAGRAM.

22 MR. DUBUC: OH, OKAY. I AM SORRY. IT IS
23 D- 1307, LANDING GEAR LOCATION DIAGRAM.

24 YOUR HONOR, CAN YOU SEE?

25 THE COURT: THAT IS FINE.

1 BY MR. DUBUC:

2 Q. WHAT IS THIS, SIR?

3 A. THIS IS A DIAGRAM THAT ILLUSTRATES WHAT WE
4 MEAN WHEN WE TALK ABOUT THE LANDING GEAR.

5 AND YOU SEE THE WORDS "NOSE GEAR" POINTING DOWN TO
6 THE FRONT OF THE AIRCRAFT, AND YOU SEE THE FOUR MARKS
7 THERE.

8 THERE ARE ACTUALLY FOUR TIRES ON THAT NOSE GEAR.

9 Q. THAT IS UP HERE?

10 A. RIGHT.

11 Q. OKAY.

12 A. NOW, AFTER THAT YOU SEE THE WORDS "FORWARD
13 MAIN" POINTING DOWN, AND YOU SEE SIX MARKS THERE.

14 THERE ARE ACTUALLY SIX TIRES ON THE BOGIE.

15 NOW, THERE ARE FOUR OF THOSE. THE ONE ON THE RIGHT
16 THAT THE ARROW IS POINTING TO, WE WOULD CALL THAT THE
17 RIGHT FORWARD MAIN GEAR.

18 AND ON THE LEFT SIDE, ITS COUNTERPART WOULD BE THE
19 LEFT FORWARD MAIN.

20 ALL RIGHT. NOW, GOING FURTHER AFT ON THE AIRCRAFT,
21 YOU SEE THE WORDS "AFT MAIN," AND AN ARROW POINTING TO
22 THAT BOGIE ON THE AFT.

23 AND, AGAIN, YOU SEE THE SIX TIRES.

24 ALL FOUR OF THOSE ARE IDENTICAL BOGIES, AND ALL OF
25 THEM HAVE THE SIX TIRES.

1 SO WHEN WE TALK ABOUT "AFT MAIN," THERE ARE TWO AFT
2 MAINS. THERE IS ONE ON THE RIGHT AND ONE ON THE LEFT.

3 Q. ALL RIGHT.

4 A. SO THAT YOU CAN BETTER UNDERSTAND WHAT WE MEAN
5 BY "NOSE GEAR," "FORWARD MAIN," AND "AFT MAIN."

6 Q. OKAY.

7 A. NOW, THE LARGER ENLARGEMENT DOWN ON THE RIGHT
8 IS A SIDE VIEW OF THIS MAIN GEAR.

9 NOW, LOOKING AT THE SIDE, YOU WOULD ONLY SEE FOUR
10 TIRES, BECAUSE, AS YOU SEE FROM THE TOP PICTURE, FOUR
11 OF THOSE WOULD BE IN LINE.

12 NOW, THE BOGIE, OF COURSE, HANGS DOWN BELOW THE AIRCRAFT
13 SOME FIVE FEET, APPROXIMATELY -- I AM NOT EXACTLY SURE --
14 WHEN THE AIRCRAFT IS --

15 Q. YOU ARE SPEAKING ABOUT IN FLIGHT OR --

16 A. IN FLIGHT, WITH THE GEAR EXTENDED, THAT BOGIE
17 WOULD HANG DOWN, JUST PRETTY MUCH AS YOU SEE IT THERE.

18 AND IF THAT BOGIE WERE TO TOUCH THE GROUND AND THE
19 BOGIE --

20 Q. ARE YOU SPEAKING ABOUT THIS PART OF IT NOW?

21 A. THAT IS THE STRUT. FROM THE BREAK POINT UP,
22 I WOULD CALL THE STRUT.

23 Q. WHAT IS THE BOGIE TO WHICH YOU ARE REFERRING?

24 A. THE BOGIE WOULD BE THE PART CONTAINING THE
25 TIRES.

1 Q. THIS PART HERE?

2 A. THAT PART, YES.

3 Q. THAT IS WHAT YOU REFER TO AS THE BOGIE?

4 A. THAT IS THE BOGIE, RIGHT.

5 Q. OKAY.

6 A. AND THE VERTICAL PART WOULD BE THE LANDING
7 GEAR STUT.

8 Q. HOW FAR DOES THAT HANG DOWN BELOW THE AIRCRAFT
9 IN FLIGHT?

10 A. APPROXIMATELY FIVE FEET.

11 Q. WHY IS THAT, SIR?

12 A. WELL, THE LANDING GEAR HAS TO BE LOWER THAN
13 THE AIRPLANE, SO THAT THE LANDING GEAR WILL TOUCH BEFORE
14 THE AIRPLANE, WHEN YOU LAND THE AIRPLANE, AND CUSHION
15 THE AIRPLANE, AND SO FORTH.

16 IT ALSO HAS TO DO WITH WHEN YOU TAKE OFF, WHEN YOU
17 ROTATE THE AIRCRAFT, WHY, YOU WANT THE AIRCRAFT TO BE
18 HIGH ENOUGH ABOVE THE GROUND SO THAT, WHEN YOU ROTATE,
19 THE AFT END OF THE AIRCRAFT WILL NOT SCRUB THE GROUND.

20 Q. ALL RIGHT.

21 IS THE DISTANCE BETWEEN THE LANDING GEAR AND THE
22 STRUCTURE HERE THAT HOLDS THE LANDING GEAR THE SAME ON
23 THE GROUND AS IT IS IN FLIGHT?

24 A. OH, NO, SIR.

25 Q. WHY IS THAT?

1 A. WHEN YOU TOUCH THE GROUND, THAT VERTICAL PART
2 THAT WE CALL A STRUT IS KIND OF LIKE A SHOCK ABSORBER
3 ON A CAR.

4 IT IS FILLED WITH --

5 Q. IS THIS WHAT YOU ARE REFERRING TO AS A STRUT?

6 A. RIGHT.

7 AND WHEN YOU TOUCH DOWN AND THE WEIGHT OF THE AIRCRAFT
8 IS THEN PUT ON THAT GEAR, THIS HYDRAULIC SYSTEM, TOGETHER
9 WITH AN AIR CHAMBER ABOVE IT, WILL COMPRESS TO ABSORB
10 THE WEIGHT OF THE AIRCRAFT, SO THE THING THEN WILL BE
11 PUSHED UP CLOSER TO THE AIRCRAFT.

12 Q. OKAY.

13 A. SO THE GROUND CLEARANCE WOULD BE LESS ON THE
14 GROUND. THE THING WOULD HANG DOWN LESS WHEN THERE IS
15 WEIGHT ON THE GEAR THAN IT WOULD WHEN IT WAS IN AN AIRBORNE
16 CONDITION.

17 Q. NOW, ON THE EAST SIDE OF THE RIVER, WHEN YOU
18 WERE THERE, DID YOU HAVE OCCASION TO VIEW ANY COMPONENTS
19 FROM THE LANDING GEAR OF THIS AIRCRAFT?

20 A. YES, I DID.

21 Q. DO YOU KNOW WHICH ONES?

22 A. THE ONE BOGIE -- AND I HAVE POINTED THIS OUT
23 IN THE MOVIE -- WHICH WAS KIND OF OVER TO THE RIGHT, AND
24 I MENTIONED THAT THERE WERE FOUR TIRES STILL ON THAT BOGIE.
25 BUT, AS YOU CAN TELL FROM THAT PICTURE, TWO OF THEM HAD

1 TO BREAK OFF AND BREAK FREE AND GO SOME OTHER PLACE. THERE
2 WERE ONLY FOUR THERE.

3 I POINTED THAT ONE OUT.

4 AND I WALKED UP AND LOOKED AT THAT ONE VERY CLOSELY,
5 SIR.

6 THE BREAK POINT ILLUSTRATED ON THAT CHART RIGHT THERE
7 IS PRETTY MUCH WHAT YOU WOULD HAVE SEEN, HAD YOU BEEN
8 THERE LOOKING AT THAT GEAR, AS I DID.

9 Q. WHICH PART OF THE CHART?

10 A. THE BOGIE CONTAINING THE WHEELS IS WHAT WE
11 LOOKED AT, AND RIGHT THERE IS THE BREAK.

12 THAT IS THE JAGGED METAL THAT WAS STICKING UP ON
13 THAT BOGIE, AS IT LAY IN THAT RICE PADDY.

14 Q. WAS THIS PREPARED, AS THE OTHER EXHIBITS, UNDER
15 YOUR SUPERVISION?

16 A. ALL OF THIS WAS PREPARED AT MY DIRECTION, YES,
17 SIR.

18 Q. AND DOES THIS REFLECT THE FACTS THAT YOU RECALL
19 AND OBSERVED AND HAVE ASKED TO BE PUT IN THIS DRAWING?

20 A. YES, IT DOES.

21 Q. OF WHAT SIGNIFICANCE, IF ANY, IS THIS BREAK
22 POINT THAT YOU HAVE DESCRIBED ON HERE?

23 A. WELL, IT HAS BEEN MY OPINION SINCE THE VERY
24 BEGINNING THAT, WHEN THE AIRCRAFT TOUCHED DOWN THERE,
25 THAT GEAR -- THE AIRCRAFT TOUCHED DOWN AT A VERY LOW

1 RATE OF SINK AND A VERY LEVEL FLIGHT ATTITUDE.

2 AND WE TALKED ABOUT THE DIKES, AND SO FORTH, AS BEING
3 EVIDENCE OF THAT.

4 AND, AS THAT GEAR DUG INTO THE GROUND, IT DUG IN
5 DEEP ENOUGH AND PICKED UP ENOUGH LOAD THAT IT SNAPPED
6 THAT GEAR OFF.

7 AND I REFER TO THIS AS: IT SNAPPED IT OFF IN A DRAG
8 DIRECTION.

9 AND, TO ILLUSTRATE WHAT I WOULD MEAN, IF MY HAND
10 WERE THE AIRCRAFT AND THIS PEN WERE THAT STRUT STICKING
11 DOWN AND THE AIRCRAFT IS FLYING THROUGH AND IT CONTACTS
12 THE GROUND AND THIS PENCIL WERE TO HIT THE DESK, IT WOULD
13 BREAK IT OFF LIKE THAT AND JUST SNAP IT OFF.

14 AND THAT IS WHAT I WOULD CALL A DRAG LOAD.

15 AND THAT IS SIGNIFICANT, BECAUSE IF THE AIRCRAFT
16 HAD COME IN AND BOUNDED DOWN LIKE THAT, IT WOULD HAVE
17 BROKEN COMPLETELY DIFFERENTLY.

18 Q. ALL RIGHT, SIR.

19 THE COURT: MR. DUBUC, DID YOU PUT THE POINTER
20 ON THE STRUCTURE THAT IS AT THE END OF THE ARROW THAT
21 BEINGS WITH THE WORDS "BREAK POINT"?

22 I CAN'T SEE WHERE THAT ENDS.

23 MR. DUBUC: THERE IS ANOTHER ARROW SHOWING
24 THE BREAK POINT, YOUR HONOR.

25 THE COURT: OKAY. AND THAT BREAK IS IN THE

1 STRUT, IN THE THING THAT COMES DOWN, THE CYLINDRICAL THING?

2 THE WITNESS: RIGHT. IT IS ATTACHED TO THAT
3 BOGIE, AND THAT IS WHAT I SAW.

4 THE COURT: AND THAT JAGGED EDGE IS YOUR IMPRESSION
5 OF THE BREAK?

6 THE WITNESS: YES, SIR. YES, YOUR HONOR, IT
7 IS.

8 THE COURT: ALL RIGHT.

9 BY MR. DUBUC:

10 Q. AND THIS RELATES TO THE ONE THAT YOU POINTED
11 OUT IN THE MOVIE?

12 A. THAT IS A FAIRLY ACCURATE ARTISTIC-TYPE DESCRIPTION
13 OF THE BREAK THAT I SAW ON THAT BOGIE SITTING IN THE RICE
14 PADDY

15 THE COURT: MAY I INQUIRE AS TO ONE DETAIL,
16 MR. DUBUC?

17 MR. DUBUC: YES, YOUR HONOR. OH, SURE.

18 THE COURT: WITH RESPECT TO THE REPRESENTATION
19 OF THE ANGLE OF THE BREAK, YOU HAVE THE BREAK STARTING
20 LOW. I ASSUME THAT IS AT THE FRONT END OF THE PLANE.

21 THE BREAK IS LOWER ON THAT MEMBER THAN IT IS
22 ON THE BACK, LIKE IT MIGHT HAVE BEEN PEELED BACK.

23 DID YOU ACTUALLY SEE THAT?

24 THE WITNESS: YES. YES, I --

25 THE COURT: DID YOU ACTUALLY SEE THAT KIND

1 OF JAGGED CUT AT THAT ANGLE?

2 THE WITNESS: YES, I SAW THAT. IT KIND OF
3 FAILS IN A SPIRAL FASHION.

4 IT WOULD NEVER FAIL SMOOTHLY ACROSS, LIKE CUTTING
5 SOMETHING WITH A KNIFE, THAT TYPE OF METAL.

6 IT KIND OF BREAKS IN A JAGGED FASHION, LIKE
7 YOU WOULD BREAK A COKE BOTTLE. IT IS VERY HIGH-STRENGTH
8 STEEL.

9 THE COURT: WERE YOU ABLE TO TELL THEN, THAT
10 IS, WHEN YOU LOOKED AT IT, THAT THE FRONT END BROKE LOWER
11 DOWN ON THE MEMBER ON THE FRONT SIDE OF IT, THE BREAK
12 ON THE FRONT SIDE, WAS CLOSER TO THE GROUND THAN THE BREAK
13 ON THE BACK SIDE OF IT; THAT IS, ASSUMING THAT THE PLANE
14 IS MOVING FROM RIGHT TO LEFT, THAT THE BREAK WENT LIKE
15 THAT?

16 THE WITNESS: I THINK THE LOWEST PART OF THE
17 BREAK WAS TOWARD THE FRONT, BUT ALSO TOWARD THE SIDE.
18 AND, HONESTLY, MY MEMORY CAN'T TELL ME WHETHER IT WAS
19 TO THE LEFT SIDE OR THE RIGHT SIDE.

20 MR. DUBUC: YOUR HONOR, I WOULD LIKE TO SHOW
21 THE WITNESS EXHIBIT D-1443 FOR IDENTIFICATION. AND I
22 BELIEVE THIS IS THE BOGIE WE ARE TALKING ABOUT. MAYBE
23 IT WILL HELP HIM ON THAT.

24 THE COURT: ALL RIGHT.

25 THE WITNESS: YES. THIS IS THE BOGIE THAT

1 WE SAW IN THE MOVIE, AND IT SHOWS THIS BREAK THAT WE WERE
2 LOOKING AT DOWN THERE.

3 AND, YES, THE LOWEST PART OF THE BREAK IS TOWARD
4 THE FRONT, AND IT DOES BREAK IN A KIND OF A SPIRAL DIRECTION,
5 SIR.

6 THE HIGHEST POINT THERE IS NOT STRAIGHT AFT.
7 IT IS A LITTLE BIT TO THE LEFT, I GUESS.

8 THE COURT: OKAY. THANK YOU.

9 MR. DUBUC: I OFFER THAT IN EVIDENCE, YOUR
10 HONOR.

11 SINCE IT IS SMALL AND WE DON'T HAPPEN TO HAVE
12 A SLIDE OF THIS, I WONDER IF COULD JUST SHOW THIS TO THE
13 JURY?

14 MR. LEWIS: COULD I SEE IT?

15 MR. DUBUC: I DON'T BELIEVE THERE HAS BEEN
16 ANY OBJECTION.

17 MR. LEWIS: DO YOU MIND?

18 NO OBJECTION.

19 THE COURT: IT IS RECEIVED.

20 (DEFENDANT'S EXHIBIT NO.

21 D-1443 RECEIVED IN EVIDENCE.)

22 MR. DUBUC: MAY I SHOW IT TO THE JURY, YOUR
23 HONOR, BEFORE WE GO ON TO THE NEXT ONE?

24 THE COURT: CERTAINLY. YOU ALL JUST PASS
25 THAT ALONG AND LISTEN WITH ONE EAR WHILE YOU ARE LOOKING

1 AT IT WITH YOUR EYES.

2 MR. DUBUC: ALL RIGHT. THE NEXT SLIDE THAT
3 WE HAVE IS EXHIBIT D-1436.

4 MR. CONNORS: 1435.

5 MR. DUBUC: SORRY. IT IS 1435?

6 MR. CONNORS: YES.

7 MR. DUBUC: ALL RIGHT.

8 BY MR. DUBUC:

9 Q. WHAT IS THAT, SIR?

10 A. THIS, AGAIN, IS BACK OVER AT THE FIRST TOUCHDOWN
11 POINT, AND IT IS FURTHER DOWN THE FLIGHT PATH.

12 WE SEE THE TALL PALM FRONDS THERE, AND OFF IN THE
13 DISTANCE YOU SEE THE SMOKE.

14 JUST BACK TOWARD THE RIVER, YOU SEE TWO -- YOU SEE
15 A WHITE COLOR, AND THAT IS ONE OF THE TRENCHES THAT WAS
16 MADE BY THE AIRCRAFT AS IT WAS SCRUBBING THROUGH THE RICE
17 PADDY.

18 Q. SIR, BEFORE WE LEAVE THAT SIDE OF THE RIVER,
19 DO YOU HAVE AN OPINION TO A REASONABLE SCIENTIFIC CERTAINTY
20 AS TO THE METHOD AND TYPE OF LOAD THAT OCCURRED WITH RESPECT
21 TO THAT LANDING GEAR THAT WE WERE JUST LOOKING AT IN EXHIBIT
22 D-1307?

23 A. YES, I DO.

24 Q. AND WHAT IS IT, SIR?

25 A. WELL, IN INVESTIGATING AN ACCIDENT SUCH AS

1 THIS, YOU HAVE TO LOOK AT ALL THE INFORMATION THAT IS
2 AVAILABLE.

3 YOU LOOK AT THE PHYSICAL EVIDENCE ON THE SITE, AND
4 YOU LOOK AT THE CREW STATEMENTS, AND THINGS LIKE THAT.

5 AND, JUDGING FROM THOSE FIRST TWO DIKES THAT WE TALKED
6 ABOUT: KNOCKING A LITTLE OF THE EARTH OFF OF THE DIKE,
7 WHICH IS ABOUT A FOOT HIGH, AND THEN GOING ON FOR SOME
8 APPRECIABLE DISTANCE AND THEN KNOCKING SOME MORE DIRT
9 OFF OF THE SECOND DIKE, THAT INDICATES TO ME THAT THE
10 AIRCRAFT WAS JUST COMING IN AND SKIMMING THE GROUND AT
11 A VERY FLAT ATTITUDE.

12 IT DID NOT HAVE A GREAT DESCENT RATE, BECAUSE IT
13 SKIMMED THE TOP OF, OR BRUSHED, THAT FOOT-HIGH DIKE, SIR.

14 IT WENT BEYOND A SECOND DIKE, AND IT TOUCHED DOWN AGAIN
15 A LITTLE FURTHER -- AT A LITTLE LOWER ALTITUDE. IT TOUCHED
16 DOWN, AND, THEN, GRADUALLY, THE BOGIES DUG INTO THE SOIL.

17 AND, FROM LOOKING AT THAT PICTURE OF THE BREAK, MY
18 OPINION IS THAT BROKE IN A DRAG DIRECTION.

19 THAT INDICATES TO ME THAT THE AIRCRAFT DID NOT CONTACT
20 THE GROUND WITH A GREAT DEAL OF VIOLENCE.

21 SO MY OPINION IS THAT THE ATTITUDE WHEN THE AIRCRAFT
22 CONTACTED THE GROUND WAS VERY SIMILAR TO THAT OF LANDING
23 AN AIRCRAFT.

24 IN FACT, IT KIND OF SKIPPED THE GROUND, AS OPPOSED
25 TO CRASHING INTO THE GROUND.

1 AND, TOGETHER WITH THAT, YOU HAVE TO LOOK AT SOME
2 OF THE STATEMENTS MADE BY THE CREW, AND THE STATEMENTS
3 BEAR OUT THAT PHYSICAL EVIDENCE.

4 Q. ALL RIGHT, SIR.

5 GOING TO THE WEST SIDE OF THE RIVER, NOW, PLEASE,
6 COULD I SEE EXHIBIT D-1436?

7 WHAT IS THAT, SIR?

8 A. THIS IS A VIEW TAKEN OVER THE RIVER, LOOKING
9 ALMOST STRAIGHT DOWN THE FLIGHT PATH.

10 NOW, OVER ON THE EXTREME LEFT, YOU SEE THAT LONG,
11 WHITE LINE THAT KIND OF CURVES TO THE RIGHT.

12 THAT IS AN IRRIGATION DITCH, AND THAT IS NOT TO BE
13 CONFUSED WITH THE PATH OF THE AIRCRAFT.

14 IN FACT, THERE ARE TWO SHORT DITCHES THERE. THERE
15 IS ONE DITCH THAT IS SHORTER THAN THE OTHER, BUT THOSE
16 ARE IRRIGATION DITCHES THAT CARRY THE WATER INTO THE FARM
17 LAND.

18 Q. ALL RIGHT, SIR.

19 A. A LITTLE BIT FURTHER TO THE RIGHT OF THOSE,
20 YOU SEE THE MULTITUDE OF CONTACTS WITH THE RICE PADDY,
21 AND THE CONTACT INTO THE RICE PADDY IS VERY CLOSE TO THAT
22 DIKE.

23 THE DIKE IS THE DARKENED OBJECT THAT RUNS FROM THE
24 LEFT TO THE RIGHT, JUST A LITTLE BIT BEYOND THE RIVER,
25 50 OR 75 FEET, SOMETHING LIKE THAT.

1 AND ALL THAT WHITE THAT YOU SEE THERE IS WATER THAT
2 IS STANDING IN THE DITCHES THAT ARE DUG UP BY THE FUSELAGE
3 OF THE AIRCRAFT, AS IT IS SCRUBBING THROUGH THAT RICE
4 PADDY.

5 AND YOU ARE LOOKING ALMOST RIGHT DOWN THE FLIGHT
6 PATH.

7 WAY OFF IN THE DISTANCE YOU SEE THE LITTLE BIT OF
8 RED, AND THEN YOU SEE THE BLACK SMOKE. THAT IS THE AREA
9 OF THE WING.

10 COMING BACK TOWARD THE RIVER, OVER TOWARD THE RIGHT,
11 YOU SEE THE T-TAIL LYING UPSIDE DOWN.

12 IT IS NOT TOO CLEAR IN THIS PICTURE, BUT, COMING
13 BACK FROM THAT WING FIRE, AND A LITTLE BIT TO THE LEFT,
14 YOU SEE A KIND OF BLACK OBJECT.

