

1 HONOR?

2 THE COURT: HAVE YOU TESTIFIED BEFORE?

3 MR. WELCH: NO.

4 THE COURT: GO BACK CLOSER TO THE PODIUM, AND
5 THEN YOU CAN TALK TO THE JURY, AND I CAN SEE. YOU ARE
6 GOING TO BE ADDRESSING THOSE FOLKS THERE.

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

10 THE COURT: SWEAR THE WITNESS WHERE HE IS,
11 MARSHAL.

12 WHEREUPON,

13 ROBIN WELCH

14 WAS CALLED AS A WITNESS, AND, HAVING BEEN FIRST DULY SWORN,
15 WAS EXAMINED AND TESTIFIED, AS FOLLOWS

16 THE COURT: MR. DUBUC, IF YOU WANT TO INQUIRE
17 FROM THE NEIGHBORHOOD OF THE WITNESS STAND, YOU CAN DO
18 THAT.

19 MR. DUBUC: OKAY, YOUR HONOR.

20 DIRECT EXAMINATION

21 BY MR. DUBUC:

22 Q. GOOD AFTERNOON, DOCTOR.

23 A. GOOD AFTERNOON.

24 Q. WOULD YOU STATE YOUR NAME AND ADDRESS FOR US,
25 PLEASE?

1 A. YES.

2 MY NAME IS ROBIN WELCH. I LIVE AT [REDACTED] IN
3 MOUNTAIN VIEW, CALIFORNIA.

4 Q. AND WHAT IS YOUR PROFESSION, SIR?

5 A. I AM A RESEARCH SCIENTIST.

6 Q. WOULD YOU STATE YOUR EDUCATIONAL BACKGROUND
7 FOR US?

8 A. YES.

9 I AM A GRADUATE OF THE UNIVERSITY OF CALIFORNIA AT
10 BERKLEY, WHERE I RECEIVED A BACHELOR OF SCIENCE DEGREE
11 IN FORESTRY IN 1955; A MASTER OF SCIENCE DEGREE IN FORESTRY
12 IN 1956; AND A PH. D. GIVEN BY THE SCHOOL OF FORESTRY
13 IN CONSERVATION, AGAIN, AT THE UNIVERSITY OF CALIFORNIA,
14 IN 1971.

15 Q. AND COULD YOU STATE YOUR PROFESSIONAL BACKGROUND?

16 A. YES, SIR.

17 I WAS -- I WENT INTO THE AIR FORCE WHILE I WAS STILL
18 IN SCHOOL AT THE TIME OF THE KOREAN WAR IN 1951.

19 I WAS A FIGHTER PILOT IN THE AIR FORCE AND WAS INJURED
20 IN AN ACCIDENT, AN AIRPLANE CRASH. I ENDED UP IN A WHEEL-
21 CHAIR.

22 I RETURNED TO BERKLEY TO COMPLETE MY DEGREES IN 1955,
23 AS I STATED.

24 THEN, I TOOK GRADUATE WORK AND DID PART-TIME WORK
25 IN AERIAL PHOTOGRAPHY, STARTING MY OWN AERIAL-PHOTOGRAPHY

1 BUSINESS, TAKING AERIAL PHOTOS, FLYING THE AIRPLANE, DOING
2 DARKROOM WORK, CONSULTING ON INTERPRETATION ON THE PHOTOGRAPHY.

3 AND, THEN, IN 1963, I WENT TO WORK FOR ANOTHER COMPANY,
4 NOT MY OWN AERIAL-PHOTO COMPANY, AND DID PHOTO-OPTICAL
5 ENGINEERING WORK IN PHOTO INTERPRETATION, SPECIALIZING
6 IN AGRICULTURAL INTERPRETATION.

7 WE WERE DOING A GLOBAL WHEAT SURVEY, ONE OF THE FIRST
8 SURVEYS THAT HAD BEEN DONE WHERE WE USED AERIAL PHOTOGRAPHY
9 AND SIMULATED SPACE PHOTOGRAPHY TO INTERPRET WHEAT CROPS,
10 AND DETERMINE YIELD OF WHEAT AND RICE.

11 AND THEN I SUBSEQUENTLY WENT TO WORK FOR THE STANFORD
12 RESEARCH INSTITUTE IN 1966.

13 I DID SIMILAR WORK FOR THEM, ALTHOUGH THERE WAS A
14 CONSIDERABLE AMOUNT OF WORK IN WATER-POLLUTION STUDIES
15 AND COASTAL ZONE STUDIES, INTERPRETING AERIAL PHOTOS,
16 ACTING AS A CONSULTANT ON A NUMBER OF PROJECTS INVOLVING
17 THE NASA WORK, WHEN NASA WAS BEGINNING TO GET STARTED
18 WITH THE SPACE PROGRAM, OF DEVELOPING CAMERAS THAT WOULD
19 FLY IN SATELLITES THAT WOULD RECORD THE GROUND SCENE AND
20 THEN TEACHING PEOPLE HOW TO INTERPRET THOSE PHOTOGRAPHS,
21 ONCE THEY WERE OBTAINED.

22 THEN, IN 1970, I WENT TO WORK FOR THE EARTH SATELLITE
23 CORPORATION IN BERKLEY, AND AT THAT TIME WE WERE DOING
24 GLOBAL OPERATIONS, TEACHING VARIOUS COUNTRIES AROUND THE
25 WORLD HOW TO USE SPACE PHOTOGRAPHY.

1 PRIMARILY, WE WERE DOING AGRICULTURAL RESEARCH, RANGE-
2 LAND STUDIES FOR LIVESTOCK MANAGEMENT, SOME FORESTRY
3 WORK, WATER-POLLUTION STUDIES.

4 OCCASIONALLY, I WOULD BE INVOLVED IN MILITARY-RECON-
5 AISSANCE INTERPRETATION FOR VEGETATION STUDIES.

6 IN 1975, I WENT TO WORK FOR TEXAS A & M UNIVERSITY,
7 WHERE I WAS ON THE FACULTY, TEACHING THE SAME SUBJECTS
8 I HAVE BEEN TALKING ABOUT, AND THE CONSULTANT ON A GLOBAL
9 WHEAT SURVEY THAT NASA WAS DEVELOPING AT THE TIME FOR
10 INVENTORYING WHEAT THROUGHOUT THE WORLD.

11 AND, THEN, IN 1977, I WENT TO WORK FOR NASA AT AMES
12 RESEARCH CENTER IN CALIFORNIA, AS A PRIVATE CONTRACTOR,
13 AND I WAS THERE FROM 1977 UNTIL 1981.

14 IN NOVEMBER OF LAST YEAR, I WENT TO WORK FOR LOCKHEED
15 MISSILES AND SPACE COMPANY IN SUNNYVALE, CALIFORNIA.

16 I AM NOT SURE WHAT THAT WORK IS GOING TO BE YET,
17 BECAUSE I AM A NEW EMPLOYEE AND STILL WAITING TO BE ASSIGNED
18 TO A PROJECT AT LOCKHEED.

19 Q. ALL RIGHT, SIR.

20 YOU MENTIONED SOME WHEAT SURVEYS. WHAT, IF ANY,
21 EXPERIENCE, OR, IN YOUR EXPERIENCE, WHAT HAVE YOU DONE
22 IN CONNECTION WITH RICE-GROWING?

23 A. I HAVE DONE A CONSIDERABLE AMOUNT OF WORK IN
24 RICE. WE CONSIDER CEREAL CROPS VERY SIMILAR IN BEHAVIOR;
25 THAT IS, WHEAT, OATS, BARLEY, RYE, AND RICE.

1 AND OUR INTERPRETATION VARIES ONLY SLIGHTLY FROM
2 ONE CROP TO THE OTHER.

3 AND I WAS INVOLVED IN GLOBAL SURVEYS OF RICE, AS
4 THEY MAY VARY, DEPENDING UPON WHETHER IT IS LARGE FIELDS,
5 AS WE HAVE HERE IN THE UNITED STATES, OR VERY SMALL FIELDS,
6 AS WOULD BE THE CASE IN SOUTHEAST ASIA AND BURMA, WHERE
7 THEY DO A LOT OF FARMING ON HILLSIDES, AND SUCH.

8 Q. ALL RIGHT, SIR.

9 SIR, IN CONNECTION WITH THIS CASE, WHAT HAVE YOU
10 REVIEWED?

11 A. I HAVE REVIEWED THE DOCUMENTS THAT WERE GIVEN
12 TO ME INVOLVING THE ACCIDENT; THE AIR FORCE COLLATERAL
13 REPORT, AT LEAST AN ABBREVIATED VERSION OF THE COLLATERAL
14 REPORT; SOME OF THE SWORN STATEMENTS OF THE WITNESSES
15 THAT HAVE BEEN CALLED, NOT ALL OF THEM; AND SOME OF THE
16 TESTIMONY, BOTH IN DEPOSITION AND IN TRIAL, OF PEOPLE
17 THAT HAVE BEEN INVOLVED IN THE CASE.