15 THAT IS THE AFT END OF THE TROOP COMPARTMENT.

16 OTHER SLIDES WOULD SHOW THAT MORE CLEARLY.

17 IT IS NOT TOO VISIBLE IN THIS PICTURE, BUT FURTHER
18 OVER TO THE LEFT WOULD BE THE CREW COMPARTMENT.

19 Q. SIR, YOU MENTIONED A DIKE.

20 A. YES.

21 Q. DID YOU HAVE OCCASION TO WALK IN THAT AREA
22 IN THE COURSE OF YOUR INVESTIGATION?

23 A. YES. YES, I DID.

24 Q. DO YOU HAVE AN ESTIMATE AS TO THE HEIGHT OF
25 THAT DIKE?

1 A. MY OPINION IS THAT THAT DIKE IS ABOUT FIVE-
2 FEET HIGH AND MAYBE FIVE-FEET WIDE, FIVE FEET HIGHER THAN
3 THE SURROUNDING FARM LAND.

4 Q. ALL RIGHT.

5 AND YOU MENTIONED IN THE MOVIE -- I THINK YOU MENTIONED
6 SOMETHING ABOUT SOMETHING ON THE DIKE, AND I DIDN'T CATCH
7 IT, AS YOU WERE EXPLAINING THE MOVIE.

8 A. WELL, AS THE AIRCRAFT CAME ACROSS TO THE SECOND
9 TOUCHDOWN POINT, THERE WERE TWO DISTURBANCES ON THAT DIKE.

10 I MENTIONED THERE WAS A SLIGHT DISTURBANCE WHERE
11 IT APPEARED THAT ONE OF THE -- THE LEFT-MOST ENGINE KIND
12 OF BRUSHED THE TOP OF THAT DIKE.

13 AND, THEN, FURTHER OVER, IN LINE WITH ALL OF THOSE
14 TRUCKS, THERE WAS MORE DISTURBANCE ON THAT DIKE CAUSED
15 BY THE LOWER SURFACE AND FUSELAGE OF THE AIRCRAFT.

16 Q. AND YOU MENTIONED SOMETHING ABOUT THE TRACKS
17 SHORTLY PAST THE DIKE; IS THAT WHAT YOU WERE REFERRING
18 TO?

19 A. YES, IT IS.

20 Q. ALL RIGHT.

21 A. IN FACT, THERE ARE SOME MARKS EVEN CLOSER TO
22 THE DIKE THAN THAT. YOU CAN SEE THE TWO WHITE MARKS
23 RIGHT THERE.

24 Q. HERE?

25 A. RIGHT.

1 Q. OF WHAT, IF ANY, SIGNIFICANCE ARE THESE FACTS
2 YOU HAVE JUST DESCRIBED, RELEVANT TO THE DIKE AND THE
3 MARKS?

4 A. WELL, MY OPINION IS THAT THE AIRCRAFT CONTACTED
5 THE EARTHEN DIKE AND THEN CONTACTED THIS RICE PADDY VERY
6 SHORTLY BEYOND THAT DIKE.

7 AND THAT THIS SCRUBBING ACTION ACTUALLY STARTED TO
8 SLOW THE AIRPLANE DOWN RIGHT AT THAT DIKE AND IN THAT
9 RICE PADDY.

10 IT STARTED TO SLOW DOWN BY THE SCRUBBING ACTION,
11 SCOOTING THROUGH THAT RICE PADDY, AND THE RIPPING AND
12 TEARING ACTION OF TEARING THESE AIRCRAFT PARTS LOOSE,
13 WHICH STARTED TO TUMBLE EVEN FROM THAT POINT.

14 Q. ALL RIGHT.

15 A. AND YOU CAN SEE SOME OF THE LITTLE WHITE DOTS
16 INDICATING THAT PARTS HAVE ALREADY BROKEN OFF THE AIRCRAFT
17 AND ARE TUMBLING FREE.

18 Q. WHAT, IF ANY, COMPONENTS LEFT THE AIRCRAFT
19 AT THAT POINT OF THE DIKE?

20 A. SEVERAL STRUCTURAL COMPONENTS WERE FOUND VERY
21 CLOSE DOWN BY THE DIKE.

22 AND, AS WE SAW IN THE MOVIE A MOMENT AGO, WE SAW
23 THAT PEDAL DOOR TUMBLING FROM THE DOWNWASH OF THE HELICOPTER.
24 THAT PEDAL DOOR IS ALMOST THE AFT-MOST PART ON THE AIRCRAFT,
25 SIR.

1 Q. ALL RIGHT.

2 A. THERE WERE SEVERAL COMPONENTS OF THE LANDING

3 GEAR. YOU KNOW, WE TALKED ABOUT THE LANDING GEAR STRUT

4 A WHILE AGO.

5 ONE OF THOSE WAS FOUND OFF TO THE LEFT AND ANOTHER

6 ONE OFF TO THE RIGHT.

7 IN FACT, IT IS MY OPINION THAT SOME OF THOSE TUMBLE

8 MARKS THAT YOU SEE THERE WERE CAUSED BY THAT LANDING GEAR

9 STRUT BEING DETACHED, AND IT STARTED BOUNDING TO THE LEFT.

10 MOVE THE POINTER A LITTLE BIT MORE, A LITTLE BIT

11 MORE TO THE LEFT, UP AN INCH, RIGHT THERE, AND THEN KIND

12 OF FOLLOW THAT PATH.

13 Q. THIS?

14 A. RIGHT.

15 Q. ALL RIGHT, SIR.

16 YOU OBSERVED THAT; DID YOU?

17 A. YES. I OBSERVED THAT, AND IT IS ALSO SHOWN

18 IN THE MOVIE.

19 IF THOSE PARTS BROKE OFF, IT TOOK FORCE TO BREAK

20 THEM OFF, AND THIS WOULD HAVE SLOWED THE AIRPLANE DOWN.

21 Q. ALL RIGHT.

22 A. SO THE SLOWING DOWN STARTED VERY QUICKLY.

23 Q. WHAT -- WITHDRAWN.

24 DO YOU HAVE AN OPINION, TO A REASONABLE MEDICAL CERTAINTY

25 AS TO -- I AM SORRY. DO YOU HAVE AN OPINION, TO A REASONABLE

1 SCIENTIFIC CERTAINTY, AS TO THE ATTITUDE OF THE AIRCRAFT
2 PASSING OVER THAT DIKE; AND WHAT, IF ANY, COMPONENTS BRUSHED
3 OR TOUCHED THE DIKE?

4 A. YES, I DO.

5 Q. WOULD YOU TELL US WHAT THAT IS, SIR?

6 A. AGAIN, LOOKING AT ALL OF THE EVIDENCE AND LOOKING
7 AT THE EVIDENCE ON THAT DIKE, THERE WAS THAT MAIN CONTACT WITH
8 THE DIKE BY THE LOWER FUSELAGE, AND THEN THAT LEFT WING
9 LOW, WHERE THAT LEFT ENGINE BRUSHED THE TOP OF THAT DIKE.
10 AND THEN FURTHER ON DOWN -- AND WE WILL SEE THIS LATER --
11 THE FLIGHT DECK WAS THE MOST INTACT PORTION OF ALL OF
12 THE STRUCTURE.

13 AND WHAT I AM TRYING TO SAY THERE IS THAT THE SIDE PANELS
14 FROM THE FLIGHT DECK, ALL THE WAY DOWN TO THE LOWER FUSELAGE,
15 WERE INTACT. THEY WERE SEVERELY DAMAGED, BUT STILL THERE,
16 EVEN AT THE FINAL RESTING POINT.

17 SO, IN ORDER FOR THAT TO BE THE MOST INTACT PART,
18 THE NOSE OF THE AIRCRAFT HAD TO GET OVER THAT DIKE.

19 AND THE NOSE GEAR WAS FOUND FURTHER AWAY, WAY, WAY,
20 WAY DOWN THAT TRACK, ALSO.

21 AND, THEN, SOME OF THE PARTS THAT WE FOUND FAIRLY
22 CLOSE TO THAT DIKE -- AND I MENTIONED THE PEDAL DOOR,
23 WHICH IS ALMOST THE AFT-MOST PART OF THE AIRCRAFT, INDICATING
24 THAT THAT IS THE PART THAT MOST PROBABLY CONTACTED THAT
25 DIKE.

1 SO THAT WOULD ALL INDICATE THAT THE NOSE OF THE AIRCRAFT

2 GOT OVER THE DIKE.

3 THE REAR-MOST PART OF THE AIRCRAFT BRUSHED THE DIKE
4 AND CONTACTED THE RICE PADDY EARLY.

5 SO THIS WOULD MEAN THAT THE AIRCRAFT CAME IN THERE
6 AT A FAIRLY LEVEL ATTITUDE, NOSE SLIGHTLY UP.

7 Q. ALL RIGHT, SIR.

8 THE NEXT ONE IS D-1400. CAN YOU TELL US WHAT THAT
9 SHOWS, SIR?

10 A. THIS IS A CLOSER VIEW OF THAT DIKE AREA. THE
11 DIKE RUNS FROM LEFT TO RIGHT, AND THAT IS --

12 Q. IS THIS THE DIKE HERE?

13 A. THAT IS THE MAIN IRRIGATION DIKE.

14 Q. ALL RIGHT.

15 A. AND OFF TO THE LEFT AND DOWN TO THE RIVER YOU
16 CAN SEE KIND OF A DARKENED PLACE THROUGH THAT VEGETATION,
17 INDICATING THAT THE ENGINE KIND OF CHEWED UP THE VEGETATION
18 GOING THROUGH THERE.

19 Q. WHERE WOULD THAT BE, SIR?

20 A. TO THE LEFT OF CENTER, LEFT, LEFT, LEFT, LEFT,
21 STOP, AND NOW COME DOWN.

22 Q. OKAY.

23 A. DO YOU SEE THAT DARKENED AREA RIGHT THERE?

24 Q. ALL RIGHT.

25 A. THAT VEGETATION IS KIND OF CHEWED UP AND GONE.

1 PROBABLY THE ENGINE, AS IT WENT THROUGH THERE, CHEWED
2 THAT UP, AND THEN THERE IS A DISTURBANCE OF THE DIKE DIRECTLY
3 IN FRONT OF THAT.

4 Q. ALL RIGHT.

5 A. BUT THAT IS A DISTURBANCE OF THE DIKE ONLY
6 FROM ONE ENGINE, AND NOT FROM TWO.

7 SO THE LEFT ENGINE WAS LOW ENOUGH TO CONTACT THE
8 DIKE, AND THE MOST INBOARD ENGINE DID NOT.

9 NOW, COMING ON ACROSS, WHERE YOU SEE THE MAIN PATH
10 OF THE AIRCRAFT, THESE WATER LINES BETWEEN THE DIKE AND
11 THE RIVER --

12 Q. HERE?

13 A. RIGHT.

14 (CONTINUING PREVIOUS ANSWER) -- INITIALLY, IT WAS
15 THOUGHT THAT THE LANDING GEAR STUBS KIND OF DRAGGED THROUGH
16 THAT.

17 BUT A CLOSER EXAMINATION OF THE PICTURES, ESPECIALLY
18 LIKE THIS, INDICATES THAT THERE IS A PATTERN TO THAT,
19 AND IT IS MOST LIKELY AN IRRIGATION PATTERN MADE BY THE
20 FARMER.

21 NOW, THE DIKE, THE TOP OF THE DIKE -- AND THE DIKE,
22 EVIDENTALY, HAS BEEN REPAIRED BY THE TIME THIS PICTURE
23 WAS TAKEN.

24 Q. HERE?

25 A. RIGHT THERE. THAT PART WAS KIND OF BRUSHED

1 OUT IN KIND OF A CIRCULAR FASHION. IT JUST KIND OF TOOK
2 A BITE OUT OF THAT DIKE.

3 AND THEN YOU SEE THE BLACKENED SOIL, JUST IMMEDIATELY
4 BEYOND THE DIKE, WHERE THE AIRCRAFT SETTLED INTO THAT
5 RICE PADDY FAIRLY SOON AND STARTED SCRUBBING THROUGH THERE.

6 Q. WHEN YOU SAY "FAIRLY SOON," YOU ARE TALKING
7 ABOUT DISTANCE?

8 A. DISTANCE, RIGHT.

9 Q. OKAY.

10 AND WHAT DISTANCE ARE YOU TALKING ABOUT?

11 A. YOU ARE ALMOST POINTING TO THE FIRST BLACK
12 MARK NOW. A LITTLE BIT FURTHER UP, RIGHT IN THERE. NOW,
13 COME BACK TOWARD THE DIKE. YOU SEE HOW -- COME BACK TOWARD
14 THE DIKE SOME MORE, AND SOME MORE.

15 YOU CAN SEE HOW CLOSE THAT BLACKENED MARK IS TO THE
16 DIKE. SO IT CONTACTED, DISTANCE-WISE, VERY CLOSE TO THAT
17 DIKE.

18 AND, THEN, AS YOU GO FURTHER UP THE RICE PADDY, WHY, THE
19 AIRCRAFT LOWER STRUCTURE STARTS TO SCRUB AWAY, AND THE JAGGED
20 METAL STARTS DIGGING THOSE DEEPENED TRENCHES.

21 AS SOME PART BREAKS OFF, IT KIND OF DIGS IN RATHER DEEPLY.
22 IN FACT, YOU SEE THAT TEARDROP SHAPE THERE. IT WAS MADE BY
23 SOMETHING THAT BROKE OFF AND DUG IN RATHER DEEPLY.

24 THOSE TRENCHES, OF COURSE, GO ON UP TOWARD THE REGULAR
25 FLIGHT PATH OF THE AIRCRAFT.

1 AGAIN, THAT LONG, CURVING IRRIGATION DITCH ON THE
2 LEFT, THAT IS FARM LAND. THAT IS NOT TO BE CONFUSED
3 WITH THE PATH OF THE AIRCRAFT.

4 Q. ALL RIGHT.

5 MR. DUBUC: I WOULD LIKE TO SHOW THE WITNESS
6 EXHIBIT D-1212, YOUR HONOR.

7 BY MR. DUBUC:

8 Q. SIR, I ASK YOU WHAT THIS IS?

9 A. THIS, AGAIN, IS AN ARTIST'S CONCEPT MADE AT
10 MY DIRECTION AND UNDER MY SUPERVISION, AND IT DEPICTS
11 THE AIRCRAFT AS IT APPROACHED THE DIKE OVER THE RIVER.

12 AND IT DEPICTS THE AIRCRAFT IN THIS SLIGHTLY NOSE-UP
13 ATTITUDE.

14 IT SHOWS, HERE, AGAIN, IN AN ARTIST'S CONCEPT, SOME
15 OF THE DAMAGE THAT WAS DONE TO THE AIRCRAFT AT THE FIRST
16 TOUCHDOWN POINT: THE BOGIES THAT BROKE OFF, AND THE STRUTS
17 THAT BROKE OFF.

18 IT SHOWS THE RAMP AS NOT BEING ON THE AIRPLANE AT
19 THIS TIME.

20 Q. THIS REFLECTS THE DAMAGE YOU PREVIOUSLY DESCRIBED
21 ON THE EAST SIDE OF THE RIVER?

22 A. THAT IS CORRECT.

23 Q. ALL RIGHT.

24 A. AND IT REFLECTS THE OPINION THAT I HAVE JUST
25 EXPRESSED AS TO HOW THE AIRCRAFT APPROACHED THAT DIKE,

1 SIR.

2 Q. ALL RIGHT.

3 MR. DUBUC: I WOULD LIKE TO OFFER THAT IN EVIDENCE
4 AND THEN SHOW IT TO THE JURY.

5 MR. LEWIS: FOR CLARIFICATION, YOUR HONOR,
6 THERE ARE TWO VERSIONS OF THIS. COULD I HAVE ONE MARKED
7 "A" AND ONE MARKED "B"?

8 I DON'T KNOW WHICH ONE HE IS SHOWING THEM.

9 THE COURT: CAN YOU SETTLE THAT AT THE INTERMISSION,
10 MR. LEWIS?

11 MR. LEWIS: YES, SIR.

12 MR. DUBUC: THANK YOU, YOUR HONOR.

13 THE COURT: I WILL RULE ON WHICH ONE WILL BE
14 RECEIVED AFTER THAT.

15 MR. DUBUC: YES, YOUR HONOR.

16 BY MR. DUBUC:

17 Q. JUST TELL THE JURY WHAT IS DEPICTED THERE,
18 SIR.

19 A. WELL, STARTING AT THE LEFT AND COMING ACROSS,
20 WE HAVE DRAWN IN A SMALL IRRIGATION DITCH, AND THEN WE
21 SHOW THE DIKE THAT COMES UP TOWARD THE AIRCRAFT.

22 AND, AS I STATED, MY OPINION IS THAT IT IS ABOUT
23 FIVE-FEET HIGH AND ABOUT FIVE-FEET WIDE.

24 IT SHOWS THE NOSE OF THE AIRCRAFT AS BEING SLIGHTLY
25 NOSE-UP.

1 AND IT SHOWS THAT THE NOSE GEAR IS RIGHT AT THE TOP
2 OF THE DIKE.

3 AND, COMING BACK ON THE AIRCRAFT, YOU SEE THE MAIN
4 BOGIE THERE. THAT BOGIE -- IF THE AIRCRAFT CONTINUES
5 IN THAT ATTITUDE, THAT BOGIE IS GOING TO CONTACT THAT
6 DIKE.

7 AND THEN YOU SEE SOME LOOSE DOORS, AND THINGS LIKE
8 THAT, MADE BY THE DAMAGE AT THE FIRST TOUCHDOWN.

9 AND WAY ON BACK, RIGHT UNDER THE STAR, IS THE RAMP
10 THAT WAS MISSING. IN FACT, THAT RAMP WAS MISSING FROM
11 THE IN-FLIGHT PROBLEM.

12 YOU WILL HAVE TO LOOK REAL CLOSE AT THAT BOGIE, THAT
13 MAIN BOGIE, WHERE YOU SEE THE TWO TIRES THERE.

14 Q. HERE?

15 A. RIGHT.

16 YOU HAVE TO LOOK REAL CLOSE. THE STRUT THAT IS
17 HANGING DOWN -- THE ONE ON THE SIDE NEAREST TO US IS BROKEN
18 OFF, AND THERE ARE NO TIRES ON IT.

19 SO THE TWO TIRES YOU SEE THERE, THE ARTIST DEPICTED
20 THOSE, AT MY DIRECTION, AS BEING REALLY THE TIRES ON THE
21 RIGHT FORWARD SIDE.

22 AND YOU SEE THE RIVER UNDER THE AFT END OF THE AIRCRAFT.

23 Q. ALL RIGHT, SIR.

24 A. NOW, THE PEDAL DOOR THAT I REFERRED TO, IF
25 YOU LOOK AT THE GAP WHERE THE RAMP WAS, THE PEDAL DOOR

1 THAT WE SAW BOUNDING THROUGH THE AIR WOULD BE IMMEDIATELY
2 AFTER THAT, RIGHT ABOUT IN THERE.

3 Q. HERE?

4 A. RIGHT, SIR.

5 IN FACT, YOU SAW THAT DIFFERENCE IN THE COLOR ON
6 THAT DOOR, AND THAT WOULD BE THAT DARK BLUE STRIPE THAT
7 SEPARATES THE TWO COLORS, RIGHT THERE.

8 YOU SAW PART OF THAT ON THAT PEDAL DOOR.

9 AND THAT IS ABOUT ALL.

10 Q. ALL RIGHT, SIR.

11 THE NEXT SLIDE I WOULD LIKE TO SHOW IS EXHIBIT D-1213.

12 MR. CONNORS: THAT IS ANOTHER PAINTING.

13 MR. DUBUC: SORRY?

14 MR. CONNORS: THAT IS ANOTHER PAINTING.

15 MR. DUBUC: ALL RIGHT.

16 BY MR. DUBUC:

17 Q. I WOULD LIKE TO SHOW THE WITNESS EXHIBIT D-1213,
18 YOUR HONOR.

19 CAN YOU TELL ME WHAT THAT IS?

20 A. YES.

21 THIS, AGAIN, IS ANOTHER ARTIST CONCEPT MADE AT MY
22 DIRECTION.

23 THIS WOULD SHOW THE AIRCRAFT AS IT HAS NOW SETTLED
24 INTO THE RICE PADDY BEYOND THAT DIKE. IT SHOWS, IN SIMPLIFIED
25 FORM, SOME OF THE PARTS COMING OFF OF THE AIRCRAFT.

1 IT SHOWS THE RESULTS OF THE SCRUBBING AND THE TRENCHES
2 AND THE WATER COLLECTING IN THOSE TRENCHES, AND SO FORTH.

3 Q. DOES THAT DEPICT WHAT YOU HAVE JUST DESCRIBED
4 PREVIOUSLY ABOUT THE DISTANCE AND THE MARKS BEYOND THE
5 DIKE?

6 A. YES, THIS DOES.

7 Q. ALL RIGHT.

8 MR. DUBUC: THAT IS EXHIBIT D-1213, AND, SIMILARLY,
9 I OFFER THAT ONE IN EVIDENCE, YOUR HONOR, AND I WOULD
10 LIKE TO SHOW IT TO THE JURY.

11 THE COURT: IS THERE ANY OBJECTION?

12 MR. LEWIS: I HAVE THE SAME PROBLEM AS BEFORE,
13 BUT I WILL HANDLE IT DURING THE RECESS.

14 THE COURT: THOSE KINDS OF PROBLEMS WE WILL
15 SETTLE DURING THE RECESS.

16 MR. LEWIS: NO OBJECTION.

17 THE COURT: I AM NOT RULING ON RECEIVING ANY
18 OF THESE UNTIL AFTER THE RECESS. YOU GO AHEAD AND USE
19 THEM.

20 MR. DUBUC: ALL RIGHT. THANK YOU, YOUR HONOR.

21 BY MR. DUBUC:

22 Q. WOULD YOU TELL US WHAT THAT DEPICTS, SIR?

23 A. OKAY.

24 STARTING BACK AT THE RIVER AND LOOKING AT THE DIKE --
25 AND IF YOU WOULD JUST LIFT THE POINTER UP THERE, AT THE

1 RIVER AND ON TOWARD THE DIKE, DOWN, FURTHER DOWN, A LITTLE
2 BIT TO THE LEFT, RIGHT THERE -- THAT WOULD BE THE DIKE.

3 THE DIFFERENCE IN COLOR THERE WOULD INDICATE THE
4 DISTURBANCE OF THAT DIKE MADE BY THE AFT END OF THE AIRCRAFT,
5 SIR.