18 PARTICULARLY, I HAVE REVIEWED DR. STANLEY MORAIN'S
19 REPORT, AS HE AND I ARE IN THE SAME FIELD; JOHN EDWARDS,
20 BECAUSE I WANTED TO BE ABLE TO UNDERSTAND THE STRUCTURE
21 OF THE AIRCRAFT, BECAUSE I WOULD BE INTERPRETING PHOTOS
22 OF THAT.

23 I PAID VERY LITTLE ATTENTION TO THE PEOPLE INVOLVED
24 WITH THE CHILDREN, BECAUSE THAT WAS NOT MY AREA.

25 Q. ALL RIGHT, SIR.

1 MR. DUBUC: I WOULD LIKE TO OFFER DR. WELCH
2 AS AN EXPERT IN THE AREAS HE HAS DESCRIBED AND ACCORDING
3 TO THE PROFFER, YOUR HONOR.

4 MR. LEWIS: JUST A FEW QUESTIONS, YOUR HONOR.

5 THE COURT: WHY DON'T YOU INQUIRE FROM OVER
6 THERE BY THE EASEL.

7 MR. LEWIS: ALL RIGHT, SIR.

8 VOIR DIRE EXAMINATION

9 BY MR. LEWIS:

10 Q. YOU ARE NOW EMPLOYED BY LOCKHEED FULL-TIME,
11 SIR?

12 A. YES, SIR.

13 Q. AND YOU ARE WORKING FULL-TIME ON THIS CASE
14 NOW?

15 A. NO, I AM NOT; JUST WHEN I AM CALLED TO WORK
16 ON IT.

17 Q. YOUR ASSIGNMENT, THEN, WAS NOT APPROVED BY
18 LOCKHEED'S ASSISTANT GENERAL COUNSEL?

19 A. YES, IT WAS APPROVED FOR THOSE HOURS THAT I
20 WOULD BE NEEDED.

21 Q. HAVE YOU BEEN TO SOUTHEAST ASIA?

22 A. NO, I HAVE NOT. JAPAN IS THE CLOSEST I HAVE
23 BEEN.

24 THE COURT: I AM SORRY. YOU WILL HAVE TO SPEAK
25 UP FOR ME.

1 THE WITNESS: YES, SIR.

2 MR. LEWIS: HE SAID HE HAD BEEN TO JAPAN, SIR,
3 BUT NOT INDOCHINA.

4 IS THAT CORRECT?

5 THE WITNESS: THAT IS CORRECT.

6 BY MR. LEWIS:

7 Q. ARE YOU FAMILIAR WITH THE LOCAL PLANTS IN THAILAND
8 AND VIETNAM?

9 A. THOSE TWO COUNTRIES, SPECIFICALLY, YES, SIR.
10 I HAVE DONE PHOTO-INTERPRETATION PROJECTS IN WHICH THAILAND
11 AND VIETNAM WERE THE AREAS OF INTEREST.

12 Q. I ASKED YOU:
13 ARE YOU FAMILIAR WITH THE LOCAL PLANTS, THE WILD
14 PLANTS, AS WELL AS THE DOMESTIC PLANTS?

15 A. I AM FAMILIAR WITH THEM, YES, THE PHOTO CHARACTER-
16 ISTICS OF THEM.

17 Q. ARE YOU FAMILIAR WITH THE SOIL CHARACTERISTICS
18 OF SOUTHEAST ASIA?

19 A. NO, I AM NOT.

20 Q. AND YOUR PRINCIPAL FIELD IS FORESTRY, SIR,
21 AND THE INTERPRETATION OF --

22 A. YES, VEGETATION INTERPRETATION. YES, SIR.

23 MR. LEWIS: THANK YOU.

24 THE COURT: THE WITNESS IS QUALIFIED.

25 MR. DUBUC: THANK YOU, YOUR HONOR.

1 THE COURT: YOU MAY INQUIRE.

2 MR. DUBUC: I WOULD LIKE TO OFFER IN EVIDENCE
3 HIS RESUME, D-1449.

4 MR. LEWIS: NO OBJECTION.

5 THE COURT: IT IS RECEIVED. YOU CAN HAND
6 THAT IN LATER.

7 MR. DUBUC: VERY WELL, YOUR HONOR.

8 (DEFENDANT'S EXHIBIT NO. D-1449
9 RECEIVED IN EVIDENCE.)