6 THE BLACKENED SOIL JUST TO THE LEFT OF THAT DIKE
7 IS WHAT WE SAW IN SOME OF THE - PUT YOUR POINTER BACK
8 ON THE DIKE. RIGHT THERE.

9 THE DARKENED SOIL THERE, INDICATING A DISTURBANCE
10 OF THAT SOIL, IS WHAT WE SAW IN SOME OF THE PICTURES.

11 NOW, JUST TO THE LEFT OF THAT, DO YOU SEE THE PIECE
12 OF STRUCTURE?

13 Q. HERE?

14 A. YES.

15 Q. OKAY.

16 A. THAT WOULD DEPICT THE PEDAL DOOR THAT DEPARTED
17 THE AIRCRAFT ABOUT THAT POINT, AND WE SAW THAT IN THE
18 MOVIE BEING BLOWN ABOUT.

19 AND JUST TO THE LEFT OF THAT YOU SEE THE TRENCHES,
20 AND THE SOIL, AND THE WATER. THAT WAS DUG BY THE LOWER
21 STRUCTURE OF THE AIRCRAFT.

22 YOU HAVE TO KEEP IN MIND THAT THIS STRUCTURE IS NOW
23 JAGGED.

24 SOME OF IT WAS BROKEN, BECAUSE A LOT OF THIS DAMAGE
25 HAPPENED AS THE GEAR TUMBLED OUT FROM UNDER THE AIRCRAFT

1 OVER AT THE FIRST TOUCHDOWN POINT.

2 LOOKING AT THE AIRCRAFT, ITSELF, LET'S LOOK AT THE
3 MOST OUTBOARD ENGINE ON THE LEFT. PUT THE POINTER ON
4 THAT OUTBOARD ENGINE.

5 NO. NO. THIS -- THAT ONE.

6 AND, AGAIN, FROM THIS DISTANCE IT IS NOT TOO OBVIOUS,
7 BUT THE VERY LOWER SURFACE OF THAT ENGINE IS KIND OF SCRUBBED
8 UP, REFLECTING WHAT WE SAW IN THE MOTION PICTURE AND SOME
9 OF THESE OTHER SLIDES ABOUT THE DISTURBANCE IN THAT DIKE.

10 Q. OKAY.

11 A. NOW, YOU SEE THE MUD BEING SPRAYED UP, SOME
12 IN FRONT OF THE WING AND SOME AFT OF THE WING.

13 BECAUSE THERE WAS QUITE A BIT OF MUD SPRAY ON ALL
14 OF THE PARTS THAT WE FOUND.

15 AND JUST WHERE IT SAYS "U. S. AIR FORCE" THERE ON
16 THE FRONT OF THE AIRCRAFT, AND JUST IN FRONT OF THE WING,
17 YOU SEE SOME STRUCTURAL EROSION AND CRACKS FORMING IN
18 THE STRUCTURE, DUE TO THIS SCRUBBING AND ERODING ACTION.
19 AND THERE ARE A COUPLE OF THEM AFT OF THE WING, ALSO.

20 Q. SIR, DO YOU HAVE AN OPINION, TO A REASONABLE
21 SCIENTIFIC CERTAINTY, AS TO THE SEQUENCE OF EVENTS THAT
22 OCCURRED WHEN THE AIRCRAFT PASSED OVER THE DIKE AND TOUCHED
23 DOWN INITIALLY ON THE WEST SIDE OF THE RIVER?

24 A. YES.

25 THE INDICATION IS THAT THE AIRCRAFT, AGAIN, TOUCHED

1 DOWN FAIRLY SMOOTHLY.

2 BECAUSE THERE IS NO GREAT, BIG HOLE IN THE GROUND,
3 INDICATING THAT THE AIRPLANE CRASHED DOWN INTO THIS VERY
4 SOFT FARM LAND.

5 YOU KNOW, THE AIRPLANE WEIGHED 450,000 POUNDS, APPROXI-
6 MATELY.

7 IF THIS MUCH WEIGHT HAD CRASHED DOWN INTO THAT VERY
8 DAMP, WET SOIL, IT WOULD HAVE MADE A TREMENDOUS CAVITY.

9 IT DIDN'T DO THAT. INSTEAD, IT STARTED SCRUBBING
10 THOSE TRENCHES, AND SCRUBBED IT FOR QUITE A DISTANCE.

11 THE CRACKS THAT ARE SHOWN IN FRONT OF THE WING AND
12 AFT OF THE WING REFLECT THE PHYSICAL EVIDENCE ON SITE,
13 AND THAT IS, REALLY, THE FOUR SECTIONS THAT THE AIRCRAFT
14 BROKE UP INTO, THE FOUR MAJOR SECTIONS.

15 AND THE ONE FORWARD OF THE WING IS WHAT WE WOULD
16 CALL THE FLIGHT-DECK AREA AND THE FORWARD FUSELAGE.

17 AND THEN THE ONE AFT OF THE WING WOULD BE THE TROOP
18 COMPARTMENT AND, THEN, OF COURSE, THE T-TAIL.

19 MR. DUBUC: MAY WE HAVE THE NEXT SLIDE? I
20 THINK IT IS --

21 MR. CONNORS: D-1438.

22 MR. DUBUC: D-1438, RIGHT.

23 BY MR. DUBUC:

24 Q. WHAT IS THIS, SIR?

25 A. OW, WE HAVE COME ACROSS THE DIKE, AND WE ARE

1 ABOUT MID-WAY UP THAT FIRST LITTLE PLOT OF GROUND.

2 RIGHT IN THE CENTER OF THE PICTURE YOU SEE THE SCRUB

3 MARKS MADE BY THE AIRCRAFT, THE GROUND DISTURBANCE.

4 AS THE LOWER SKIN, AND SO FORTH, ERODED AWAY, WHY,

5 THEN, YOU MAKE TWO DISTINCT TRENCHES FROM THE TWO SIDES

6 OF THE AIRCRAFT.

7 NOW, OFF TO THE LEFT YOU SEE KIND OF A TUMBLE MARK,

8 LITTLE SPOTS IN THE SOIL SPACED 15 OR 20 FEET APART.

9 IT IS SOMETHING THAT IS NOW DETACHED FROM THE AIRCRAFT,

10 AND IT IS TUMBLING THROUGH THERE.

11 AND THERE ARE SOME MARKS THERE THAT GO OFF TO THE

12 RIGHT.

13 AND, AS I SAY, PART OF THE LANDING GEAR WAS FOUND

14 OFF TO THE RIGHT OF THE FLIGHT TRACK, AND ANOTHER PART

15 WAS FOUND OFF TO THE LEFT OF THE FLIGHT TRACK.

16 SO THERE WERE PARTS THAT WERE BREAKING FREE FROM

17 THE AIRCRAFT.

18 THE BREAKING OF THESE PARTS OFF SLOWED THE AIRPLANE

19 DOWN. SO THIS AIRPLANE SLOWING DOWN STARTED AND WAS CONTINUING,

20 AS WE SEE THROUGH THIS PICTURE.

21 AS YOU PROGRESS FURTHER UP THIS PATH, THE SCRUBBING

22 AWAY OF THE PARTS GOT TO THE POINT WHERE THE STRUCTURE

23 WAS DISRUPTED TO THE POINT WHERE THE AIRCRAFT SEPARATED

24 INTO FOUR DISTINCT SECTIONS.

25 AND, AT THE POINT WHERE IT SEPARATED, INSTEAD OF

1 HAVING ONE BIG AIRPLANE SCRUBBING THROUGH HERE, NOW YOU
2 HAVE, STILL ON THE GROUND, TWO PARTS. YOU REALLY HAVE
3 TWO PARTS.

4 YOU HAVE THE FLIGHT DECK, AND YOU HAVE THE TROOP
5 COMPARTMENT.

6 THE WING TOOK OFF AND FLEW WAY AHEAD, AND YOU SEE
7 THE T-TAIL OFF TO THE SIDE.

8 SO, NOW, AT SOME POINT UP HERE, YOU WOULD HAVE LESS
9 AIRCRAFT SCRUBBING THE GROUND.

10 AND, AT THAT SAME TIME, THOSE TWO SECTIONS OF THE
11 AIRCRAFT ARE SCRUBBING DIFFERENT PATHS. SO THE CHARACTER,
12 THE FINGERPRINT, WHATEVER YOU WANT TO CALL IT, OF THE
13 SCRUBBING ACTION THROUGH THAT RICE FIELD CHANGES, OF COURSE,
14 WHEN THE THING SEPARATES.

15 AND, THEN, A LOT OF THE WEIGHT FLIES OFF WITH THE
16 WING AND WITH THE T-TAIL.

17 THEN, ALSO, YOU HAVE THE TWO SEPARATE PATHS, RATHER
18 THAN ONE DISTINCT PATH.

19 SO THE CHARACTER CHANGES, AS YOU PROGRESS DOWN THROUGH
20 HERE.

21 Q. NOW, SIR, YOU MENTIONED THE WING FLEW OFF.
22 COULD YOU EXPLAIN WHAT YOU MEAN BY THAT?

23 A. WELL, YOU KNOW, THE AIRPLANE IS SLOWING DOWN,
24 BUT IT IS STILL -- IT STILL HAS FORWARD VELOCITY, FORWARD
25 SPEED.

1 THE WING, OF COURSE, IS DESIGNED TO LIFT THE AIRCRAFT;

2 AND, AS LONG AS IT HAS FORWARD SPEED, IT IS GOING TO HAVE
3 SOME AMOUNT OF LIFT.

4 AND AT THE POINT WHERE THE EROSION, AND SO FORTH,

5 DISTURB THE STRUCTURES TO THE POINT WHERE THE WING HAD
6 ENOUGH LIFT TO POP ITSELF LOOSE, AND SINCE IT STILL HAS
7 FORWARD VELOCITY, THE WING FLEW, LIKE ANY WING WOULD.

8 AND IT FLEW OFF A CONSIDERABLE DISTANCE AHEAD OF THE REST
9 OF THE AIRCRAFT.

10 IT WENT OFF SLIGHTLY TO THE RIGHT AND TUMBLED INTO

11 THE GROUND AND BROKE APART AND BURNED.

12 Q. ALL RIGHT, SIR.

13 NOW, MAY WE HAVE NEXT D-1439. CAN YOU TELL US WHAT

14 THAT IS, SIR?

15 A. WE ARE GOING FURTHER DOWN THE FLIGHT PATH,

16 AND YOU CAN SEE THE DEEP SCRUB MARKS DOWN TOWARD THE BOTTOM
17 OF THE PICTURE.

18 NOW, WE ARE KIND OF CROSSING THAT IRRIGATION CANAL.

19 AND RIGHT ABOUT IN HERE IS WHERE, IN MY OPINION, THE AIRCRAFT
20 SEPARATED INTO THE MAJOR SECTIONS.

21 AND, AS I SAID A WHILE AGO, WHEN IT SEPARATED, YOU

22 HAD LESS AIRCRAFT SCRUBBING THE GROUND, AND SCRUBBING,
23 IN FACT, TWO DIFFERENT PATHS.

24 SO THE FINGERPRINT OF THE SCRUBBING CHANGES. THERE

25 ARE SEVERAL DISTINCT THINGS IN HERE, THOUGH.

1 RIGHT IN THE MIDDLE OF THAT PATH, YOU NOTICE THAT

2 THE GREEN VEGETATION HAS JUST BEEN SCRUBBED RIGHT OFF

3 THE TOP OF THE GROUND.

4 SO YOU SEE THAT KIND OF A BROWNISH COLOR, AND THAT

5 IS THE SOIL THAT YOU ARE LOOKING AT.

6 AND THEN A LITTLE BIT OFF TO THE RIGHT AND A LITTLE

7 BIT OFF TO THE LEFT YOU SEE VEGETATION AGAIN.

8 I MENTIONED A WHILE AGO A LANDING-GEAR COMPONENT,

9 AND TO THE EXTREME LEFT AND BOTTOM OF THE PICTURE, YOU

10 SEE WHERE A PART WAS TUMBLING THROUGH THE WET SOIL.

11 YOU SEE THE PARTS TUMBLING THROUGH THERE, AND, HERE,

12 AGAIN, IT IS KIND OF HARD TO SEE. YOU HAVE TO USE A MAGNIFYING

13 GLASS.

14 BUT JUST TO THE LEFT OF THAT HELICOPTER IS A PART

15 THAT I IDENTIFIED AS BEING THE SIDE BRACE OF THE LANDING

16 GEAR, THE BIG PIECE OF METAL THAT KIND OF LOCKS IT IN

17 PLACE WHEN YOU LOCK THE GEAR UP.

18 AND THERE ARE OTHER SCRUB MARKS IN THERE OFF FROM

19 THE REAL PATH, INDICATING LOOSE PARTS. PARTS THAT DETACHED

20 FROM THE AIRCRAFT ARE SCRUBBING THROUGH THERE.

21 NOW, WAY UP TO THE TOP LEFT OF THE PICTURE, YOU SEE

22 THE FLIGHT DECK. THE TOP LEFT, RIGHT THERE.

23 Q. HERE?

24 A. RIGHT THERE.

25 Q. OKAY.

1 A. NOW, COMING BACK FROM THAT, YOU SEE THAT DARKENED -
2 NO, STRAIGHT BACK TOWARD THE FLIGHT PATH. NO. GO BACK.
3 NO, NO. GO BACK TO THE FLIGHT DECK. NOW, KIND OF COME
4 DOWN AND TO THE RIGHT, THAT DARKENED MARK. RIGHT THERE.
5 THAT IS IT.

6 THAT IS A SCRUB PATH THAT WOULD HAVE BEEN MADE BY
7 THE FLIGHT DECK.

8 AND, AS YOU SEE, YOU HAVE LESS AIRCRAFT AND LESS
9 WEIGHT NOW. SO IT DOESN'T SCRUB AS DEEPLY AS DID THE
10 TOTAL AIRCRAFT DOWN IN THE LOWER PART OF THE PICTURE.

11 AND THE SAME IS TRUE FOR THE TROOP COMPARTMENT. NOW,
12 LOOK AT THE AFT END OF THE TROOP COMPARTMENT UP AT THE
13 TOP, A LITTLE BIT TO THE LEFT.

14 NOW, THAT IS THE AFT END OF THE TROOP COMPARTMENT.

15 AND, FROM THIS EVIDENCE AND FROM THESE PICTURES,
16 THAT TROOP COMPARTMENT STAYED IN KIND OF A STRAIGHT-AHEAD
17 TYPE OF DIRECTION.

18 IT VEERED SLIGHTLY OFF TO THE LEFT.

19 NOW, COMING BACK FROM THAT TROOP COMPARTMENT, RIGHT
20 THERE, YOU CAN SEE THE SKID MARKS, AND YOU CAN SEE THE
21 WHITE WHERE THE WATER HAS COLLECTED.

22 BUT, YOU SEE, THESE TWO PARTS SEPARATED AND TOOK
23 DIFFERENT PATHS, AND, THEREFORE, GAVE A DIFFERENT SCRUBBING,
24 GROUND-DISTURBANCE INDICATION.

25 NOW, WAY OFF, UP TO THE TOP CENTER OF THE SCREEN,

1 YOU SEE THE WING THAT IS NOW ON FIRE. YOU SEE THE LITTLE
2 BIT OF FLAME THERE.

3 AND SO THERE ARE NO GROUND-DISTURBANCE MARKS ANYWHERE
4 NEAR THAT, OTHER THAN IN THE AREA OF THE FIRE.

5 SO THAT WING DIDN'T SCOOT AND SCRUB THROUGH THE SOIL.
6 IT KIND OF FLEW AND DROPPED IN OVER THERE.

7 AND YOU SEE THE T-TAIL KIND OF UPSIDE DOWN IN THE
8 PART OF THE PICTURE HERE.

9 THERE IS LOTS OF WATER IN THIS AREA.

10 Q. SIR, DID YOU HAVE OCCASION TO INSPECT THIS
11 AREA?

12 A. YES.

13 I, PERSONALLY, WALKED THAT AREA ON THE -- IN THE
14 FIRST GROUP OF PEOPLE THAT GOT THERE, THE FIRST GROUP
15 OF INVESTIGATORS, WHICH WAS 46 HOURS AFTER THE ACCIDENT.
16 AND THAT IS THE FIRST AREA THAT WE WENT TO.

17 I WALKED THAT AREA ON THE FIRST DAY, AND I WALKED
18 IT SEVERAL TIMES THAT DAY.

19 I CAN'T REMEMBER EXACTLY HOW MANY TIMES I WAS THERE.
20 IT WAS AROUND FOUR, OR FIVE, OR SIX. BUT I WALKED THAT
21 AREA TWO OR THREE TIMES ON EACH ONE OF THOSE TRIPS. SO
22 I HAVE BEEN IN THAT AREA MANY, MANY TIMES.

23 THE COURT: MR. DUBUC, WE WILL TAKE OUR MORNING RECESS
24 AT THIS TIME.

25 MR. DUBUC: OH, ALL RIGHT, YOUR HONOR.

1 THE COURT: EXCUSE THE JURY. WE WILL TAKE

2 ABOUT A TEN-MINUTE RECESS, GENTLEMEN.

3 (WHEREUPON, A BRIEF RECESS WAS TAKEN, AFTER WHICH THE
4 FOLLOWING PROCEEDINGS WERE HAD:)

5 (TRANSCRIPT CONTINUES ON PAGE 2493.)

1 THE COURT: BRING BACK THE JURY.

2 YOU MAY BE SEATED, MR. EDWARDS.

3 (WHEREUPON, THE JURY ENTERS THE COURTROOM AND
4 TAKES THEIR SEATS IN THE JURY BOX.)

5 BY MR. DUBUC:

6 Q SIR, WE WERE ON 1440.

7 MR. CONNORS: 1439 IS ON THE SCREEN NOW.

8 MR. DUBUC: GO TO 1440, PLEASE.

9 BY MR. DUBUC:

10 Q AND WHAT DOES THAT INDICATE, SIR? WHAT IS THAT?

11 A THIS IS A SCENE, AGAIN, PROGRESSING DOWN THE
12 PATH OF THE AIRCRAFT.

13 THE LARGE WATER TRENCH, THERE, THAT'S THAT
14 IRRIGATION DITCH WE TALKED ABOUT BEFORE.

15 AND OFF IN THE DISTANCE, TOP CENTER, YOU SEE
16 THE SMOKE FROM THE WING. A LITTLE BIT TO THE LEFT YOU
17 SEE THE TROOP COMPARTMENT, AND THE SKID MARKS OF THE
18 TROOP COMPARTMENT.

19 AND FURTHER TO THE LEFT IS THE FLIGHT DECK
20 AREA, AND THAT'S THE EXTREME LEFT.

21 I THINK ON THE RIGHT IS THE HELICOPTER SITTING
22 THERE, BUT YOU CAN SEE THE SKID MARKS OF THAT FLIGHT DECK
23 COMING BACK DOWN THE PICTURE, IN A KIND OF A LITTLE BIT
24 OF AN ARC-TYPE FASHION.

25 AND THE SAME THING WITH THE FLIGHT DECK.

1 ANY TIRES STILL ON THAT BOGIE.

2 THERE WERE SOME IN THIS AREA.

3 THE TIRES DISAPPEARED RATHER QUICKLY. THE
4 VIETNAMESE PEOPLE USE THOSE TIRES TO MAKE SHOES, AND THEY'RE
5 EASY TO CARRY OFF BECAUSE THEY ROLL. SO THE TIRES DIDN'T
6 STICK AROUND TOO LONG.

7 Q ALL RIGHT, SIR.

8 I'D LIKE TO SHOW YOU WHAT'S BEEN MARKED AS
9 EXHIBITS 1445-A, 1445-B AND 1445-C.

10 WOULD YOU TELL ME WHAT THOSE ARE, SIR?

11 A YES.

12 HERE, AGAIN, THESE ARE ARTISTS' CONCEPTS, MADE
13 AT MY DIRECTION AND UNDER MY SUPERVISION, THAT DEPICT
14 THE AIRCRAFT AS IT IS SCRUBBING DOWN THROUGH THIS RICE
15 PADDY, AND IT SHOWS THE AIRCRAFT IN ITS MAJOR SECTIONS.

16 IT'S COLOR CODED FOR EASY READING.

17 THERE ARE THREE DIFFERENT VIEWS SHOWING THE
18 AIRCRAFT AS IT PROGRESSES DOWN THE RICE PADDY, AND AS THE
19 EROSION ERODES AWAY THE LOWER SKIN AND THE EROSION
20 PROGRESSES UP THROUGH THE CARGO FLOOR AND FINALLY GOT
21 TO THE POINT WHERE THE EROSION GETS TO THE POINT WHERE
22 THE THING SEPARATES.

23 SO THESE THREE ARTISTS' CONCEPTS DEPICT WHAT
24 I'VE JUST TALKED ABOUT IN THIS EROSION PROCESS AND
25 PROGRESSING TO THE POINT OF SEPARATION INTO THE FOUR MAJOR

1 COMPONENTS OF THE AIRCRAFT, AS WE'VE TALKED ABOUT IN
2 THIS PICTURE.

3 Q SIR, DO YOU HAVE AN OPINION TO REASONABLE
4 SCIENTIFIC CERTAINTY AS TO THE SEQUENCE OF THAT EROSION
5 THAT YOU JUST DESCRIBED?

6 A YES, I DO.

7 Q WHAT IS IT, SIR?

8 A WELL, MY OPINION IS THAT THE AIRCRAFT CAME ACROSS
9 THE RIVER. IT HAD THE LOWER -- SOME OF THE BOGIES AND
10 SOME OF THE STRUTS HAD BEEN BROKEN OFF.

11 SOME OF THE LOWER SURFACE OF THE AIRCRAFT HAD
12 BEEN DAMAGED. THERE WAS ALL OF THOSE PARTS TUMBLING OUT.
13 AND THAT IT CONTACTED THE GROUND A VERY SHORT DISTANCE
14 FROM THAT RICE PADDY AND THAT THE AFT END OF THE AIRCRAFT,
15 SEVERAL PARTS WERE FOUND IN THAT AREA.

16 WE'VE SEEN THE PEDAL DOOR BLOWING ABOUT. WE'VE
17 SEEN THE LANDING GEAR STRUTS -- THERE'S ONE IN VIEW ON THAT
18 PICTURE -- AND SECTIONS OF THE CARGO FLOOR, ET CETERA,
19 FOUND IN THIS AREA. SECTIONS OF THE STRUCTURE THAT SURROUND
20 THE AFT RAMP WERE FOUND VERY EARLY DOWN HERE, INDICATING
21 THIS SCRUBBING ACTION, AND THEN PROGRESSING UP TO THIS
22 POINT, WHERE THAT THE SCRUBBING ERODED AWAY THE CARGO
23 FLOOR.

24 WHEN THE CARGO FLOOR ERODES AWAY, THEN YOU'VE
25 REALLY, SEVERELY, DISRUPTED THE STRUCTURAL INTEGRITY OF

1 AS I SAID BEFORE, ABOUT IN HERE IS WHERE THE AIRCRAFT
2 SEPARATED INTO THE MAJOR SECTIONS AND THE CHARACTER AND
3 SIGNATURE AND FINGERPRINT OF THE SKID MARKS CHANGED BECAUSE
4 YOU GOT LESS AIRCRAFT, AND ALSO THESE AIRCRAFT NOW ARE
5 GOING OFF IN SLIGHTLY DIFFERENT DIRECTIONS, THE WING GOING
6 THROUGH THE AIR AND THE TAIL FLIPPING OFF TO THE RIGHT.

7 Q ALL RIGHT, SIR.

8 A STILL SEE LOTS OF WATER AND YOU SEE THE GROUND
9 DISTURBANCE, THE DARKER CONDITION OF THE SOIL, WHERE THE
10 AIRCRAFT HAS SCRUBBED ALL THE GREEN VEGETATION OFF OF IT.

11 AND YOU SEE AIRCRAFT PARTS LYING TO THE RIGHT.

12 THE HELICOPTER ON THE EXTREME RIGHT OF THE
13 PICTURE, SITTING OVER IN THE RICE, AND JUST TO THE LEFT
14 OF THAT, RIGHT IN FRONT OF THE ROTOR BLADES, IN THE WATER,
15 JUST TO THE LEFT -- RIGHT THERE.

16 A VERY CLOSE-UP VIEW WOULD SHOW THAT TO BE
17 A PART OF THE LANDING GEAR. WE WOULD CALL THAT PART OF THE
18 LANDING GEAR STRUT.

19 AND AS I SAID THERE -- THAT ONE'S OFF TO THE
20 RIGHT. AND WE'VE PREVIOUSLY TALKED ABOUT ONE OFF TO THE
21 LEFT.

22 AND THAT'S WHY WE SAY THAT THOSE STRUTS GOT
23 ACROSS THE RIVER, AND IN FACT, THE ARTIST'S CONCEPT SHOWED
24 THOSE STRUTS STILL ATTACHED WITH THE AIRCRAFT.

25 CAN'T QUITE SEE WELL ENOUGH TO SEE IF THERE'S

1 AIRCRAFT, AND THEN, AT THAT POINT, IS WHERE THAT THE THING
2 SEPARATED INTO THE MAJOR SECTIONS, THE MAJOR SECTIONS
3 BEING THE TAIL, YOU SEE CLOSEST TO YOU, THE WING, OFF
4 FROM THE TOP, AND THEN THE AFT TROOP COMPARTMENT, IN
5 MORE OR LESS THE CENTER TOP, AND THEN THE FLIGHT DECK,
6 OVER IN THE LEFT.

7 AND THESE PICTURES DEPICT THIS SEQUENTIAL
8 EROSION AND SEPARATION OF THOSE PARTS.

9 Q ALL RIGHT, SIR.

10 I BELIEVE I REFERRED TO THOSE AS D1245. I
11 BELIEVE THEY ARE EXHIBITS D1245-A, 1245-B AND 1245-C.

12 MR. DUBUC: I'D LIKE TO OFFER THOSE IN EVIDENCE
13 AND THEN SHOW THEM TO THE JURY.

14 MR. LEWIS: I HAVE THE SAME PROBLEM, YOUR HONOR.

15 THE COURT: THEY WILL BE RECEIVED AT THE
16 CLOSE OF EVIDENCE.

17 I'LL CONSIDER THEM ALL AT THE CLOSE OF THE
18 EVIDENCE.

19 I GATHER YOU HAVEN'T HAD A CHANCE AT THE RECESS
20 TO WORK THAT OUT.

21 MR. DUBUC: YES, I THINK WE HAVE, YOUR HONOR.

22 MR. LEWIS: YES, WE DID TALK ABOUT IT.

23 MY PROBLEM IS IDENTIFICATION OF DIFFERENT SETS.

24 THE COURT: WE'LL DO THAT WITHOUT BOTHERING
25 THE JURY.

1 MR. LEWIS: OTHERWISE, I HAVE NO OBJECTION.

2 MR. DUBUC: ALL RIGHT, SIR.

3 BY MR. DUBUC:

4 Q THIS IS D1245-A.

5 WHAT IS THAT, SIR?

6 A YES. THIS IS THE FIRST IN A SEQUENCE OF THREE.

7 AND OFF TO THE RIGHT, LOWER RIGHT, YOU SEE THE
8 LITTLE DARKENED HUMP. THAT WOULD BE THE DIKE, THAT WE'VE
9 TALKED ABOUT.

10 AND JUST IMMEDIATELY TO THE LEFT OF THE DIKE
11 YOU SEE THE SURFACE OF THE RICE FIELD, AND YOU SEE THE
12 BROWNISH COLOR ON THE TOP.

13 THAT'S THE ARTIST'S METHOD OF DEPICTING THAT
14 SOMETHING DISTURBED THE GROUND AT THAT POINT.

15 AND WE'VE KIND OF SEEN THAT AS YOU SCRUB OFF
16 THE RICE, WHY, YOU SEE THE BROWNISH SOIL.

17 WE GOT A LOT OF COLORS ON THIS AND THIS IS TO
18 KIND OF HELP US KEEP TRACK OF THE THINGS FROM PICTURE TO
19 PICTURE -- THE PICTURE ON THE T-TAIL, AND THEN THE WHITE,
20 WHICH IS THE AFT FUSELAGE.

21 THE AFT TROOP COMPARTMENT, AS YOU SEE THERE
22 IN A KIND OF THE ORANGE, THAT'S THE MAIN COMPARTMENT THAT
23 WE'RE TALKING ABOUT.

24 AND YOU NOTICE THAT THAT'S KIND OF LIKE WE
25 WOULD CALL THE UPPER DECK. AND I REFER TO THIS AS LIKE

1 YOU'RE LIVING IN A THREE-STORY APARTMENT AND YOU'RE
2 LIVING ON THE THIRD FLOOR.

3 YOU'RE ABOUT THAT HIGH OFF THE GROUND. SO THE
4 GREEN UNDER THAT IS THE CARGO COMPARTMENT, AND THAT'S THE
5 LONG THING.

6 AND THEN UNDER THE CARGO COMPARTMENT YOU SEE
7 THE STRIP OF WHITE. THAT'S WHAT I WOULD CALL THE LOWER
8 SKIN AND THE UNDERFLOOR STRUCTURE OF THE AIRCRAFT.

9 AND THE WING AREA IS DEPICTED IN BLUE.

10 AND THEN YOU HAVE A YELLOW AREA FOR THE RELIEF
11 CREW COMPARTMENT, AND THEN A KIND OF A LIGHT BROWN FOR
12 THE FLIGHT -- THAT'S THE COMPARTMENT INHABITED BY THE
13 FLIGHT CREW.

14 AND YOU SEE THE FLIGHT WINDOWS THERE AND SO FORTH.

15 THE AIRCRAFT HAS JUST NOW TOUCHED DOWN IN
16 THIS AREA AND THE SCRUBBING HAS ALREADY STARTED AND THE
17 SLOWING DOWN OF THE AIRCRAFT HAS STARTED.

18 JUST UNDER THE WORD "CARGO" ON THAT PICTURE
19 YOU SEE THE RAMP THAT I MENTIONED PREVIOUSLY. THAT RAMP
20 IS MISSING.

21 YOU'VE GOT TO LOOK KIND OF CLOSELY, BUT RIGHT
22 AFTER THAT RAMP WE MENTIONED THAT A PEDAL DOOR SEPARATED
23 VERY EARLY.

24 NOW, IF YOU'LL NOTICE THERE, THERE'S A SLIGHT
25 DISCONTINUITY RIGHT AT THAT POINT.

1 NOW, WHAT WE'RE TRYING TO SHOW THERE IS THAT
2 THE PEDAL DOOR IS PROBABLY GONE VERY EARLY. IT MAY HAVE
3 EVEN BEEN KNOCKED OFF RIGHT AT THE DIKE.

4 SO THIS IS THE FIRST IN THE SEQUENCE OF THE
5 SCRUBBING.

6 THE OTHER PICTURES WILL SHOW THE SAME AIRCRAFT
7 BUT IT WILL SHOW THE AIRCRAFT IN PROGRESSIVE SCRUBBING
8 ACTIONS.

9 RIGHT NOW THE SKINLINE HAS JUST STARTED TO BE
10 ERODED AWAY.

11 Q THIS IS D1245-B.

12 A SAME AIRCRAFT.

13 AND YOU SEE MORE OF THE DARKER COLOR IN THE SOIL.
14 AND YOU SEE THAT THAT DARKER COLOR OF THE SOIL HAS PROGRESSED
15 UP CLOSER TO THE CARGO COMPARTMENT, CLOSER TO THAT GREEN
16 AREA.

17 AND YOU'LL ALSO NOTICE THAT YOU DON'T SEE ON
18 THE EXTREME RIGHT -- YOU DON'T SEE THE DIKE ANYMORE.

19 SO THE AIRPLANE HAS NOW PROCEEDED BEYOND THE
20 DIKE. THE SCRUBBING HAS SCRUBBED WAY INTO THE FLOOR OF --
21 INTO THE UNDERSTRUCTURE OF THE AIRCRAFT, GETTING RIGHT
22 UP AT THE CARGO FLOOR.

23 ONCE THAT CARGO FLOOR IS SCRUBBED THROUGH,
24 IT'S KIND OF LIKE CUTTING THE BOTTOM OF A BOX. WHEN YOU
25 CUT THE BOTTOM OFF OF A BOX, THE BOX DOESN'T HAVE ANY

STRENGTH ANYMORE.

Q THIS IS EXHIBIT D1245-C.

A THIS IS THE LAST IN THE SEQUENCE OF THREE.

WE COULD HAVE MADE MANY, MANY IN-BETWEEN THINGS,

5 BUT I THINK THIS GETS US RIGHT TO THE POINT.

AGAIN, YOU SEE THE SCRUBBING ACTION HAS

7 PROGRESSED NOW FARTHER UP INTO THE AIRCRAFT.

IN FACT, IT'S PROGRESSED UP BEYOND THE CARGO
RIGHT UNDER THE BLUE AREA, THE WING, YOU'LL
SEE A DARK LINE GOING DOWN FRONT, FROM THE WING --

YOU SEE THE DARKENED LINE THERE?

3 THAT DARKENED LINE INDICATES THAT THAT'S A
4 POINT WHERE THAT THE WING SEPARATED FROM THE REST OF THE
5 AIRCRAFT.

I MENTIONED IN THE MOVIE THAT WE COULD SEE THE
STILL TIED TO THE WING AND THE WING LYING

THAT DARKENED LINE RIGHT THERE IS, AT LEAST
RACY OF AN ARTIST, IS LOCATED WHERE THAT MAIN
BE ON THE AIRCRAFT, AND REPRESENTS APPROXIMATELY
OF THE MAIN FRAME, STILL TIED TO THAT WING.

ON THE BLUE, AGAIN -- AND THERE'S ANOTHER 'DARK
AFT END OF THAT WING, A DARKENED LINE COMING
GROUND

1 YOU CAN SEE THAT. NOW, THAT REPRESENTS THE

2 BREAK POINT -- GO ON FORWARD.

3 FORWARD. FORWARD ON UP TO THE BLUE.

4 OKAY.

5 NOW, YOU SEE THAT LINE RIGHT THERE, COMING
6 STRAIGHT DOWN?

7 OKAY. NOW, THAT REPRESENTS THE BREAK POINT ON
8 THE AFT SIDE OF THE WING, WHERE THE WING JUST KIND OF
9 PULLED UP AND PULLED OUT THAT PORTION OF THE FUSELAGE WITH
10 IT.

11 AND THAT WAS ALL LINED WITH THE WING. WE SAW
12 THAT IN THE MOVIE AND WE SAW THAT IN SOME SLIDES.

13 YOU SEE THE TROOP COMPARTMENT IS STILL RIDING
14 HIGH AND YOU SEE SOME OF THE SIDE PANELS, THE GREEN, COMING
15 DOWN TO THE GROUND.

16 SEE THERE?

17 SO YOU'RE STILL APPRECIABLY ABOVE THE GROUND.
18 YOU'VE GOT AN APPRECIABLE LENGTH OF SIDE PANELS WITH YOU.

19 AND, IN FACT, BACK TO THAT -- UP WHERE THE
20 ARROW COMES DOWN TO THE TROOP COMPARTMENT, AFT TROOP
21 COMPARTMENT, COME DOWN.

22 YOU SEE THAT AFT OPENING RIGHT THERE?

23 COME BACK A LITTLE BIT. THERE.

24 THE SIDE PANEL OF THAT FUSELAGE WAS WITH THAT
25 TROOP COMPARTMENT, DOWN, AT LEAST ONE PIECE RIGHT UNDER THAT

1 WINDOW, WAS DOWN TO JUST ABOUT, SCHEMATICALLY, THE LENGTH
2 THAT YOU SEE RIGHT THERE.

3 NOW, IT WAS NOT UNIFORM. IT WAS JAGGED AND
4 TORN AND ALL THAT. BUT AT LEAST A LOT OF THAT SIDE PANEL
5 WAS WITH THAT TROOP COMPARTMENT AT ITS FINAL STOPPING POINT.

6 COMING AFT, INTO THE WHITE AREA -- AND YOU SEE
7 THAT DARK LINE THAT GOES TOP TO BOTTOM?

8 FORWARD. RIGHT THERE. TOP TO BOTTOM.

9 THE AFT TROOP COMPARTMENT, AS IT CAME TO REST
10 IN THE RICE PADDY, ACTUALLY SEPARATED AT THAT POINT.

11 NOW, YOU WILL NOTICE THAT THAT'S APPRECIABLY
12 AFT OF THAT ORANGE AREA THAT WE CALL THE AFT TROOP
13 COMPARTMENT.

14 SO THERE WAS SOME DEGREE OF OVERHANGING
15 STRUCTURE OF THE WHITE DEPICTED AFT EMPENNAGE STILL ATTACHED
16 TO THIS FUSELAGE.

17 SO WHAT YOU FOUND IN THE RICE PADDY WAS MORE
18 THAN JUST THE AFT TROOP COMPARTMENT. IT WAS THAT PART
19 HANGING FROM THERE.

20 COMING ON AFT FROM THAT LINE YOU SEE ANOTHER
21 DARK CRACK-TYPE THING, BUT IT'S ONLY PART OF THE WAY UP.

22 NOW, AFTER THE T-TAIL SEPARATED FROM THE
23 AIRCRAFT THIS PART MOST PROBABLY WAS STILL ATTACHED TO IT,
24 BECAUSE WHEN IT FLIPPED OVER AND LANDED OFF TO THE RIGHT,
25 THAT IS THE PART THAT YOU SEE KIND OF LYING UPSIDE-DOWN.

1 AND MY OPINION IS THAT THEY HAD TO BE TIED
2 TOGETHER AT LEAST IN SOME MANNER IN ORDER TO END UP THAT
3 CLOSE TOGETHER.

4 THE PURPLE, THE T-TAIL -- THE T-TAIL, THE
5 ARROW THERE INDICATES THAT THIS THING FLIPPED OFF TO THE
6 RIGHT, AS YOU SAW IN THE PICTURE.

7 GOING BACK TO THE BLUE AREA, IT SHOWS THE
8 ARTIST'S CONCEPT OF THE WING LIFTING ITSELF FREE AND FLYING
9 UP, AND THEN IT KIND OF TURNS THE LOOPS AND FLIPS OVER,
10 BECAUSE IT FOUND UP FAR AHEAD OF THE GENERAL AREA, AND IT
11 WAS LYING UPSIDE-DOWN.

12 SO THIS ARTIST'S CONCEPT DEPICTS, IN MY
13 OPINION, AN ACCURATE DESCRIPTION OF THE SEQUENCE OF THE
14 EROSION AND THE SEQUENCE OF BREAK-UP INTO THESE FOUR MAJOR
15 SECTIONS.

16 AND AS I MENTIONED IN ONE OF THE SLIDES A
17 WHILE AGO, ONCE THE WING LEAVES THE AIRCRAFT, AND ONCE
18 THE TAIL, T-TAIL, LEAVES THE AIRCRAFT, NOW YOU HAVE LESS
19 AIRCRAFT WEIGHT AND LESS AIRCRAFT PARTS TO SCRUB THROUGH
20 THE SOIL, SO THAT DEEPNESS, ET CETERA, AND THE SIGNATURE
21 OF THE SCRUB MARKS WILL BE DIFFERENT.

22 AND ALSO THE FACT THAT THE FLIGHT DECK AREA
23 WENT OFF IN A KIND OF A DIFFERENT PATH THAN DID THE AFT
24 TROOP COMPARTMENT, WHEREAS, UP TO THIS POINT YOU HAD THE
25 WHOLE AIRPLANE SCRUBBING THROUGH THERE.

1 OKAY?

2 Q YES, SIR.

3 NOW, ARE THOSE OPINIONS -- YOU'VE MENTIONED
4 YOUR OPINION SEVERAL TIMES GOING THROUGH THIS DESCRIPTION --
5 ARE THOSE TO A REASONABLE SCIENTIFIC CERTAINTY?

6 A YES, THEY ARE.

7 AND THEY'RE BASED ON ON-SITE OBSERVATIONS. I'VE
8 WALKED THAT AREA MANY TIMES. I'VE EXAMINED THOSE PARTS,
9 LOOKED AT THE PARTS THAT WE FOUND, SOME OF THE FUSELAGE
10 PARTS FOUND WAY BACK TOWARD THE DIKE, OTHER PARTS FOUND
11 IN OTHER AREAS, AND SO FORTH.

12 AND IN MY OPINION THAT REPRESENTS, WITH
13 REASONABLE ENGINEERING CERTAINTY, THE SEQUENCE OF THE
14 BREAK-UP.

15 MR. LEWIS: COULD WE APPROACH THE BENCH,
16 YOUR HONOR?

17 THE COURT: YES.

18 (WHEREUPON, THE WITNESS STEPS DOWN FROM THE
19 WITNESS STAND, COUNSEL FOR ALL PARTIES APPROACH THE BENCH
20 AND CONFER WITH THE COURT, AS FOLLOWS:)

21 MR. LEWIS: YOUR HONOR, THE WITNESS IS GIVING,
22 GENERALLY SPEAKING, A NARRATIVE AND HE REPEATS THINGS AND
23 SO FORTH, IN A FORM THAT IS VERY DIFFICULT.

24 I WANTED TO MAKE AN OBJECTION.

25 FOR EXAMPLE, HE MENTIONED SEVERAL TIMES ABOUT

1 THE WEIGHT AND THE FACT THAT THEY DON'T DIG TRACKS. AND
2 IN THE FORM IN THAT COUNSEL -- HE JUST SAYS, "WHAT IS YOUR
3 VIEW?", AND THE MAN KEEPS RAMBLING ON AND ON.

4 THE LAST TIME, FOR EXAMPLE, HE ASKED HIM, "IS
5 THAT YOUR OPINION WITH REASONABLE SCIENTIFIC CERTAINTY?"

6 HE JUST DIDN'T SAY IT. WAS. THE TALKED ABOUT VARIOUS
7 THINGS, WHICH ARE NOT RESPONSIVE.

8 NOW, I DON'T AT ALL MEAN TO BE OBSTRUCTIONIST
9 OR WANT TO INTERFERE WITH MR. DUBUC'S EXAMINATION, AND I'M
10 TRYING TO BE VERY RESTRAINED.

11 BUT I WOULD HOPE THAT HE COULD AT LEAST ASK
12 QUESTIONS THAT WOULD FRAME AN AREA THAT I COULD DECIDE
13 WHETHER OR NOT I WISH TO OBJECT.

14 MR. DUBUC: I'LL TRY TO.

15 THE COURT: I DIDN'T WANT TO ASK THIS IN FRONT
16 OF THE JURY, MR. DUBUC, BUT WHILE WE WERE UP HERE --
17 MR. LEWIS, YOU LOOK, TOO.

18 THE WAY THAT IS DEPICTED, IT LOOKS LIKE THE
19 PLANE IS GOING DOWNHILL.

20 MR. LEWIS: IT DOES, DOESN'T IT.

21 MR. DUBUC: THAT IS NOT INTENDED TO BE THAT WAY.

22 THE COURT: I UNDERSTAND THAT.

23 BUT I DON'T WANT TO RAISE THAT IN FRONT OF THE
24 JURY. BUT I DIDN'T WANT TO LET IT GO BY WHILE YOU HAD
25 YOUR WITNESS.

1 MR. DUBUC: I DON'T INTEND TO ASK HIM ABOUT
2 THAT. IF SOMEBODY ELSE WANTS TO -- .

3 THE COURT: LEAVE IT FOR CROSS EXAMINATION.

4 (WHEREUPON, THE PROCEEDINGS HAD AT THE BENCH
5 WERE CONCLUDED, THE WITNESS RESUMED THE WITNESS STAND, AND
6 THE TRIAL CONTINUED, AS FOLLOWS:)

7 MR. DUBUC: MAY WE HAVE THE NEXT SLIDE, PLEASE?

8 I BELIEVE IT'S D1364.

9 BY MR. DUBUC:

10 Q SIR, DO YOU RECOGNIZE THIS?

11 A YES, I DO.

12 Q AND WHAT IS THIS?

13 A THIS IS AN OVERHEAD VIEW OF THE GENERAL AREA
14 OF THREE OF THE MAJOR SECTIONS. THE WING IS NOT QUITE
15 VISIBLE IN VIEW. IT WOULD BE OFF TO THE RIGHT, LOWER RIGHT.

16 STARTING FROM THE LEFT, ABOUT A FOOT OVER FROM
17 THE LEFT, YOU SEE THE T-TAIL, WHICH IS LYING OFF TO THE
18 RIGHT OF THE BASIC PATH OF THE AIRCRAFT.

19 GOING FURTHER TO THE RIGHT YOU SEE THE LONG
20 OBJECT THERE. THAT'S THE AFT TROOP COMPARTMENT.

21 THE AFT END OF THE TROOP COMPARTMENT IS ON
22 THE LEFT. THE FORWARD END IS OVER TO THE RIGHT.

23 AND YOU SEE THE SKID MARKS OF THAT, THE GROUND
24 DISTURBANCE, AND EROSION OF THAT, AS IT PROGRESSED BACK
25 TO THE LEFT.

1 AND ON THE LEFT YOU SEE, RIGHT IN LINE WITH
2 THOSE SKID MARKS, YOU SEE A PIECE OF THE CARGO FLOOR. AND
3 THEN THERE'S VARIOUS LOOSE PIECES OF THE AIRCRAFT THAT
4 ARE SCATTERED THROUGHOUT.