10 DIRECT EXAMINATION -- (CONTINUED)

11 BY MR. DUBUC:

12 Q. DOCTOR, YOU HAD MENTIONED -- WITHDRAWN.

13 MR. LEWIS ASKED YOU ABOUT YOUR FAMILIARITY WITH CERTAIN
14 THINGS.

15 YOU MENTIONED YOU HAD BEEN A PILOT; IS THAT CORRECT?

16 A. YES, SIR.

17 Q. HAVE YOU CONTINUED TO FLY OVER THE PAST SEVERAL
18 YEARS?

19 A. YES.

20 I HAVE BEEN A PROFESSIONAL PILOT SINCE 1951, FIRST
21 IN THE AIR FORCE. THEN, I WAS A PHOTO-PILOT, FLYING
22 MY OWN PHOTO-AIRCRAFT, FOR 25 YEARS, AND STILL MAINTAIN
23 A CURRENT PILOT'S LICENSE, ALTHOUGH I AM NOT ACTIVELY
24 FLYING NOW FOR A NUMBER OF REASONS.

25 Q. WHEN DID YOU STOP FLYING?

1 A. I FLEW ABOUT TEN DAYS AGO. THAT WAS THE LAST
2 TIME I HAVE FLOWN.

3 Q. I AM TALKING ABOUT FLYING OTHER THAN COMMERCIAL
4 FLYING.

5 A. NO, THIS WAS -- I WAS THE PILOT.

6 Q. ALL RIGHT, SIR.

7 NOW, WITH RESPECT TO THIS CASE, WHAT WERE YOU ASKED
8 TO DO, DOCTOR?

9 A. I WAS ASKED TO UTILIZE THE AERIAL PHOTOGRAPHY
10 AND GROUND PHOTOGRAPHY TO RECONSTRUCT THE SEQUENCE OF
11 EVENTS OF THE C-5A THAT CRASHED IN SAIGON ON THE 4TH OF
12 APRIL, 1975, BY UTILIZING THE PHOTOS AND MY EXPERIENCE
13 IN THE FEATURES THAT WERE VISIBLE, THE GROUND AND THE
14 VEGETATION, TO RECONSTRUCT, AS NEARLY AS POSSIBLE, THE
15 EVENTS OF THE CRASH; AND, THEN, TO CRITIQUE OR EVALUATE
16 DR. MORAIN'S REPORT, WHO, AS I UNDERSTAND IT, WAS TO DO
17 ESSENTIALLY THE SAME THING.

18 Q. WHEN YOU SAY "TO RECONSTRUCT THE EVENTS," DO
19 YOU MEAN THE EVENTS AS INDICATED IN PHOTOGRAPHS?

20 A. YES.

21 Q. ALL RIGHT.

22 NOW, HOW DID YOU DO THAT? I KNOW YOU DID A LOT OF
23 THINGS. BUT WHY DON'T YOU DESCRIBE YOUR METHOD? THAT
24 IS WHAT I AM INTERESTED IN.

25 A. I USED CONVENTIONAL PHOTO-INTERPRETATION TECHNIQUES,

1 SIR.

2 BY THAT, WE WOULD COLLECT THE PHOTOS THAT WOULD BE
3 AVAILABLE OF THE GROUND SCENE; IN THIS CASE, HIGH-ALTITUDE
4 AND LOW-ALTITUDE AND GROUND PHOTOS.

5 AND THEN WE WOULD SYSTEMATIZE THOSE, SO THAT PHOTOS
6 FROM THE GROUND THAT WOULD SHOW CERTAIN FEATURES ON THE
7 AERIAL PHOTO, I COULD CORRELATE THE CLOSE-UP VIEW TAKEN
8 FROM JUST A FEW FEET AWAY WITH WHAT WAS SEEN FROM THE
9 AIR.