5 NOT TOO VISIBLE HERE, BUT RIGHT IMMEDIATELY
6 ABOVE THAT T-TAIL IS THE NOSE GEAR OF THE AIRCRAFT.

7 AND THIS IS HARD EVIDENCE THAT THE NOSE GEAR
8 GOT ACROSS THE RIVER AND GOT ACROSS THAT DIKE AND TUMBLED
9 AN APPRECIABLE DISTANCE DOWN THAT PATH.

10 THE FLIGHT DECK UP ON THE RIGHT AND SIDE -- IT'S
11 KIND OF HARD TO IDENTIFY IN THIS PICTURE, BUT HERE, AGAIN,
12 YOU SEE THE SKID MARKS COMING BACK TOWARD THAT LEFT SIDE
13 OF THE PICTURE, AND IT'S IN A DIFFERENT PATH AND DIFFERENT
14 DIRECTION.

15 AND AS I SAID BEFORE, THE SKID MARKS CHANGED
16 THEIR PATTERN AND THEIR FINGERPRINT AS THE EROSION
17 CONTINUES.

18 Q SIR, DID YOU WALK THROUGH THIS AREA ALSO?

19 A I WALKED THAT AREA MANY TIMES.

20 I WALKED THAT AREA ESPECIALLY ON THE FIRST DAY,
21 AND I WAS IN THE TROOP COMPARTMENT, IN AND OUT OF THE
22 TROOP COMPARTMENT, IN AND AROUND THE TROOP COMPARTMENT,
23 THE AFT END AND AROUND THE FRONT END.

24 I WAS OVER TO THE FLIGHT DECK, AND I WENT OVER
25 THERE ON THE VERY FIRST DAY, TO TRY TO TAKE PICTURES OF ALL

1 THE FLIGHT CONTROL LEVERS AND INSTRUMENTS AND SO FORTH,
2 AND FOUND THAT THAT COULD NOT ACCOMPLISH ANYTHING BECAUSE
3 IT HAD BEEN DISTURBED.

4 I WALKED OVER THE WING AREA, WHICH YOU CAN'T
5 SEE HERE. BUT I WALKED AROUND THAT, WALKED UP ON THE WING,
6 AND NOTED THE GENERAL CONDITION OF THE WING.

7 Q ALL RIGHT, SIR.

8 NOW, DO YOU HAVE AN OPINION, TO REASONABLE
9 SCIENTIFIC CERTAINTY, AS TO THE RELATIONSHIP OF THE
10 EROSION YOU JUST PREVIOUSLY DESCRIBED WITH RESPECT TO THOSE
11 OTHER EXHIBITS AND THE POINT OF BREAK-UP AND SEQUENCE OF
12 EVENTS AFTER BREAK-UP RELATIVE TO THE TROOP COMPARTMENT,
13 THE FLIGHT DECK AND THE WING?

14 A YES, I DO.

15 Q WHAT IS THAT, SIR?

16 A MY OPINION IS THAT THE SEPARATION OF THESE MAJOR
17 COMPONENTS OCCURRED FURTHER DOWN THE TRACK THAN WHAT YOU
18 CAN SEE ON THAT PICTURE, AND FROM THAT POINT OF WHERE
19 THE WING LIFTED ITSELF FREE.

20 AND WHEN THE WING LIFTED ITSELF FREE, THEN THE
21 FLIGHT DECK AND THE TROOP COMPARTMENT WERE TWO SEPARATE
22 OBJECTS -- OCCURRED ABOUT SIMULTANEOUSLY TO THE T-TAIL
23 LIFTING ITSELF FREE.

24 BUT NOW, THE FLIGHT DECK AND THE T-TAIL BEING
25 TWO SEPARATE OBJECTS.

1 AND THE FLIGHT DECK, AT LEAST THE LOWER STRUCTURE
2 BEING MORE INTACT, AND IT WAS THEREFORE EASIER FOR IT TO
3 SLIDE THROUGH THIS RICE FIELD THAN IT WAS THE AFT TROOP
4 COMPARTMENT, AND THEREFORE, THE FLIGHT DECK WOULD HAVE
5 PROGRESSED FURTHER, AND IT DID.

6 AND IF YOU TAKE THE PATH OF THE TROOP COMPARTMENT
7 AND YOU DRAW A LINE BACK IN THAT PATH, AND THEN YOU TAKE
8 THE FLIGHT DECK, AND IF YOU DRAW A LINE BACK THROUGH THAT
9 PATH, AND YOU'LL FIND THAT THOSE LINES WOULD INTERSECT
10 ABOUT THE POINT THAT I TALKED ABOUT ON SOME OF THE PREVIOUS
11 LINES, WHERE THE SEPARATION OCCURRED.

12 MY OPINION IS THAT BOTH OF THESE SECTIONS OF
13 THE AIRCRAFT WAS IN CONSTANT CONTACT WITH THE GROUND,
14 BECAUSE THERE WERE SKID MARKS THROUGHOUT, FROM ONE END TO
15 THE OTHER, THE TYPE OF SKID MARKS DID CHANGE AS THE
16 EROSION CHANGED.

17 GRANTED. THAT WAS EXPECTED.

18 THERE WERE NO DEEP DEPRESSIONS IN THAT AREA
19 THAT WOULD BE INDICATIVE OF SOMETHING BOUNDING THROUGH
20 THE AIR AND ALL OF A SUDDEN CONTACTING THE GROUND AT A
21 GREAT VELOCITY, OR FORWARD VELOCITY OR RATE OF DESCENT.

22 THAT DIDN'T EXIST.

23 THE STATEMENTS OF THE MEMBERS OF THE CREW WHO
24 WERE IN THOSE COMPARTMENTS, ALTHOUGH IT WASN'T A VERY
25 PLEASANT RIDE -- I'M SURE IT WAS A BUMPY RIDE -- THAT THEY

1 DO NOT INDICATE ANY SEVERE BOUNCING UP AND DOWN.

2 THEY DID NOT INDICATE ANY SEVERE BOUNCING
3 FROM SIDE TO SIDE.

4 THE STATEMENTS INDICATE THAT THE ADULT PEOPLE
5 WERE SEATED IN THE AISLES, NO SEATBELTS, SITTING IN THE
6 AISLES, HOLDING ONTO THE SEATS, AND THAT THE ONES AT LEAST
7 THAT KEPT THEIR HANDS ON THE SEATS, STAYED WHERE THEY
8 WERE -- SOME PEOPLE WOULD TURN ONE HAND LOOSE AND DO
9 SOMETHING AND WERE PULLED LOOSE AND WOULD SLIDE FORWARD.

10 AND SOME OF THE PEOPLE THAT TURNED LOOSE AND
11 SLID FORWARD, YES, THEY WOULD -- AND YOU CAN GET HURT VERY
12 EASILY BY GETTING THROWEAD AROUND IN A CITY BUS.

13 AND THAT'S ABOUT THE NATURE OF THEIR STATEMENTS
14 IN THE VARIOUS COLLATERAL BOARD STATEMENTS, ET CETERA.

15 SO MY REASONABLE OPINION IS THAT THEY STAYED
16 IN CONSTANT CONTACT WITH THE GROUND, DID NOT BOUND
17 THROUGH THE AIR AND CONTACT THE GROUND WITH A GREAT
18 VELOCITY, AND THERE WERE NO SUDDEN CHANGES IN THE
19 ELEVATIONS OF THE SOIL.

20 IT WAS GENERAL FARMLAND SOIL. NOT PERFECTLY
21 LEVEL, OF COURSE, BUT LEVEL AS YOU'LL FIND ANY FARMLAND.

22 THERE WERE NO HILLS ANYWHERE, NO ROCKS. I
23 DIDN'T SEE A ROCK IN THE WHOLE PLACE.

24 IN THIS PARTICULAR AREA THERE WEREN'T ANY TREES.
25 THERE WEREN'T ANY HILLS -- ESPECIALLY IN AND AROUND THE

1 TROOP COMPARTMENT.

2 AFT OF THE TROOP COMPARTMENT, FORWARD OF THE
3 TROOP COMPARTMENT -- IN FACT, WE SAW WATER STANDING IN THE
4 AFT END, WE SAW WATER STANDING ON THE SIDES, WE SAW
5 INDICATIONS OF WATER RIGHT AT THE FRONT OF THE TROOP
6 COMPARTMENT.

7 IN MY OPINION, AND BASED ON PERSONALLY WALKING
8 IN AND AROUND THAT TROOP COMPARTMENT -- I WALKED THROUGH A
9 GREAT DEAL OF WATER.

10 Q ALL RIGHT, SIR.

11 I BELIEVE THE NEXT PICTURE IS D1376.

12 WHAT IS THAT, SIR?

13 A THIS IS A VIEW OF THAT AFT TROOP COMPARTMENT.
14 WE'RE LOOKING KIND OF OFF TO THE SIDE, BUT WE'RE LOOKING
15 AT THE AFT END.

16 AND GOING UP TO THE TOP LEFT IS THE FRONT
17 END OF THE TROOP COMPARTMENT.

18 YOU SEE THE TWO EXIT DOORS THERE. YOU SEE THE
19 SIDE PANELS FOLDED OUT.

20 IF YOU PUT YOUR POINTER UP THERE --

21 Q WHERE ARE THE SIDE PANELS? THAT'S WHAT I
22 WANTED TO ASK YOU.

23 A OKAY.

24 GO UP. GO FORWARD. FORWARD. DOWN, DOWN.

25 RIGHT THERE IS WHAT I WOULD CALL A SIDE PANEL.

1 NOW, THAT IS REALLY A PART OF THE FUSELAGE.

2 AND AS I MENTIONED ON THIS ARTIST CONCEPT, WHERE WE SHOWED
3 THE EROSION OF THE SIDE PANEL -- AND I MENTIONED THAT JUST
4 BELOW THAT EXIT -- RIGHT BELOW THAT EXIT AND TO THE LEFT --
5 TO THE LEFT OF THE EXIT.

6 UP. UP. LEFT. DOWN. DOWN. DOWN A LITTLE
7 BIT MORE. TOWARD YOU, RIGHT ABOUT -- . SEE THAT LITTLE
8 NOTCH RIGHT THERE?

9 THAT NOTCH IS ACTUALLY THE CUT-OUT FOR THAT
10 LOWER DOOR IN THE FUSELAGE.

11 SO WHAT YOU SEE IN THAT PICTURE PROVES THAT
12 THAT SIDE PANEL, DOWN TO AT LEAST THAT AREA, WAS STILL
13 ATTACHED TO THE AFT TROOP COMPARTMENT.

14 Q WHERE WOULD THE FLOOR OF THE TROOP COMPARTMENT
15 BE, IF IT'S POSSIBLE TO JUST INDICATE ON THIS, RELATIVE
16 TO THE WHOLE TROOP COMPARTMENT?

17 A LET'S GO BACK TO THE EXIT.

18 Q YES, SIR.

19 A OKAY.

20 AND RIGHT, JUST TO THE BOTTOM OF THAT EXIT --
21 AND THE FLOOR LEVEL STARTS RIGHT THERE AND GOES ACROSS,
22 GOES FORE AND AFT, LIKE THAT, AND IT GOES ACROSS THE
23 AIRPLANE.

24 THE FLOOR WAS ABOVE THE WATER LINE AND THERE
25 ARE SOME FLOOR BEAMS THAT RUN ACROSS THE AIRPLANE UNDER

1 THAT, UNDER THAT FLOOR, AND THOSE FLOOR BEAMS WERE STILL
2 THERE.

3 THE FLOOR WAS STILL INTACT.

4 Q ALL RIGHT, SIR.

5 A THE FLOOR IN THIS CASE DOES NOT EXTEND ALL
6 THE WAY TO THE BACK END. IT STOPS RIGHT -- WELL, WE TALKED
7 ABOUT SOME ADDITIONAL EMPENNAGE TIED TO THAT COMPARTMENT.

8 AND, OF COURSE, THERE WAS NO FLOOR THERE, IN
9 THAT AFT SECTION.

10 THE WITNESS: LET'S HAVE D1383.

11 THE WITNESS: SAME VIEW.

12 WE'VE SWUNG AROUND TO THE SIDE NOW.

13 AND THE DIRECTION OF THIS COMPARTMENT WAS
14 FROM THE RIGHT TO THE LEFT. AND, IN FACT, OVER ON THE
15 RIGHT SIDE YOU CAN SEE THE SKID MARKS AND THE TRENCHES
16 DUG AND THE WATER STANDING IN THEM.

17 YOU SEE THE MUD SPRAYED ON THE TOP OF THE
18 COMPARTMENT, AND --

19 BY MR. DUBUC:

20 Q WHERE IS THAT?

21 A UP. UP. RIGHT IN THERE.

22 YOU SEE -- IT LOOKS KIND OF GRAY.

23 THAT'S ACTUALLY MUD.

24 AND ON FORWARD OF THAT YOU SEE A WHITISH AREA,
25 AND THAT WOULD HAVE BEEN AN AREA THAT WAS WHERE THE SPRAY

1 WAS KIND OF BLANKED OUT BY THE WING.

2 THE WING WOULD HAVE CAUGHT THE SPRAY, SO YOU
3 DIDN'T GET AS MUCH IN THAT AREA.

4 NOW, PULL TO THE RIGHT JUST ABOUT A MOMENT TO
5 THAT EXIT. RIGHT THERE.

6 NOW, I MENTIONED IN THE OTHER PICTURE THE TOP
7 CUT-OUT OF THAT LOWER DOOR.

8 SO COME STRAIGHT DOWN TO THAT NOTCH.

9 THAT IS ACTUALLY THE CUT-OUT FOR THAT DOOR IN
10 THE LOWER FUSELAGE.

11 SO THAT, AGAIN, SHOWS HOW MUCH OF THAT SIDE
12 PANEL WAS STILL THERE.

13 I MENTIONED THAT THAT SIDE PANEL WAS KIND OF
14 JAGGED AS YOU GO FORE AND AFT, AND YOU SEE THAT IN THAT
15 AREA.

16 AND THE SAME THING EXISTED ON THE OTHER SIDE,
17 AND I BELIEVE WE HAVE PICTURES THAT WILL SHOW THAT.

18 Q ALL RIGHT.

19 MR. DUBUC: CAN WE HAVE THE NEXT SLIDE -- D1427.

20 THE WITNESS: THIS IS A VIEW OF THE FLIGHT DECK
21 AREA, AND IT'S UPSIDE-DOWN IN THIS.

22 AND ON THE FORWARD RIGHT YOU SEE THE TWO WINDOWS
23 THERE, AND THIS IS WHAT THE FLIGHT CREW CLIMBED OUT OF.

24 AND I REFERRED TO THE -- A GREAT DEAL OF THE
25 SIDE PANELS WAS STILL ATTACHED TO THIS, AND YOU CAN SEE

1 THAT KIND OF GOING UP FROM THE WINDOWS.

2 AND YOU KIND OF SEE THE DARK LINE.

3 COME UP.

4 YOU SEE DARK AND THE LINE THERE?

5 MR. DUBUC: YES, SIR.

6 THE WITNESS: NO. TO THE LEFT.

7 I'M TALKING ABOUT THAT PAINT LINE.

8 UP SLIGHTLY. RIGHT ABOUT THERE.

9 THAT'S THE PAINT LINE WHERE THE LOWER SURFACE
10 OF THE AIRCRAFT IS A DIFFERENT COLOR THAN THE UPPER SURFACE.
11 AND WHEN THOSE TWO COLORS COME TOGETHER, ARTISTICALLY, WE
12 PUT A DIFFERENT, DARKER PAINT STRIPE THERE.

13 SO THAT SHOWS HOW MUCH OF THE LOWER FUSELAGE
14 WAS STILL ATTACHED TO THE FLIGHT DECK.

15 AND THIS, AGAIN, IS PART OF MY OVERALL OPINION
16 THAT THAT FLIGHT DECK APPROACHED THAT DIKE AT THE RIVER
17 IN A NOSE-UP ATTITUDE, BECAUSE THAT PART OF THE LOWER
18 FUSELAGE IS THE MOST INTACT OF ANYTHING AT ITS FINAL
19 RESTING POINT.

20 SO THAT, TO ME, PROVES, WITH HARD EVIDENCE,
21 THAT THE NOSE OF THE AIRCRAFT DID NOT CRASH INTO THAT
22 DIKE, BECAUSE YOU WOULDN'T HAVE FOUND THAT PATTERN.

23 OFF TO THE RIGHT OF THAT NOSE OF THE AIRCRAFT
24 YOU SEE -- NO. TO THE RIGHT A LITTLE BIT MORE.

25 THAT IS ACTUALLY THE BULKHEAD THAT'S IN FRONT

1 OF THAT FLIGHT DECK. AND THEN THERE'S A BIG RADOME AND SO
2 FORTH THERE, BUT THE RADOME HAS BEEN TAKEN AWAY BY SOMEBODY.

3 YOU SEE WATER IN THE AREA OF THAT FLIGHT DECK
4 AND YOU SEE TALL VEGETATION.

5 THIS AREA WAS UNTILLED.

6 UP TO THE TOP OF THE PICTURE YOU SEE THE
7 TROOP COMPARTMENT, THAT WE'VE SEEN BEFORE.

8 AND YOU SEE THE VEGETATION SURROUNDING THAT,
9 AND THIS UNTILLED SOIL, AND THE VEGETATION IS OF VARYING
10 HEIGHTS.

11 AND IT'S KIND OF DIFFICULT TO WALK THROUGH
12 THAT AREA BECAUSE OF THE VEGETATION.

13 MR. DUBUC: ALL RIGHT, SIR.

14 BY MR. DUBUC:

15 Q WHAT, IF ANY, OBSERVATIONS AS TO FIRE DID
16 YOU MAKE WITH RESPECT TO THE AREA OF THE TROOP COMPARTMENT
17 OR THE FLIGHT DECK?

18 A I SAW NO INDICATIONS OF FIRE IN EITHER ONE OF
19 THOSE AREAS.

20 AND, AS I SAY, I WAS THROUGH THAT AREA SEVERAL
21 TIMES DURING THIS ENTIRE INVESTIGATION.

22 Q SIR, THE NEXT ONE IS D9.

23 EXCUSE ME.

24 THE NEXT ONE IS D1441. AND WHAT IS THAT, SIR?

25 A THIS IS A VIEW OBVIOUSLY TAKEN SHORTLY AFTER.

1 THE ACCIDENT.

2 IT'S A VIEW LOOKING BACK DOWN THE PATH OF THE
3 AIRCRAFT. AND ON THE LEFT YOU SEE THE SMOKE AND YOU SEE
4 THE FIRE.

5 AND THE DEBRIS THAT YOU SEE IN THAT AREA, THAT
6 IS THE WING, AND WHERE THE WING FLEW OFF SEPARATELY AND
7 IMPACTED THE GROUND, BROKE APART AND BURNED.

8 THE DIRECTION OF THE SMOKE THERE, AS YOU CAN
9 SEE FROM THIS PICTURE, IS AWAY FROM THE OTHER PORTIONS
10 OF THE AIRCRAFT.

11 SO THE WIND DIRECTION CARRIED THE SMOKE AWAY
12 FROM THE INHABITED COMPARTMENTS.

13 Q SIR, DID YOU OBSERVE THIS AREA, YOURSELF?

14 A YES. I WALKED IN THAT AREA ON THE VERY FIRST
15 DAY THAT WE WERE THERE, WHICH WAS SOME TWO DAYS AFTER THE
16 ACCIDENT. AND YES, IT WAS BURNED.

17 THE METAL OF THE WING HAD MELTED, AND THINGS
18 LIKE THAT.

19 Q ALL RIGHT, SIR.

20 WHAT, IF ANY, OBSERVATIONS DID YOU MAKE AS TO
21 THIS AREA, COMPARED TO YOUR OTHER OBSERVATIONS IN THE
22 OTHER AREAS?

23 A WELL, THIS AREA WAS BURNED. ABSOLUTELY -- BURNED.

24 LOTS OF EVIDENCE OF SOOT. AS YOU CAN SEE THERE,
25 EVEN THERE, THE SOOT, SOME OF THE SOOT, HAS SWEPT KIND OF

1 TOWARD THE CENTER OF THE PICTURE, OVER THAT LITTLE POND
2 OF WATER.

3 SO IT WAS ALL SOOTED-UP AND BURNED, AND MELTED
4 METAL, ET CETERA.

5 NOW, IN THE OTHER AREAS -- NOW, OFF TO THE
6 RIGHT, YOU SEE THE FLIGHT DECK -- I PERSONALLY OBSERVED
7 NO INDICATIONS OF FIRE IN THAT AREA, OVER SEVERAL VISITS.

8 KIND OF THE TOP CENTER YOU CAN SEE THE TROOP
9 COMPARTMENT -- IF YOU'D LIFT UP YOUR POINTER.

10 THAT IS THE TROOP COMPARTMENT.

11 NOW, WHAT YOU'RE LOOKING AT THERE, YOU'RE
12 LOOKING DOWN THE PATH OF THE AIRCRAFT AND DIRECTION FROM
13 WHENCE THE AIRCRAFT CAME.

14 AND THAT'S THE FRONT END OF THAT TROOP COMPARTMENT.

15 AS YOU CAN SEE, THE FRONT END IS POINTED IN A
16 GENERAL DIRECTION OF THAT WING AREA.

17 AND IT WOULD HAVE BEEN EASY TO HAVE STEPPED OUT
18 OF THAT TROOP COMPARTMENT AND SEEN THE SMOKE AND THE FIRE.

19 BUT I WAS AROUND THAT AREA, AFT END, FRONT END,
20 AND INSIDE THE THING SEVERAL TIMES, AND I SAW NO INDICATION
21 OF FIRE IN THAT AREA.

22 Q YOU'RE REFERRING TO THE TROOP COMPARTMENT?

23 A SAY AGAIN?

24 Q YOU'RE REFERRING TO THE TROOP COMPARTMENT NOW?

25 A REFERRING TO THE TROOP COMPARTMENT.

1 MR. DUBUC: ALL RIGHT.

2 NOW I'D LIKE TO GO TO EXHIBIT D9, IF I CAN.

3 BY MR. DUBUC:

4 Q SIR, CAN YOU TELL ME WHAT THAT IS?

5 A YES, SIR.

6 THAT'S A WRECKAGE DIAGRAM THAT WAS RELEASED
7 BY THE AIR FORCE AS PART OF THE AIRCRAFT ACCIDENT REPORT.

8 IT DEPICTS ON THE RIGHT THE INITIAL TOUCH-DOWN
9 POINT, AND IT'S SCALED OFF IN YARDS.

10 IT SHOWS THE TREE -- THE BROKEN TREES ON THE
11 RIGHT, SOME INDICATION OF VEGETATION AS YOU APPROACH THE
12 RIVER.

13 AND DOWN ON THE RIVER IT TALKS ABOUT THE
14 SECOND IMPACT POINT.

15 AND RIGHT AT THE EDGE OF THE RIVER YOU SEE THAT
16 LONG LINE VEERING OFF TO THE -- KIND OF THE TOP -- THAT'S
17 WHAT I'VE BEEN REFERRING TO IN THESE --

18 NO. DOWN, DOWN. UP, RIGHT THERE IN THE MIDDLE.
19 RIGHT.

20 THAT LINE, THAT'S NOT REALLY THE TRACK THAT THE
21 AIRCRAFT MADE.

22 THAT'S, AS WE'VE SEEN FROM THE PICTURES, THAT'S
23 THAT FARMER'S IRRIGATION DIKE. AND IT SHOWS A SECTION OF
24 THE CARGO FLOOR AND THE LOCATION OF THE MAIN COMPONENTS,
25 THE T-TAIL, THE TROOP COMPARTMENT, THE FLIGHT DECK AND THE

1 WING AREA, AND JUST SHOWS THE WING SECTION.

2 AND THE CROSS-HATCHED SECTION IS DOWN ON THE
3 LOWER EDGE OF THE PICTURE. THE CROSS-HATCHED SHOWS THE
4 BURNED AREA.

5 IF YOU LOOK CLOSELY, THE CROSS-HATCH IS ONLY
6 IN THE WING AREA.

7 ABOVE THAT IT SHOWS THE DIAGONAL, AND THAT SHOWS
8 THE AREA OF DEBRIS.

9 THE AREA OF DEBRIS IS SHOWN UP AROUND THE MAIN
10 SECTION, AND ALSO SOME DEBRIS OVER ON THE RIGHT.

11 THAT'S RIGHT OUT OF THE ACCIDENT REPORT.

12 Q ALL RIGHT.

13 DO YOU HAVE AN OPINION TO A REASONABLE DEGREE
14 OF SCIENTIFIC CERTAINTY, BASED ON YOUR OWN OBSERVATIONS
15 AND WHAT YOU SEE HERE AS TO THE ACCURACY OF WHAT IS
16 DEPICTED?

17 A IN MY OPINION THAT IS FAIRLY ACCURATE.

18 Q ALL RIGHT.

19 NOW, SIR, DID YOU MAKE ANY CALCULATIONS AS
20 TO THE RELEVANT G-FORCES IN CONNECTION WITH THIS ACCIDENT?

21 A YES, I DID.

22 Q AND IN MAKING THE CALCULATIONS DID YOU FORM
23 AN OPINION TO REASONABLE SCIENTIFIC CERTAINTY AS TO THOSE
24 G-FORCES?

25 A YES, I DID.

1 Q AND CAN YOU TELL US WHAT THAT IS?

2 A YES.

3 STARTING AT THE INITIAL TOUCH-DOWN POINT, WE
4 KNOW THE VELOCITY, THE SPEED OF THE AIRCRAFT. WE KNOW THE
5 SPEED OF THE AIRCRAFT.

6 THIS WAS RECORDED ON THE ON-BOARD RECORDING
7 SYSTEM.

8 AT LEAST WE KNOW THE SPEED SOME THREE SECONDS,
9 3.6 SECONDS, BEFORE THE AIRCRAFT TOUCHED DOWN, BECAUSE
10 AT THE TOUCH-DOWN THERE WAS SOME SORT OF ELECTRICAL TRANSIT
11 AND IT DUMPED THE DATA.

12 SO THE LAST RECORDED DATA WE HAVE IS 3.6
13 SECONDS BEFORE TOUCH-DOWN AND THE SPEED'S NOT LIKELY TO
14 CHANGE VERY MUCH IN 3.6 SECONDS.

15 ALSO, WE HAD ONE ADDITIONAL RECORDING OF THE
16 SPEED OF THE AIRCRAFT AFTER THAT, SOMEWHERE IN BETWEEN
17 FIRST TOUCH-DOWN AND SECOND TOUCH-DOWN. ONE MORE PIECE
18 OF DATA WAS RECORDED BEFORE THE AIRCRAFT LOST POWER.

19 AND THE SPEED IN BOTH CASES WAS IDENTICAL,
20 INDICATING THAT AT LEAST BETWEEN THOSE TWO POINTS THERE
21 WAS NO DISCERNIBLE CHANGE IN THE AIR SPEED.

22 SO THE AIRPLANE REALLY DIDN'T SLOW DOWN AT
23 THAT FIRST IMPACT.

24 THEREFORE, IF THE AIRPLANE DIDN'T SLOW DOWN,
25 THERE WEREN'T ANY G-LOADS, THERE WASN'T ANY DECELERATION.

1 WE'VE TALKED PREVIOUSLY FROM THESE PICTURES
2 ABOUT THE VERTICAL BOUNDING, AND WE STATED THAT THE
3 AIRCRAFT, FROM THE EVIDENCE OF THE DIKES, ET CETERA, THAT
4 THE AIRCRAFT EVIDENTLY APPROACHED A VERY FLAT ATTITUDE,
5 AND BRUSHED OFF THE TOP OF ONE DIKE, A FOOT HIGH, WENT
6 ON AN APPRECIABLE DISTANCE, BRUSHED OFF ANOTHER DIKE.

7 SO IT WASN'T COMING DOWN VERY FAST.

8 SO THE VERTICAL LOADS WERE INSIGNIFICANT,
9 REALLY, AND WE KNOW THE AIRPLANE DIDN'T SLOW DOWN.

10 SO YOU CAN KIND OF DISPENSE WITH THE FIRST
11 IMPACT POINT, IF YOU'RE TALKING ABOUT G-LOADS, EITHER
12 VERTICAL OR HORIZONTAL G-LOADS.

13 AND WE KNOW THE SPEED COMING ACROSS THE RIVER.

14 WE GOT ONE MORE SPEED RECORDING, THE SAME
15 SPEED.

16 AND IF WE KNOW THAT SPEED AND IF WE KNOW THE
17 DISTANCE THAT THESE COMPARTMENTS TRAVELED, YOU CAN
18 CALCULATE HOW FAST THE AIRCRAFT SLOWED DOWN, IF YOU
19 CONSIDER OTHER FACTORS.

20 NOW, I'VE MENTIONED OTHER FACTORS, AND MY
21 OPINION IS THAT THE AIRCRAFT SLOWED DOWN AT A UNIFORM
22 RATE.

23 THE REASON I SAY A UNIFORM RATE IS SEVERAL
24 POINTS.

25 NUMBER ONE, THE FARMLAND WAS UNIFORM --

1 UNIFORMLY LEVEL, UNIFORMLY WET. THERE WERE NO HILLS,
2 NO OBSTRUCTIONS, OTHER THAN GOING THROUGH THESE LITTLE
3 DIKES, THAT ARE ONLY A FOOT WIDE -- A FOOT HIGH AND A
4 FOOT WIDE. AND EVEN THEN THEY WERE WET.

5 NO BIG BOULDERS, NO TREES, NO HILLS.

6 SO YOU'RE SCOOTING ACROSS A RELATIVELY FLAT,
7 UNIFORM TERRAIN.

8 SO THAT'S A VERY IMPORTANT POINT.

9 FURTHERMORE, NOTICING THE STATEMENTS MADE BY
10 THE CREW AND THE PASSENGERS, FOR EXAMPLE, IN THE TROOP
11 COMPARTMENT.

12 AND AS I STATED PREVIOUSLY, MANY OF THESE --
13 WELL, ALL OF THE ADULTS WERE SITTING DOWN IN THE AISLES,
14 SITTING DOWN ON THE FLOOR, HOLDING ONTO THE SIDE OF THE SEAT.

15 SOME PEOPLE WERE LEANING ON THE FLOOR, ON
16 THEIR KNEES, LEANING INTO THE SEATS, AND FACING FORWARD,
17 KIND OF HOLDING ONTO SOMETHING.

18 OTHER PEOPLE WERE SITTING DOWN ON THE FLOOR
19 BETWEEN SEATS AND KIND OF PUSHING THEMSELVES BACK AGAINST
20 THE SEAT IN BACK OF THEM, AND PUSHING THEIR ARMS.

21 SO THEY WERE RESTRAINING THEMSELVES SOMEWHAT.

22 BUT ESPECIALLY FOR THE NURSES SITTING IN THE
23 AISLE AND HOLDING ONTO THE LEGS OF THE SEAT -- AND THESE
24 NURSES ARE NOT SUPER-STRONG.

25 THE ONES THAT HELD ON WITH BOTH HANDS AND DIDN'T

1 TRY TO DO SOMETHING ELSE IN BETWEEN, THEY STAYED WHERE
2 THEY WERE -- ONE PARTICULAR NURSE WAS HOLDING ON WITH
3 BOTH HANDS AND SOMEONE WAS WALKING BY OR FALLING BY OR
4 SOMETHING.

5 SHE TURNED LOOSE WITH ONE HAND AND GRABBED
6 THAT PERSON.

7 AND I DON'T KNOW WHETHER TURNING LOOSE WITH ONE
8 HAND MADE HER BREAK LOOSE OR WHETHER SHE GOT AHOOLD OF
9 THE OTHER PERSON AND THE TWO OF THEM MADE HER LOSE THIS
10 ONE HAND, BUT ANYWAY, SHE CAME LOOSE AND SHE SCOOTED
11 FORWARD.

12 NOW, OF COURSE, WHEN YOU SCOOT FORWARD AND
13 YOU COME TO A SUDDEN STOP, IT'S ACCORDING TO HOW YOU COME TO
14 A SUDDEN STOP.

15 IF YOU HIT FEET FIRST, YOU'RE IN GOOD SHAPE. IF
16 YOU HAPPEN TO HIT HEAD FIRST, YOU'RE IN TROUBLE.

17 SO YOU'VE GOT TO CONSIDER THOSE STATEMENTS
18 ALONG WITH THE TERRAIN IN ARRIVING AT A CONCLUSION -- THAT
19 YOU'RE NOT VERY FAR OFF IF YOU ASSUME A UNIFORM
20 DECELERATION.

21 IF YOU KNOW THE SPEED OF THE AIRCRAFT, AND IF
22 YOU KNOW THE DISTANCE, WHICH YOU CAN SCALE FROM THAT
23 DIAGRAM -- YOU SCALE ALL THAT OFF AND GO THROUGH THE
24 MATHEMATICS OF IT -- AND I REALLY COULDN'T SAY MATHEMATICS,
25 SO I'LL SAY ARITHMETIC, BECAUSE IT'S ABOUT THAT SIMPLE --

1 YOU CAN ARRIVE AT A DECELERATION RATE.

2 AND I DID THAT.

3 AND I CAME OUT WITH AN AVERAGE OF 1.6 G'S.

4 NOW, I ALSO LATER ON BEGAN TO WONDER -- WELL,
5 THIS IS AN AVERAGE. WHAT WOULD YOU EXPECT THE PEAKS AND
6 THE VALLEYS TO BE BECAUSE, SURELY, IT WASN'T TOTALLY
7 UNIFORM, SURELY THERE WERE SOME VARIATIONS ABOVE AND
8 BELOW THAT.

9 AND I WENT BACK AND LOOKED AT SOME TESTING
10 DONE SEVERAL YEARS AGO BY A GENTLEMAN NAMED JOHN PAUL STATT,
11 AND HE DID SOME TESTING, SOME ROCKET SLED TESTING FOR THE
12 AIR FORCE.

13 HIS ENDEAVOR WAS TO FIND OUT WHAT TO DO TO
14 MAKE SEAT BELTS AND SHOULDER STRAPS BETTER FOR THE AIR FORCE
15 PEOPLE IN EVENT OF A CRASH.

16 AND TO DO THIS HE CONDUCTED SOME ROCKET SLED
17 TESTS AT VARIOUS SPEEDS AND AT VARIOUS DECELERATIONS.

18 AND I LOOKED AT ALL THE DATA THAT HE HAD AND
19 I LOOKED AT THE PEAKS AND VALLEYS AND I LOOKED AT THE
20 AVERAGE.

21 AND WHEN I TOOK HIS DATA AND LAID IT ALONGSIDE
22 OF MINE, THAT 1.6 G AVERAGE, IF I COULD RELATE THAT TO
23 THOSE SOME FIFTY-ODD TESTS THAT HE DID, THEN THE PEAK OF
24 THAT 1.6 WOULD HAVE GONE UP TO SOMETHING LIKE 3.91.

25 WE'RE TALKING THE AFT TROOP COMPARTMENT, SO

1 IT WOULD HAVE GONE FROM, SAY, A 1.6 AVERAGE TO A PEAK OF
2 3.91.

3 SO YOU'RE STILL TALKING LESS THAN FOUR G'S.

4 NOW, FOUR G'S -- WELL, I WON'T GET INTO THAT.

5 Q OKAY, SIR.

6 YOU WERE REFERRING TO THE TROOP COMPARTMENT?

7 A TALKING ABOUT THE TROOP COMPARTMENT RIGHT NOW.

8 Q OKAY.

9 YOU MENTIONED A DISTANCE.

10 IN YOUR OPINION TO REASONABLE SCIENTIFIC
11 CERTAINTY, HOW FAR DID THE TROOP COMPARTMENT TRAVEL, LET'S
12 SAY, FROM THE RIVER BANK?

13 A SCALING FROM THAT DIAGRAM, SCALING FROM THE
14 DIKE, AT THAT SECOND IMPACT POINT, TO THE TROOP COMPARTMENT,
15 MY SCALING INDICATED A DISTANCE OF TWO THOUSAND -- SLIGHTLY
16 OVER TWO THOUSAND FEET.

17 LIKE TWO THOUSAND TEN, TWO THOUSAND TWELVE.

18 Q HOW ABOUT WITH THE FLIGHT DECK? DID YOU MAKE --

19 A THE FLIGHT DECK, AS SHOWN ON THAT DIAGRAM,
20 AND AS I'VE MENTIONED BEFORE, THE MORE INTACT STRUCTURE
21 LET IT SLIDE FURTHER, AND THEREFORE, SINCE IT SLID FURTHER
22 IT WOULD HAVE SLOWED DOWN LESS RAPIDLY.

23 AND HERE AGAIN, YOU TAKE THE DISTANCE THAT
24 IT TRAVELED AND YOU'LL TAKE THE SAME VELOCITY THAT WE HAD
25 BEFORE, AND YOU'LL GET A LOWER DECELERATION AND A LOWER

1 G-LOAD.

2 AND THE DISTANCE THAT I SCALED FOR THAT FLIGHT
3 DECK AREA OFF OF THAT DIAGRAM WAS SOME TWO HUNDRED FEET
4 FURTHER.

5 IN FACT, I THINK IT WAS TWENTY-TWO HUNDRED AND
6 NINE OR TEN FEET -- SOMETHING LIKE THAT. I DON'T REMEMBER
7 EXACTLY, BUT THAT'S REAL CLOSE.

8 AND TAKING THAT DISTANCE AND TAKING THE
9 VELOCITY, YOU COME UP WITH A G-LOAD THAT'S LESS. SOMETHING
10 LIKE, INSTEAD OF 1.6 FOR THE TROOP COMPARTMENT, IT'S 1.46
11 FOR THE FLIGHT DECK.

12 RIGHT OFF THE TOP OF MY HEAD I COULDN'T TELL
13 YOU WHAT THE PEAK WOULD BE, BUT IT WOULD BE SOMETHING
14 LESS THAN THAT 3.91, SINCE THE BASIC NUMBER IS LESS.

15 Q ALL RIGHT.

16 YOU MENTIONED YOU GOT SOME AIR SPEEDS FROM
17 SOMEWHERE.

18 WHERE DID YOU GET THOSE?

19 A I MENTIONED THAT THIS WAS RECORDED DATA.

20 THIS AIRCRAFT HAS A SYSTEM INSTALLED ON IT THAT
21 THEY CALL -- THAT RECORDS CERTAIN DATA ON THE AIRCRAFT.
22 IT'S REALLY RECORDED FOR MAINTENANCE REASONS.

23 AND THEY CALL IT THE MADAR SYSTEM. IT'S THE
24 MALFUNCTION, ANALYSIS AND DETECTION AND RECORDING SYSTEM.

25 AND THE SYSTEM CONSISTS OF SEVERAL ELECTRONIC

1 BOXES, AND THOSE BOXES ARE LOCATED MAINLY UP IN THE FLIGHT
2 DECK AREA.

3 AND THEN THESE BOXES HAVE WIRES RUNNING OUT
4 TO VARIOUS DEVICES, THROUGHOUT ALL PARTS OF THE AIRCRAFT,
5 THAT PICK UP VARIOUS KINDS OF SIGNALS.

6 IT WILL PICK UP AIR SPEED, IT WILL PICK UP
7 ALTITUDE. IT WILL PICK UP A GREAT MANY THINGS FROM THE
8 ENGINE, LIKE THE ENGINE TEMPERATURE, THE ENGINE SPEED,
9 THE FUEL FLOW -- NUMEROUS, HUNDREDS OF LITTLE DATA.

10 AND IT'S ALL PUT ON A MAGNETIC TAPE, THAT'S
11 SO POPULAR THESE DAYS.

12 AND THAT'S WHAT I MENTIONED WHEN THIS WAS
13 RECORDED DATA.

14 WE WERE ABLE TO RECOVER THAT MAGNETIC TAPE AND
15 BRING IT BACK TO THE AIR FORCE. AND THE AIR FORCE PUT IT
16 THROUGH THEIR SYSTEM AND WE REDUCED THE DATA AND PRINTED
17 IT OUT.

18 Q OKAY.

19 DID YOU REVIEW THAT DATA?

20 A YES, I HAVE.

21 Q IN ADDITION TO AIR SPEED, WHAT, IF ANYTHING,
22 ELSE DOES THE MADAR RECORD?

23 A WELL, IN ALL TOTAL, IT'S SEVERAL HUNDRED.

24 IT WILL RECORD THE AIR SPEED, THE ALTITUDE,
25 THE DIRECTION THAT THE AIRCRAFT IS TRAVELING.

1 IT WILL RECORD VERTICAL AND LATERAL ACCELERATIONS
2 OF THE AIRCRAFT IN CERTAIN AREAS.

3 IT RECORDS THE HEALTH OF CERTAIN THINGS, LIKE
4 ON THE ENGINE AND SO FORTH.

5 IT'S REALLY TO DETECT WHEN SOMETHING IS GOING
6 WRONG OR IS ABOUT TO GO WRONG AND GIVE YOU AN EARLY
7 INDICATION, SO YOU CAN GO DO SOME PREVENTIVE MAINTENANCE.

8 Q ALL RIGHT, SIR.

9 WITH RESPECT TO THESE ITEMS THAT YOU MENTIONED
10 IS THERE ANY TIME TRACE, RELEVANT TO TIME, FOR WHEN THESE
11 ITEMS -- FOR EXAMPLE, AN ENGINE PROBLEM?

12 A OH, YES.

13 THE MADAR SYSTEM HAS A TIME CLOCK ON IT,
14 ELECTRONIC TIME CLOCK. AND IT ACTUALLY RECORDS THAT TIME
15 BECAUSE IN ORDER TO DO SOMETHING WITH THE DATA YOU'RE
16 REALLY GOING TO HAVE TO KNOW WHAT INTERVAL OF TIME THAT
17 YOU'RE TALKING ABOUT.

18 SO THE FLIGHT ENGINEER SETS THE TIME TO TIME
19 ZERO WHEN HE STARTS HIS MISSION, AND THE CLOCK KEEPS TRACK
20 OF THE TIME FROM WHATEVER THAT TIME ZERO HE SETS IN.

21 Q NOW, SIR, DID YOU HAVE OCCASION TO REVIEW THE
22 MADAR DATA TO NOTE THE TIMES AND ALTITUDES WITH RESPECT
23 TO THE AIRCRAFT INVOLVED IN THIS ACCIDENT?

24 A OH, YES, I DID.

25 Q I'D LIKE TO SHOW YOU EXHIBIT D1215.

1 CAN YOU TELL ME WHAT THAT IS, SIR?

2 A YES. THIS IS A GRAPH.

3 IT SHOWS THE ALTITUDE OF THE AIRCRAFT AND IT
4 SHOWS THE TIME. IT'S AN ALTITUDE-TIME CHART.

5 AND THIS PARTICULAR CHART DEPICTS THE ALTITUDE
6 OF THE AIRCRAFT AT THE TIME OF THIS DECOMPRESSION AT
7 ALTITUDE AND THE LENGTH OF TIME FROM THAT ALTITUDE DOWN
8 TO SOME OTHER ALTITUDE.

9 IN FACT, IT KIND OF TRACES IT DOWN, ALL THE WAY
10 DOWN TO THE LAST RECORDING.

11 Q ALL RIGHT, SIR.

12 WHERE DOES THE DATA COME FROM?

13 A THE DATA CAME FROM THAT ON-BOARD MADAR RECORDING
14 SYSTEM.

15 Q WAS THAT PREPARED UNDER YOUR SUPERVISION AND
16 DIRECTION?

17 A THIS WAS PREPARED AT MY REQUEST AND AT MY
18 DIRECTION AND UNDER MY SUPERVISION, YES.

19 Q ALL RIGHT, SIR.

20 MR. DUBUC: WE PREVIOUSLY NOTED THAT ONE BEFORE,
21 YOUR HONOR.

22 I'D LIKE TO OFFER IT IN EVIDENCE.

23 MR. LEWIS: NO OBJECTION.

24 THE COURT: RECEIVED.

25 MR. DUBUC: I'D LIKE TO SHOW IT TO THE JURY,

1 IF I COULD.

2 THE DEPUTY CLERK: WHAT IS THE NUMBER?

3 MR. DUBUC: D1215.

4 (DEFENDANTS' EXHIBIT NO. D1215

5 WAS RECEIVED IN EVIDENCE.)

6 BY MR. DUBUC:

7 Q JUST TELL US -- THEY CAN SEE IT NOW -- WHAT
8 THIS DEPICTS.

9 A OKAY.

10 ON THE LEFT YOU'RE STARTING DOWN AT THE BOTTOM,
11 YOU SEE THE FOUR THOUSAND, EIGHT, TWELVE, SIXTEEN, TWENTY,
12 TWENTY-FOUR THOUSAND.