10 AND, THEN, USING THOSE PHOTOS, I WAS TO PLOT THE LOCATIONS
11 OF THE POINTS, MEASURE THE DISTANCES FROM ONE POINT TO
12 ANOTHER, AND TRY TO CORRELATE THE POSITION OF CERTAIN
13 FEATURES ON THE GROUND, BOTH THE COMPONENTS OF THE AIRCRAFT,
14 AS WELL AS THE SCRAPES AND SCARS ON THE GROUND, TO TRY
15 AND RECONSTRUCT, PUT THOSE BACK TOGETHER, AND SEE WHAT
16 EVENTS OCCURRED.

17 THIS, AGAIN, IS STANDARD PHOTO-INTERPRETATION TECHNIQUES,
18 WHERE YOU RELY ALMOST EXCLUSIVELY ON THE PHOTOS TO TELL
19 THE STORY.

20 Q. ALL RIGHT.

21 AND DOES THAT DESCRIBE WHAT A PHOTO-ANALYST DOES?

22 A. YES, SIR.

23 Q. OKAY.

24 NOW, TYING IT TO WHAT YOU DID IN THIS CASE, WHAT
25 PHOTOS DID YOU LOOK AT?

1 A. I LOOKED AT THE AERIAL PHOTOS AND GROUND PHOTOS
2 THAT WERE TAKEN SUBSEQUENT TO THE ACCIDENT.

3 SOME OF THEM WERE TAKEN WITHIN A FEW HOURS AFTER
4 THE ACCIDENT, AND SOME OF THEM WERE TAKEN, OBVIOUSLY,
5 A FEW DAYS LATER, AND PROBABLY NOT MORE THAN A COUPLE
6 OF WEEKS LATER.

7 AND THEN I LOOKED AT THE GROUND PHOTOS THAT WERE
8 TAKEN BY THE OBSERVERS ON THE GROUND, BOTH IN COLOR AND
9 BLACK-AND-WHITE.

10 Q. DID YOU USE ALL OF THE PHOTOS THAT YOU LOOKED
11 AT IN YOUR ANALYSIS?

12 A. I CONSIDERED A VERY SIZABLE NUMBER OF PHOTOGRAPHS:
13 PERHAPS 100 BLACK-AND-WHITE AND 100, OR NEARLY THAT, IN
14 COLOR, AND A MOVIE THAT WAS AVAILABLE, A 20-MINUTE MOVIE,
15 SIR.

16 BUT I DID NOT SPEND AS MUCH TIME ON MANY OF THE
17 PHOTOS. AS YOU WOULD EXPECT, SOME OF THEM WERE EITHER
18 REPETITIVE, OR DID NOT TELL ME SOMETHING SPECIFICALLY
19 ABOUT THE FEATURE I WAS LOOKING AT.

20 I SELECTED ABOUT TWO DOZEN PHOTOS -- ACTUALLY, THREE
21 DOZEN PHOTOS -- AND INCLUDED THEM IN MY REPORT.

22 AND, FROM THOSE PHOTOS, I WAS ABLE TO DESCRIBE THE
23 TEXT THAT I PREPARED OF THE ACCIDENT.

24 Q. OKAY.

25 NOW, DID YOU MAKE SOME MEASUREMENTS?

1 A. YES, SIR, I DID.

2 Q. TELL US HOW YOU DID THAT.

3 A. I UTILIZED, AS MUCH AS POSSIBLE, THE SAME TECHNIQUES
4 THAT WERE USED BY DR. MORAIN.

5 FOR EXAMPLE, FOR VERY FINE DETAIL, WE USE A SMALL
6 MAGNIFYER WHICH HAS ETCHED ON THE FACE OF IT A SET OF
7 LINES, AND THESE ARE MILLIMETERS.

8 THEY ARE ACTUALLY A TENTH OF A MILLIMETER. THEY
9 ARE ALMOST TOO SMALL TO SEE WITH THE NAKED EYE.

10 AND I WOULD MEASURE VERY SMALL DISTANCES ON THE PHOTOGRAPH
11 WITH A MAGNIFIER, WHICH IS THE SAME AS DR. MORAIN USED.
12 AND IT IS A RATHER STANDARD TECHNIQUE, COMMONLY USED BY
13 PHOTO-INTERPRETERS.