13 THAT'S THE ALTITUDE IN FEET-- THE ALTITUDE OF
14 THE AIRCRAFT.

15 AND ON THE HORIZONTAL YOU SEE, STARTING FROM
16 THE LEFT, YOU SEE THE ZERO AND GOING ACROSS TO FIFTEEN.

17 THAT'S THE TIME, MINUTES.

18 SO WE HAVE ALTITUDE IN FEET AND THE TIME IN
19 MINUTES.

20 NOW, GOING UP TO THE RED LINE, OVER ON THE LEFT,
21 THE TIME ZERO THERE IS WHEN THIS PROBLEM OCCURRED IN FLIGHT.

22 Q WHAT PROBLEM ARE YOU REFERRING TO?

23 A THE IN-FLIGHT PROBLEM, WHEN THEY HAD THE
24 DECOMPRESSION.

25 Q ALL RIGHT, SIR.

1 A NOW, AT THE MOMENT OF THAT DECOMPRESSION THE
2 AIRCRAFT WAS AT A CERTAIN ALTITUDE.

3 AND AFTER THE DECOMPRESSION THERE WAS SOME FEW
4 SECONDS BEFORE THE PILOT STARTED THE DESCENT.

5 IF YOU LOOK VERY CLOSELY YOU'LL FIND THAT THE
6 ALTITUDE ACTUALLY INCREASED FROM THE RAPID DECOMPRESSION
7 FOR A FEW SECONDS, AND THEN HE STARTED THE DESCENT.

8 AND THEN, WITHIN -- IF YOU GO OVER TO THE THREE-
9 MINUTE LINE, GO OVER TO THE THREE-MINUTE LINE AND COME UP,
10 YOU'LL SEE THAT THE AIRCRAFT WAS DOWN TO SIXTEEN THOUSAND
11 FEET WITHIN THREE MINUTES.

12 OKAY?

13 NOW, AT THAT POINT THE ALTITUDE INCREASES. AND
14 THIS IS A RESULT OF THE PILOT ADDING -- PUSHING THE
15 THROTTLES FORWARD AND ADDING POWER, BECAUSE HE DIDN'T LIKE
16 HIS RATE OF DESCENT.

17 SO WHEN HE DID THAT HE ACTUALLY INCREASED THE
18 ALTITUDE MOMENTARILY AND STARTED BACK DOWN AGAIN.

19 AND IF YOU COME ON OVER TO THE EIGHT-MINUTE
20 LINE AND COME UP, YOU'LL SEE THAT THIS SAME PHENOMENON
21 OCCURRED AGAIN. HE ACTUALLY PUSHED THE THROTTLES FORWARD
22 AND INCREASED THE ALTITUDE.

23 BUT RIGHT ABOUT THE EIGHT-MINUTE LINE -- AND IF
24 YOU TRY TO COME ACROSS -- YOU KNOW, THAT'S ABOUT HALF-WAY
25 BETWEEN THE EIGHT AND THE TWELVE, SO YOU'RE TALKING TEN

1 THOUSAND FEET.

2 SO WITHIN THE LIMITS OF THE ARTISTIC ACCURACY
3 OF THIS GRAPH, WHY, YOU REACH TEN THOUSAND FEET SOMEWHERE
4 SLIGHTLY LESS THAN EIGHT MINUTES.

5 Q OKAY.

6 A AND THEN IT COMES ON DOWN TO WHAT YOU SEE ON
7 THE EXTREME RIGHT.

8 Q OKAY. THANK YOU.

9 MR. DUBUC: I'D NEXT LIKE TO SHOW THE WITNESS
10 EXHIBIT D1210. THIS HAS PREVIOUSLY BEEN MARKED.

11 BY MR. DUBUC:

12 Q SIR, WHAT IS THAT?

13 A THAT'S A VIEW LOOKING DOWN ON THIS AFT TROOP
14 COMPARTMENT. THE FRONT OF THE TROOP COMPARTMENT WOULD BE
15 ON THE LOWER LEFT AND THE AFT END OF THE TROOP COMPARTMENT
16 WOULD BE ON THE UPPER RIGHT.

17 IT SHOWS THE NUMBER OF SEATS IN THERE. IT
18 SHOWS THAT THOSE SEATS WERE FACING AFT ON THE AIRCRAFT. IN
19 ALL CASES UNTIL YOU GET WAY BACK THERE TO THE AFT END,
20 WHERE YOU SEE THOSE TWO SEATS LOOKING FORWARD. THOSE ARE
21 SPECIAL SEATS FOR CREW MEMBERS.

22 SHOWS THE WIRE MESH WHERE YOU GO DOWN THE
23 LADDER TO THE LOWER CARGO FLOOR, AND ANOTHER WIRE MESH
24 GRILL.

25 THERE'S A COUPLE OF WASHROOMS ON THE FORWARD

RIGHT-HAND SIDE. THAT'S IN THE LOWER LEFT OF THIS PICTURE.

COUPLE OF WASHROOMS THERE.

BACK IN THE BACK END THERE'S A GALLEY, COAT RACK,
ET CETERA.

Q SIR, DO YOU KNOW HOW LONG THE TROOP COMPARTMENT
IS?

A WHAT YOU SEE THERE IS -- BEST I RECALL, IS
ABOUT SIXTY-TWO FEET.

Q ALL RIGHT.

A - APPROXIMATELY.

MR. DUBUC: NEXT, I'D LIKE TO SHOW THE WITNESS
EXHIBIT D1389.

I'M SORRY. 81. D1381.

MR. LEWIS: WHAT WAS THAT NUMBER AGAIN?

MR. DUBUC: D1381. I BELIEVE WE'VE LOOKED
AT THIS BEFORE.

BY MR. DUBUC:

Q SIR, DO YOU HAVE AN OPINION TO REASONABLE SCIENTIFIC CERTAINTY AS TO WHETHER WHAT WE SEE THERE IS THE LENGTH OF THE TROOP COMPARTMENT AS WE SAW IN THE LAST EXHIBIT?

A YES, I HAVE AN OPINION.

Q WHAT IS IT?

A MY OPINION IS THAT THE LENGTH OF THE COMPARTMENT
YOU SEE THERE IS A GREAT DEAL LONGER THAN WHAT WE SAW IN

1 THIS PREVIOUS THING.

2 THE PREVIOUS COMPARTMENT WAS JUST THE
3 COMPARTMENT BY ITSELF.

4 WHAT YOU SEE THERE IS SOME OVERHANG STRUCTURE,
5 WHICH MAKES IT APPRECIABLY LONGER.

6 Q AND WHAT IS THE BASIS OF THAT OPINION, SIR?

7 A WELL, YOU SEE THE TWO EXITS, FIRST OF ALL.

8 AND THE ONE EXIT THAT LOOKS DARK IN THE PICTURE
9 AND THE OTHER EXIT, WHERE THE DOOR HAS BEEN BROUGHT BACK
10 DOWN, THE SPACING OF THOSE TWO DOORS IN RELATIONSHIP
11 TO THE END OF THIS TROOP -- OF THE COMPARTMENT, AS YOU SEE
12 IT THERE -- THE RELATIONSHIP BETWEEN THOSE TWO WILL TELL
13 YOU THAT, GEE, THERE'S TWICE AS MUCH LENGTH AFTER THAT
14 BIG DOOR THERE AS THERE IS BETWEEN THE TWO DOORS.

15 AND THE RELATIONSHIP SHOULDN'T BE THAT WAY IF
16 YOU HAD NOTHING BUT THE SIMPLE AFT TROOP COMPARTMENT.

17 SO IT'S QUITE OBVIOUS THAT YOU'VE GOT MORE THERE.

18 Q ALL RIGHT, SIR.

19 MR. DUBUC: CAN WE HAVE EXHIBIT D1389?

20 BY MR. DUBUC:

21 Q CAN YOU TELL US WHAT THAT IS, SIR?

22 A YES. THIS IS A VIEW LOOKING INTO THE AFT END
23 OF THAT TROOP COMPARTMENT.

24 AND THE CIRCLE THAT YOU SEE THERE IN THE MIDDLE
25 WITH THE PERSON VISIBLE THROUGH THAT, THAT'S THAT BULKHEAD

1 WHICH IS THE AFT END OF THAT TROOP COMPARTMENT.

2 AND FROM THAT BULKHEAD AND COMING AFT, ESPECIALLY
3 ON THE TOP, YOU CAN COUNT THE NUMBER OF FRAMES VERY EASILY
4 IN THAT PICTURE.

5 Q WHAT ARE YOU REFERRING TO, SIR?

6 A OKAY.

7 PUT YOUR POINTER ON THE CIRCLE WHERE YOU SEE
8 THAT PERSON.

9 OKAY. GO UP. GO STRAIGHT UP.

10 NOW, RIGHT THERE. YOU SEE THAT RING? THAT'S
11 A FUSELAGE RING.

12 GO UP A LITTLE BIT MORE -- ABOUT AN INCH.

13 THAT'S ANOTHER RING. ANOTHER HALF-INCH IS
14 ANOTHER RING. THAT'S THREE.

15 UP, THERE'S A FOUR -- FIVE, SIX, SEVEN.

16 SO YOU SEE SEVEN VERY DISTINCT FUSELAGE FRAMES.

17 NOW, IN ADDITION TO THAT, TO THAT SEVENTH FRAME,
18 YOU CAN SEE THE SKIN AND THE STRINGERS EXTENDING EVEN ON
19 FURTHER. SO YOU'VE GOT --

20 Q WHERE IS THAT?

21 A IT'S EASIER TO SEE ON THE LEFT SIDE OF THE
22 PICTURE.

23 OKAY. LEFT SIDE OF THE PICTURE, ON UP. UP.
24 RIGHT THERE.

25 NOW, YOU SEE THE LAST FRAME. NOW, COMING AFT --

1 DO YOU SEE THE STRINGERS, AND THEN THE SKIN?

2 SO YOU'VE GONE AT LEAST BEYOND -- JUST FROM THAT
3 PICTURE YOU CAN SEE YOU'VE GONE BEYOND THE SEVENTH FRAME
4 AND IF YOU LOOK REAL CLOSELY, WITH A MAGNIFYING GLASS, YOU
5 CAN FIND THAT REALLY THAT WENT TO WHERE THE EIGHTH FRAME
6 WOULD BE.

7 SO YOU'RE TALKING EIGHT FRAMES FURTHER THAN
8 THAT TWENTY-ONE HUNDRED BULKHEAD.

9 Q WHAT DO YOU MEAN BY TWENTY-ONE HUNDRED BULKHEAD?

10 A WELL, EXCUSE ME.

11 THAT BULKHEAD AT THE END OF THAT COMPARTMENT
12 HAPPENS TO BE AT AIRCRAFT STATION TWENTY-ONE HUNDRED.

13 WE BREAK THE AIRCRAFT UP INTO INCHES AND THAT'S
14 THE TWENTY-ONE HUNDREDTH INCH FROM SOME POINT OUT BEYOND THE
15 AIRCRAFT.

16 SO WE COMMONLY REFER TO THAT AS THE TWENTY-ONE
17 HUNDRED BULKHEAD.

18 Q I SEE.

19 DO YOU HAVE ANY INFORMATION AS TO THE DISTANCE
20 BETWEEN THESE STRINGERS?

21 A YES, I DO.

22 Q AND WHAT IS THAT, SIR?

23 A OH, IT'S SLIGHTLY IN EXCESS OF TWENTY INCHES.

24 Q DID YOU FORM AN OPINION TO REASONABLE SCIENTIFIC
25 CERTAINTY AS TO THE AMOUNT OF ADDITIONAL STRUCTURE BEYOND

1 THE BACK WALL OF THE TROOP COMPARTMENT?

2 A YES, I DID.

3 Q WHAT IS THAT, SIR?

4 A WELL, IT'S -- JUST APPROXIMATING IT RIGHT HERE,

5 IT'S EIGHT TIMES TWENTY INCHES, OR -- THAT'S A HUNDRED
6 SIXTY INCHES.

7 AND IF YOU DIVIDE THAT BY TWELVE YOU'VE GOT
8 ABOUT FOURTEEN FEET OF EXTRA OVERHANG. IN FACT, A LITTLE
9 MORE THAN FOURTEEN FEET.

10 Q ALL RIGHT.

11 SIR, DID YOU FORM AN OPINION TO REASONABLE
12 SCIENTIFIC CERTAINTY AS TO THE OVERALL LENGTH OF THE
13 TROOP COMPARTMENT DEPICTED IN EXHIBIT D1381?

14 LET'S TAKE A LOOK BACK THERE.

15 A YES, I DID.

16 Q WHAT IS IT, SIR?

17 A 75.7 OR .67.

18 Q OVER SEVENTY-FIVE FEET.

19 A IT'S OVER SEVENTY-FIVE FEET.

20 Q ALL RIGHT, SIR.

21 THE COURT: WHICH IS OVER SEVENTY-FIVE FEET?
22 WHAT'S DEPICTED THERE OR THE TROOP COMPARTMENT?

23 THE WITNESS: WHAT IS DEPICTED IN THAT PICTURE
24 IS OVER SEVENTY-FIVE FEET LONG.

25 MR. DUBUC: I BELIEVE THE NEXT ONE WE WANT TO

1 LOOK AT IS EXHIBIT D1363.

2 BY MR. DUBUC:

3 Q WHAT IS THAT, SIR?

4 A THAT'S A PICTURE OF THE T-TAIL OF THE AIRCRAFT
5 THAT SEPARATED AND CAME OVER TO THE RIGHT OF THE BASIC
6 PATH OF THE AIRCRAFT.

7 Q SIR, CAN YOU TELL ME WHAT THESE TWO BULLET-SHAPED
8 THINGS ARE?

9 A OKAY.

10 THE FIRST ONE YOU POINTED TO, THE ONE ON THE RIGHT
11 -- THAT'S THE AFTMOST PART OF THE FUSELAGE.

12 AND THE ONE ON THE LEFT IS THE AFTMOST TIP OF
13 THE HORIZONTAL STABILIZER.

14 Q WHAT RELATIONSHIP, IF ANY, DOES THIS BULLET-
15 SHAPED COMPONENT HERE HAVE TO THE STABILIZER ITSELF?

16 A WELL, IT'S A PART OF -- IT'S AN INTEGRAL PART
17 OF THE STABILIZER, THE WHOLE HORIZONTAL STABILIZER.

18 Q WHEN YOU REFER TO THE HORIZONTAL STABILIZER,
19 WHAT ARE YOU REFERRING TO?

20 A WELL --

21 Q WHAT DOES IT DO?

22 A THAT'S THE VERTICAL PART RIGHT THERE IN THE
23 MIDDLE, AND THAT STANDS STRAIGHT UP AND DOWN -- THE PART
24 WITH THE FLAG ON IT -- THAT'S THE STRAIGHT UP AND DOWN. THAT'S
25 THE VERTICAL STABILIZER.

1 AND THEN WHEN YOU GET UP TO THE OTHER PART, WHY,

2 THE PART THAT GOES ACROSS LIKE THE WINGS OF AN AIRCRAFT,

3 THAT WOULD BE THE HORIZONTAL.

4 Q . . . WOULD THIS VERTICAL PART WE'VE BEEN TALKING ABOUT,

5 WOULD THAT, IN QUASI-LAYMAN'S LANGUAGE, BE SOMETIMES

6 REFERRED TO AS A RUDDER?

7 A THE MOVABLE PART ON THE AFT END, THAT YOU SEE

8 FLOPPED OVER, YES, THAT'S THE RUDDER.

9 Q THAT'S THE RUDDER?

10 A . . . RIGHT.

11 Q AND THAT CONTROLS WHAT, SIR?

12 A THAT CONTROLS THE DIRECTION OF THE AIRCRAFT --

13 KIND OF LIKE YOU CONTROL THE DIRECTION OF A CAR WITH THE

14 STEERING WHEEL. SO THAT'S THE DIRECTIONAL CONTROL. LEFT

15 AND RIGHT.

16 Q LEFT AND RIGHT. OKAY.

17 WHAT DOES THE STABILIZER CONTROL?

18 A IT CONTROLS THE AIRCRAFT UP AND DOWN MOTION.

19 SO YOU CALL THAT PITCH CONTROL. BUT IT CONTROLS

20 THE UP OR DOWN.

21 Q THERE'S BEEN A REFERENCE TO THE AIR SPEED HERE.

22 I BELIEVE YOU'VE MENTIONED IT.

23 WHAT RELATIONSHIP TO AIR SPEED DOES TRIM HAVE

24 ON THE HORIZONTAL STABILIZER?

25 A WELL, THE TRIM -- OF COURSE, THE WHOLE SHAPE OF

1 THE AIRCRAFT AND THE ANGLE OF THE WINGS AND ALL THAT, AND
2 THE WEIGHT OF THE AIRCRAFT AND THE WEIGHT OF THE CARGO
3 THAT'S IN THE AIRCRAFT.

4 AND YOU WILL HAVE A DIFFERENT TRIM FOR ALMOST
5 ANY DIFFERENT AIR SPEED AND DIFFERENT WEIGHT CONDITION.

6 Q DO YOU RECALL THE TRIM OF THE AIRCRAFT INVOLVED
7 IN THIS ACCIDENT?

8 A AS I RECALL, IT WAS ABOUT A HALF A DEGREE TRIM
9 ON THAT HORIZONTAL STABILIZER.

10 AND THAT PARTICULAR FLIGHT -- THE LEADING --
11 THE FORWARD PORTION OF THAT STABILIZER WOULD HAVE BEEN
12 TILTED A HALF A DEGREE DOWN, AND THEREFORE THE AFT END
13 WOULD HAVE BEEN TILTED A HALF A DEGREE UP.

14 Q WHICH END IS HALF A DEGREE UP?

15 A ON TO THE LEFT AND UP.

16 NOW, THAT'S THE REAR PART, OR AFT PART, OF THAT
17 STABILIZER, AND THEN THIS FLIGHT CONDITION, THAT AIRCRAFT
18 WOULD HAVE BEEN TRIMMED WITH THAT UP A HALF A DEGREE.

19 IN THIS CASE IT WOULD HAVE BEEN TO THE LEFT.

20 IT WOULD HAVE INCREASED THE SEPARATION BETWEEN
21 THAT FUSELAGE AND THE STABILIZER BY GOING A HALF A DEGREE
22 FURTHER TO THE LEFT.

23 Q AND IN MOVING THE TRIM HALF A DEGREE UP, WHAT
24 EFFECT, IF ANY, WOULD THAT HAVE WITH RESPECT TO THIS BULLET-
25 SHAPED POINT RELATIVE TO THE OTHER BULLET-SHAPED POINT?

1 A IT MOVES IT FURTHER AWAY.

2 Q OKAY, SIR.

3 MR. DUBUC: I'D LIKE TO SHOW THE WITNESS --

4 THE COURT: WE'LL TAKE OUR RECESS HERE.

5 MR. DUBUC: OKAY.

6 THE COURT: LADIES AND GENTLEMEN, YOU'RE EXCUSED
7 UNTIL TWO, P. M.

8 (WHEREUPON, THE JURY RETIRES FROM THE COURTROOM
9 FOR A LUNCHEON RECESS.)

10 MR. LEWIS: YOUR HONOR, COUNSEL HAS EXCEEDED
11 HIS ESTIMATE BY TWICE -- IN THE PRETRIAL ORDER -- AND I
12 JUST LIKE TO HAVE SOME IDEA AS TO HOW LONG HE IS -- .

13 THE COURT: YOU'RE EMBRACING THE PRETRIAL ORDER
14 -- WELL, ORIGINAL.

15 WHAT'S YOUR PROBLEM?

16 HAVE YOU ASKED HIM PRIVATELY?

17 MR. DUBUC: YES, YOUR HONOR.

18 I'VE GONE A LITTLE LONGER. I THOUGHT I WAS
19 GOING TO FINISH AT TWELVE OR 12:15.

20 MR. LEWIS: HE TOLD ME TWELVE.

21 THE COURT: AND THEREFORE, MR. LEWIS?

22 MR. LEWIS: I'M JUST TRYING TO GET A -- .

23 THE COURT: YOU JUST ASK HIM AND DON'T TAKE
24 MY TIME WITH THAT KIND OF TRIVIA.

25 AND WILL YOU ALL STRAIGHTEN OUT THE EXHIBITS?

1 MR. DUBUC: THE EXHIBITS.

2 YOUR HONOR, I JUST WANTED TO ASK ONE QUESTION.

3 BEFORE YOUR HONOR LEFT.

4 WITH RESPECT TO THE AIR FORCE WITNESSES WHO
5 HAVE NOW TESTIFIED, YOUR HONOR MENTIONED SOMETHING ABOUT
6 THEIR STAYING UNTIL WEDNESDAY, AND -- .

7 THE COURT: MR. LEWIS SAID THAT HE WANTED TO
8 HAVE ALL OF THEM AVAILABLE UNTIL HE EXAMINED THE LAST ONE.

9 MR. DUBUC: I BELIEVE HE'S DONE THAT.

10 THE COURT: SO THAT HE COULD HAVE -- TO BORROW
11 A PHRASE -- THERE COULD BE A SYNERGISTIC RELATIONSHIP
12 BETWEEN THEIR TESTIMONY.

13 MR. LEWIS: I HAVE DONE ALL THOSE.

14 THE COURT: DO YOU HAVE ANY REASON TO KEEP ANY
15 OF THEM?

16 MR. LEWIS: NO.

17 MR. DUBUC: OKAY.

18 THE COURT: THEY'RE EXCUSED.

19 (WHEREUPON, AT 12:29, P. M., THE COURT
20 ADJOURNED FOR A LUNCHEON RECESS UNTIL TWO O'CLOCK, P. M.)

1 A F T E R N O O N S E S S I O N

2 MR. MC MANUS: Your Honor, there is one preliminary
3 matter. We have been told that the next witness after
4 Mr. Edwards will be Mr. Atkins, who was the one who did
5 some of the enhancing of the photos, and we would like to be
6 heard on that issue prior to his testimony.

7 If you recall at the pretrial, we objected to his
8 pictures, and we still have some objections to them.

9 THE COURT: Bring back the jury, and ask Mr.
10 Edwards to come on in.

11 MR. DUBUC: Yes, Your Honor.

12 (Whereupon, the jury entered the courtroom.)

13 THE COURT: Good afternoon, ladies and gentlemen.

14 MR. DUBUC: May I proceed, Your Honor?

15 THE COURT: You may resume, Mr. Dubuc.

16 MR. DUBUC: Thank you, Your Honor.

17 DIRECT EXAMINATION (Cont'd.)

18 BY MR. DUBUC:

19 Q. Mr. Edwards, just before the lunch break you had
20 told us about the T-tail and the parts of the T-tail.

21 Do you remember that?

22 A. Yes, I do.

23 MR. DUBUC: I would like to show the witness

1 BY MR. DUBUC:

2 Q Does the T-tail appear on this diagram?

3 A Yes, it does. It shows up really at three
4 different views on all three pictures -- the aft end of the
5 aircraft.

6 Q This area here?

7 A Right.

8 Q You say three different views?

9 A Right.

10 Q And you mentioned two bullet-shaped items when
11 we were referring to that picture.

12 Do they appear on here?

13 A Yes. Yes, they do.

14 Q Are these these two here?

15 A The middle picture depicts them the best. The
16 bullet-shaped thing on the roller is the aft end, the most
17 aft end of the fuselage.

18 Q Right here?

19 A Right there.

20 Q And the top bullet?

21 A Is up higher, and right about where your -- down
22 slightly, that would be the aft-most end of the top of
23 the horizontal stabilizer.

24 Q What portion of the top of that stabilizer moves,
25 as you told us this morning?

1 A. The entire portion.

2 Q. You mentioned something about a half a degree
3 trim.

4 How would this move?

5 A. The T-tail is pivoted essentially about in the
6 center, and for this particular slight condition, the trim
7 would have been a half a degree, leading edge of the
8 stabilizer down and, therefore, the trailing edge up.

9 And the leading edge is if you put your pencil
10 there -- on forward, a little bit more, and that would be
11 the leading edge.

12 That part would have moved down in the picture,
13 and then the aft end would have moved, commensurately up.

14 Q. All right.

15 Does this picture, as it depicts position and
16 measurements, depict a neutral or zero position?

17 A. Most of the pictures in those kinds of illustrations
18 are of the neutral positions, yes.

19 Q. Is this one?

20 A. This one would be neutral, yes.

21 Q. If you were going to measure distances as between
22 the T-tail and say the fuselage tip, what, if anything,
23 would you have to do in doing that measurement if you were
24 going to measure it with reference to the parts of the
25 airplane we saw this morning?

1 A. Well, you couldn't get a great accurate dimension
2 from that. You would have to do some scaling, and that is
3 an artist's concept, and I'm sure it was never intended to
4 be scaled, to try to scale the distance between those two.

5 Q. What, if anything, in connection with scaling
6 would you have to do as to this factor of the trim you
7 mentioned?

8 A. You would have to consider -- to be accurate, you
9 would have to consider the additional separation that comes
10 about as a result of that trim condition tilting the aft
11 end further away to increase the distance between those two
12 points.

13 Q. All right.

14 Did you make that measurement yourself?

15 A. I made that measurement, but not from that
16 diagram.

17 Q. How did you do it?

18 A. I took other illustrations from the same handbook
19 that -- actually it gives the water line and station line
20 locations. And when I say "water line," everything is given
21 in inches on those water lines, and everything is given in
22 inches on the station lines, so you take the difference of
23 the two water lines and the difference of the two station
24 lines, and you can calculate that separation very accurately.

25 Q. Can you tell us what measurement you came to?

1 A. The measurements that I came up to using that
2 coordinate system right out of the same book of tech orders
3 that that came from, I came out with in excess of 36 feet.

4 Q. All right.

5 I would like to show the witness now Exhibit D-1216.

6 MR. CONNORS: -17.

7 MR. DUBUC: -17.

8 BY MR. DUBUC:

9 Q. Can you tell me what that is, sir?

10 A. Again, this is another one of the illustrations
11 out of the aircraft tech order handbooks, and that particular
12 illustration is intended to show the size of the various
13 compartments, the location of the various compartments; the
14 cargo compartments, et cetera.

15 Q. Let me go back to D-1216 for just a moment, sir.

16 There are some measurements on here, D-1216,
17 that relate or appear to relate to a line at the bottom
18 of the fuselage and another line which appears below where
19 the wheels are.

20 What is that line and measurement that is referred
21 to there?

22 A. That line that extends from all the way up from
23 the front of the aircraft to the rear -- the words "static
24 ground line" is indicated there; static meaning stationary.
25 It's the ground line in the taxi position for that aircraft,

1 and the little delta notes on the upper right, it tells you
2 some of those dimensions change with certain weight conditions
3 on the aircraft, certain fuel loads, et cetera.

4 Q. What, if any, reference to any of those lines or
5 measurements have to do with tire diameter?

6 A. I would say none. The tires are merely shown
7 there to, for completeness, just to indicate that the
8 aircraft has tires, and that the aircraft is sitting on the
9 gear, and with aircraft weight on the gear.

10 But there are no dimensions there that would
11 reflect anything about tires.

12 Q. All right.

13 How about on this next diagram, D-1217, is there
14 anything on there that would indicate reference or dimensions
15 as to tires?

16 A. No dimension that you could really use, except
17 this picture being a little more enlarged than the previous
18 picture, you see the picture of the tires there on the
19 lower center, and you see two tires that would be the forward
20 main, and the two tires that would be the aft main.

21 The letter C kind of comes down toward the aft
22 main tire. If you look real closely, you can see that those
23 tires -- the artist was fairly accurate here. The tires are
24 sitting on the ground, and it shows the results of the
25 weight of the aircraft sitting on that tire, and the tire

1 is somewhat flattened on the bottom to indicate that the
2 aircraft weight is really compressing and flattening out
3 that tire slightly.

4 And on the top side of that -- and, again, you have
5 to look real closely, but you could see that it shows the
6 tire -- the top diameter of that tire kind of comes up
7 beyond the fuselage skin line, protruding up higher than
8 the lower surface of the fuselage.

9 Q. Would that depict the way it appears on the
10 airplane sitting on the ground?

11 A. That is much more accurate. Yes, it is. The tire
12 would be flat on the bottom, and the tire actually comes
13 up into the fuselage slightly.

14 Q. If you were going to try to get a tire diameter,
15 would you use this diagram?

16 A. No, sir, I would not.

17 Q. What would you have to use?

18 A. Well, here again there are other tech orders on
19 the aircraft that describe the landing gear system, and it
20 will tell you what type of tire is down there, and it will
21 give you something like a part number for the tire.

22 In fact, it will give you the size of the tire
23 pretty much like you see the size of an automobile tire,
24 stamped on the side of the tire.

25 And the aircraft handbook for the landing gear

1 system, which would include the tires is the 1-C-5A-2-10.

2 It's the tenth handbook, and that's the one for the landing
3 gear system.

4 Q. Do you know the diameter of the tires, sir?

5 A. Yes, I do.

6 Q. What is it?

7 A. The tire size listed in that maintenance manual
8 for the landing gear calls it a 49 by 17 tire, and a 49 is
9 a very close approximation of the diameter of the tire.

10 To get the precise diameter, you would have to go
11 to a little more detailed handbook information, but that
12 is really close.

13 Q. Do you know the precise diameter?

14 A. Going to the tire, commercial tire catalogue for
15 that military tire, 49 by 17, it gives you a maximum and
16 a minimum diameter for the tire.

17 I don't recall those precise numbers, but it's --
18 on the high side, it's something slightly greater than 48
19 inches, and on the low side it's something a little bit less
20 than 48 inches.

21 And if you can take the two and get the nominal
22 diameter, it comes out to four feet -- 4.02 feet.

23 Q. All right.

24 Sir, I would like to show you two other exhibits.

25 THE COURT: I didn't get that.

1 MR. DUBUC: I beg your pardon?

2 THE COURT: I missed something.

3 4402 feet what?

4 THE WITNESS: 4.02. I said four, and then I said
5 4.02.

6 THE COURT: Excuse me. I have it.

7 Thank you.

8 BY MR. DUBUC:

9 Q I would like to show you Exhibit 10-C which has
10 been marked by plaintiffs, and 10-C-1, I believe marked.

11 Have you seen those before, sir?

12 A Yes, I have.

13 Q What do those depict?

14 A 10-C was the first picture I saw some appreciable
15 time ago. I don't know exactly when. It obviously is a
16 picture that someone took in side the troop compartment
17 of this airplane, and from some point about in the middle
18 of the troop compartment looking forward, and it shows some
19 of the overhead trim that has been pulled down, and some of
20 it missing, and it shows some of the seats, and it shows
21 that most of the seat cushions have been removed by someone,
22 so you are looking at the metal back of the seat in this
23 picture.

24 Q What does the other picture, 10-C-1, depict?

25 A 10-C-1 is a more recent picture. It is a more

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1 recent copy of the same picture. And the only difference
2 is that 10-C from 10-C-1, the colors are correct in this
3 picture. The colors in this 10-C-1 look like the actual
4 colors of that overhead trim as it exists in every C-5 in
5 the fleet today.

6 Q. Sir, did you go in the troop compartment of this
7 aircraft?

8 A. Yes, I did. I went in that troop compartment the
9 first day, and several times thereafter. I don't remember
10 specifically how many times.

11 Q. Can you tell us which of the two exhibits, 10-C
12 or 10-C-1, based on your own observations reasonably and
13 accurately reflect the scene in the troop compartment, the
14 colors and whatever else is shown?

15 A. The later picture, 10-C-1 shows the right color
16 for that overhead trim, which is basically a very light tan
17 type color, as opposed to the first picture which shows a
18 blue.

19 Q. All right, sir.

20 With respect to those seats, by the way, what kind
21 of seats are depicted there? We have had testimony of
22 rearward facing and forward facing, and which ones are
23 those?

24 A. These seats are the rearward facing seats.

25 Q. How many forward facing seats are there in the

troop compartment?

A. There are only two, and they are in the aft-most end over on the right side, and those are commonly referred to as load master seats.

And the load master wants to be seated so he is looking forward, looking at his passengers. Normally, all military seats are facing aft, but there is a special reason for these facing forward.

Q. Just so the jury understands this, this is the
Exhibit 10 -- D-1210 (indicating).

You mentioned rearward facing seats. All of them are rearward facing except two, you said?

A. Except two in the aft right-hand corner right under your pencil.

0. Are those the two?

A. Those are the two that are commonly referred to as load master seats, and they face forward, yes.

Q. Exhibits 10-C and 10-C-1 that you are looking at, what area of the troop compartment do those depict?

A. I would say that whoever took this picture was standing approximately in the middle of the aircraft -- in about the middle of that troop compartment -- excuse me -- looking forward, somewhere along in there.

Q. Sir, referring to the troop compartment again, that section that we have seen in the picture that is on

1 the ground, do you have an opinion to a reasonable scientific
2 certainty as to the approximate weight of that section,
3 structure and section?

4 A Approximate weight, yes. At one time while we were
5 on site we wanted to remove part of the 2100 bulkhead that
6 I referred to awhile ago, to analyze to see what part, if
7 any, it had to play in the cause of this in-flight problem.

8 And to do that we wanted to turn the thing over,
9 to get it up out of the water so we could cut it out and
10 take it back home with us.

11 And so the question was asked: How much do you
12 think that weighs? Can we lift it with a helicopter? And
13 we did an estimate and not a very lengthy analysis and
14 things like that, but with the best estimate we could come
15 up with is that as it rested there, it weighed between 10
16 and say, 15 tons, twenty to thirty thousand pounds.

17 Later on we decided that even if we could lift
18 the 10 or 15 tons, that that was only part of our problem
19 because this thing is in the mud, and to pull it up out of
20 the mud nobody could estimate how much force that would take,
21 so we had to abandon that idea.

22 So we did approximate the weight to be between
23 10 and 15 tons.

24 Q All right.

25 Just bear with me one moment, Your Honor.

1 So we know what we are talking about, is this what
2 you were referring to, this component?

3 MR. LEWIS: Excuse me.

4 May I have the exhibit number again, please?

5 MR. DUBUC: I'm sorry.

6 MR. CONNORS: D-1381.

7 BY MR. DUBUC:

8 Q. Is this the component that you have just been
9 discussing, where you have the weight between 10 and 15 tons?

10 A. That is correct, yes.

11 Q. Sir, in your observations of this troop compartment
12 in Vietnam, when you were there, did you notice any
13 significant, and for that matter, any deformation or
14 compression with respect to the longitudinal structure of
15 this component?

16 A. No, we did not notice any deformation of that
17 area that basically comprised the inside, the inhabited
18 compartment.

19 Of course, those side panels sort of acted like
20 outriggers on a boat and floated up, and, yeah, they were
21 severely deformed and so forth, but the floor structure of
22 the compartment and et cetera -- in fact, the openings that
23 you see there, the dark opening on the front, that is a
24 kind of a popout door.

25 In fact, you see the door just under that. Those

1 doors evidently all operated properly, indicating that
2 the structure was not sprung or stressed highly that would
3 bind the doors.

4 The aft door that you see is closed now. That
5 door actually raises up and down in tracks and those doors
6 operated, and you have got to turn a handle and lift, lift
7 with a certain amount of weight, force and so forth, but
8 those doors operate on both sides of the aircraft, and that,
9 again, is an indication that there is no deformation of any
10 degree, at least that would affect those doors.

11 MR. DUBUC: Thank you, sir.

12 That concludes my examination, Your Honor.

13 MR. LEWIS: Can I have the lights, Mr. Marshal.

14 Thank you very much.

15 CROSS-EXAMINATION

16 BY MR. LEWIS:

17 Q When did you join the C-5 program, sir?

18 A I joined the C-5 program almost the day of the
19 initial contract, which was in September 1965.

20 Q Did you design any part of it?

21 A I was involved in the design of a great deal of
22 the aircraft. My initial assignment was department manager
23 of the electrical and electronics department.

24 Q Did you do any of the structural design?

25 A No, I was not involved in the structural design,

1 and I was department manager of the avionics and electrical
2 sections of the aircraft.

3 Q Your expertise as far as design was concerned, was
4 limited to electronics and that sort of thing, is that right?

5 A Prior to that time, I had been a supervisor of
6 groups that were involved in structural design, but I
7 personally did not design the structure of this aircraft.

8 No, sir.

9 Q Or any part of it, of the structure or any of the
10 things that we have been talking about, right?

11 A No, sir. There were literally thousands of
12 engineers involved in this design. I was only one. I don't
13 profess to have designed this airplane by myself.

14 Q I understand that.

15 What is the difference between your degree and a
16 Ph.D. aeronautical engineer as far as training in structures
17 and aeronautics goes?

18 A Well, I think that with a Ph.D. degree you would
19 have gone to college a couple more years longer, but --

20 Q I just want to know what, if anything, ---

21 A And you would have studied some slightly different
22 courses and things, but ---

23 Q You design structures as an aeronautical engineer?

24 A No, sir. I wouldn't think that you would.

1 Q. Now, did you ever meet with any of the Lockheed
2 expert group at a meeting in a club in Washington, D.C. in
3 August?

4 A. With a group of Lockheed people?

5 Q. Consultants for Lockheed.

6 A. I met with a group of defense people, yes.

7 Q. Well, who was there?

8 A. Well, members of the defense counsel were there.

9 Q. Who?

10 A. Mr. Dubuc, Mr. Connors, Mr. Tom Olney, Mr. Piper --

11 Q. Mr. Piper was there?

12 A. Yes, sir. There were others and I'm -- I can't
13 recall.

14 Q. Other lawyers?

15 A. I imagine there were. I really can't recall
16 their names.

17 Q. All defense lawyers?

18 A. As far as I know. I assume they were on the
19 side of the defense.

20 Q. All right.

21 And what other experts for Lockheed were there in
22 addition to yourself? Was Dr. McMeekin there?

23 A. I don't honestly remember.

24 Q. Were the doctors that are testifying for the
25 Lockheed Aircraft Corporation there?

1 A. There were some doctors that I could, their names

2 I could remember: Dr. Berry and Dr. Gaume, Dr. Turnbow --

3 beyond that, I don't really have the gift of being able to

4 remember people's names. I wish that I did, but unfortunately

5 I don't recall.

6 Q. How many Lockheed expert consultants were there?

7 A. Oh, I would say approximately 15 going around the
8 table; maybe 15, 16. I'm not sure. I didn't keep any names,
9 and I didn't count any numbers.

10 Q. Some of the doctors that have testified for
11 Lockheed as far as injuries of the children were there, too,
12 were they not?

13 MR. DUBUC: Your Honor, I don't think he mentioned
14 any doctors that testified on injuries, so ---

15 MR. LEWIS: He mentioned Dr. Gaume.

16 THE COURT: Objection sustained.

17 BY MR. LEWIS:

18 Q. Were there physicians there?

19 A. Physicians?

20 Q. Physicians who have testified?

21 A. Like normal medical doctors?

22 Q. Physicians who have testified as a consultant
23 for Lockheed?

24 A. I mentioned Dr. Berry, and I'm not sure what his
25 area of his profession is. I don't know whether he is a

1 regular medical doctor, I don't know whether he is a professor
2 of medicine, or a professor of something else.

3 Q. Can you name any other physicians that were there,
4 sir?

5 A. Right offhand, I can't. I guess if I were to see
6 a list of names, some of them might pop up and refresh my
7 memory.

8 Q. All right.

9 May I have the use of one of those (indicating.)

10 Now, this diagram, which is Exhibit 9-A, was this
11 diagram prepared by the Air Force, sir?

12 A. I'm not sure who prepared that. I assume it was
13 prepared by the Air Force.

14 Q. And it was part of the accident report?

15 A. Part of the accident report, yes.

16 Q. Now, this feature here was the tracks, the initial
17 tracks that are shown on the photograph, was it not?

18 A. I indicated earlier that that really, that circular
19 pattern there, that that was the irrigation canal, and the
20 pictures bear that out.

21 Q. Well, did you ever describe that as an 850 feet
22 set of tracks?

23 A. No, sir. I had described an 850 foot link to that
24 section of the cargo floor, or somewhere thereabouts 850
25 feet, but I don't believe I have ever referred to that line

1 as being a track of the aircraft.

2 In fact, I have said quite the opposite. I have
3 said that it is not the track of the aircraft.

4 Q. Well, let me call your attention to the Schneider
5 transcript and this is at page 2366.

6 "QUESTION: ---

7 THE COURT: Ask him if he was asked these questions
8 and gave these answers.

9 MR. LEWIS: I'm sorry, Your Honor.

10 BY MR. LEWIS:

11 Q. Do you remember testifying on that occasion, sir?

12 A. Yes, I remember testifying.

13 Q. All right.

14 Now, I'm going to read you something and ask you
15 if that is what you said.

16 "QUESTION: When did you say the wings
17 broke off?

18 "ANSWER: On the wreckage diagram that
19 we saw earlier, the tracks are all
20 together after it came across the dike
21 about 850 feet, and at that point there
22 are two distinct sets of tracks, tracks
23 of the flight crew compartment bearing
24 off to the left, and another set of
25 tracks which are separate for the aft

troop compartment. That is the point when they broke apart."

You did describe that section ---

THE COURT: Do you have a question now?

MR. LEWIS: I'm sorry, sir.

BY MR. LEWIS:

0. Did you say that, sir?

A. If that is the transcript, yes, I imagine I said that.

Q. All right.

Now, that is the section that measured 850 feet
that you were speaking of, is it not?

A. No, sir. I disagree.

Q. All right. Show me ---

A I think you are taking that out of context. I think I was asked a certain question, that there were one set of tracks. I never inferred that that line there was a track of the aircraft.

MR. DUBUC: Note my objection, Your Honor. I don't believe the question and answer he read referred to Exhibit

D-9.

MR. LEWIS: It refers to the wreckage diagram, Your Honor, and it is the only one I know of.

THE COURT: Objection is overruled.

Go ahead.

1 BY MR. LEWIS:

2 Q. Now, this would measure, scaled on this diagram,
3 this piece here, 850 feet, wouldn't it?

4 A. I'm not sure. I don't think I ever scaled that
5 thing. I did scale a section of the cargo floor, but I
6 don't believe I ever scaled that geographic line on that map.

7 Q. Well, one of the points of the wreckage diagram
8 is to show the tracks left by the wreckage, isn't it?

9 A. Well, as I say, I didn't make that. I don't
10 know who ---

11 Q. Would you answer that question, please?

12 A. I wouldn't know. It's all according to the
13 guy who makes it, and I didn't make that.

14 Q. I understand that, but isn't one of the functions
15 of the wreckage diagram to try to show the important features
16 where the parts are and the marks they left on the ground?

17 Isn't that one of the purposes of the diagram?

18 A. It may be one of the purposes, but I'm sure that
19 the distribution is one of the major things.

20 Q. All right.

21 Are you suggesting that the Air Force left off
22 the tracks of the airplane as it came across the river from
23 their diagram?

24 A. I wouldn't put it in a connotation that he left
25 them off. I would just think that he didn't put -- you know,

1 when he put the thing down there, that maybe he didn't think
2 that was important, that he just wanted to locate the parts
3 and so forth.

4 Q. Well, tell me this: You were there during the time
5 the Air Force people were there, were you not, sir?

6 A. I was.

7 Q. Did anyone take -- strike that.

8 Did you make any measurements of any tracks?

9 A. No, I did not make any measurements of tracks,
10 that is.

11 Q. Did you see anyone for the Air Force make any
12 measurement of any track?

13 A. I don't believe that I did. I was kind of busy
14 doing the things that I was assigned to do there.

15 As I say, I don't know who made that diagram.

16 Q. Do you know whether the author of the diagram
17 made any measurement of tracks or not?

18 A. I cannot say.

19 Q. Now, you never walked on the dike in the immediate
20 vicinity right here, did you?

21 A. Yes, I did.

22 Q. Let me read you your deposition.

23 A. I walked on that track fairly late in the game.

24 THE COURT: We will have to do this correctly,
25 or I will stop you from doing it.

1 MR. LEWIS: I'm sorry, Your Honor.

2 BY MR. LEWIS:

3 Q Sir, was your deposition taken on 9-24-81, do you
4 recall that, sir?

5 A Don't pin me down to dates. I have had a lot of
6 depositions.

7 THE COURT: What was the date, Mr. Lewis?

8 MR. LEWIS: 9-24-81.

9 THE WITNESS: Oh, okay. I believe that is true.

10 BY MR. LEWIS:

11 Q All right.

12 And do you remember me asking you some questions
13 at the deposition?

14 A All day long. Yes, sir.

15 Q All right.

16 Now, at page 180, gentlemen:

17 "QUESTION: How far was the dike from the
18 river level?

19 "ANSWER: I stayed approximately five feet.

20 "QUESTION: Did you measure it?

21 "ANSWER: No. I'm just judging from the
22 photographs, and I did walk on that dike,
23 but I did not measure that dike.. I didn't
24 walk on it in that immediate area, but I
25 did walk that dike at least once.

1 "QUESTION: But you never did walk the dike
2 at the area where the aircraft struck it,
3 did you?

4 "ANSWER: I don't recall that I did."

5 Now, did you say that on that occasion?

6 A. I imagine that I did.

7 Q. All right.

8 Now, does that refresh your recollection, sir, as
9 to whether or not you actually walked on the dike in the
10 area where the aircraft struck the dike?

11 A. As I stated then, I walked that dike one time and
12 that one time, as I recall, was the last day that I was there,
13 and I physically set feet on the dike that day, and the
14 reason is we were over there for a last look ---

15 Q. Excuse me, sir. My question is: Does that
16 refresh your recollection as to whether or not you walked
17 on the dike in that immediate area?

18 A. I never set a foot down on the area where that
19 aircraft crossed that, but I did fly over it in a helicopter.

20 Q. So you say now you didn't walk across it, you
21 flew over it?

22 A. We are talking about the immediate area where the
23 aircraft brushed the dike, and I did not set foot on that,
24 but I did fly over it in a helicopter, and I did walk on
25 other areas, and that's what I said in that statement, and