14 Q. ALL RIGHT.

15 A. I ALSO USED A MILLIMETER SCALE THAT WAS ABOUT
16 300 MILLIMETERS LONG FOR TAKING LARGER DIMENSIONS.

17 I USED A MAGNIFYING GLASS, WHICH IS A RATHER STANDARD
18 READING GLASS, FOR STUDYING FEATURES IN DETAIL.

19 I ALSO USED A STEREOSCOPE FOR PRESENTING 3-D, THREE-
20 DIMENSIONAL INFORMATION.

21 AND, THEN, I USED THE PROJECTOR THAT WE HAD, THE
22 MOVIE PROJECTOR, FOR VIEWING THE MOVIE FILM.

23 Q. AND DID YOU REVIEW ANY CUTS OR PICTURES FROM
24 THE MOVIE FILM, ITSELF?

25 A. YES. WE SELECTED CERTAIN -- I SELECTED CERTAIN

1 FRAMES THAT WERE PARTICULARLY PERTINENT TO THE SCENE.

2 AND THE MOVIE FILM WAS QUITE EXCELLENT, BECAUSE IT
3 WAS A CONTINUOUS RECORD, AS THE HELICOPTER FLEW AROUND,
4 WHILE THE BLACK-AND-WHITE AND COLOR PHOTOS WOULD BE SINGLE
5 SHOTS IN A FEW PLACES.

6 BUT THE MOVIE FILM WAS A CONTINUOUS RECORD.

7 BY TAKING OUT SELECTED FRAMES, PERHAPS EVERY 30
8 FRAMES, OUT OF A 16-MILLIMETER-MOVIE FILM, AND THEN ENLARGING
9 THEM -- I WOULD LIKE TO SHOW YOU ONE OF THOSE, JUST TO
10 GIVE YOU AN IDEA OF WHAT WE DID.

11 WE SELECTED CERTAIN FRAMES AND THEN ENLARGED THOSE
12 TO EIGHT-INCH-BY-TEN-INCH PHOTOGRAPHS.

13 THEN, BY PUTTING THESE ON A LIGHT TABLE AND VIEWING
14 THEM STEREOSCOPICALLY, THE GROUND WOULD STAND UP FOR US.
15 WE COUD SEE THREE-DIMENSIONALLY, AS IF WE WERE STANDING
16 UP THERE, A GIANT PERSON, LOOKING AT THE GROUND.

17 AND THE MOVIE FILMS PERMITTED US TO DO THAT. THEY
18 WERE QUITE USEFUL, AND, AGAIN, A CONTINUOUS RECORD. I
19 WILL REFER TO THESE FROM TIME TO TIME.

20 Q. WHY DON'T WE JUST GET THAT CLEAR. YOU MENTIONED
21 SOMETHING ABOUT "STEREOSCOPIC"?

22 A. YES.

23 Q. THAT IS JUST VIEWING PARTS OF THE MOVIE FILM,
24 SIR?

25 A. YES. WE WOULD TAKE TWO PHOTOS THAT WERE

1 TAKEN FROM SOME DISTANCE APART, AS THE AIRCRAFT WOULD
2 FLY ALONG, AS IF OUR LEFT EYE WOULD BE LOOKING HERE, AND
3 THEN OUR RIGHT EYE WOULD BE LOOKING OVER HERE, AS THE
4 HELICOPTER MOVED ALONG.

5 WE PUT THESE UNDER A STEREOSCOPE, WHICH YOU SEE SITTING
6 ON THE TABLE OVER HERE, ON A LIGHT TABLE.

7 IT WOULD PERMIT ME, THEN, THROUGH MAGNIFICATION,
8 TO VIEW WHERE MY RIGHT EYE WOULD LOOK AT THE RIGHT PICTURE,
9 AND MY LEFT EYE WOULD LOOK AT THE LEFT PICTURE.

10 AND, THEN, OPTICALLY, IN MY BRAIN, I WOULD SEE THINGS
11 STANDING UP, THE BRUSH, AND THE VEGETATION, THE TREES,
12 THE FEATURES.

13 THAT IS AN OPTICAL ILLUSION, BUT IT IS DONE WITH
14 FLAT PRINTS, AND IT IS A RATHER -- IT IS NOT ONLY COMMON,
15 BUT IT IS A PRACTICE THAT ALL PHOTO-INTERPRETERS DO: STEREO-
16 SCOPIC VIEWING.

17 Q. AND THAT IS JUST USING THESE --

18 A. THAT IS USING THESE FLAT PICTURES.

19 Q. AND THIS VIEWER THAT IS SITTING ON THE TABLE
20 OVER THERE?

21 A. YES.

22 Q. ALL RIGHT.

23 A. RIGHT.

24 Q. SIR, WITH RESPECT TO WHAT YOU DID, HAVE YOU
25 FORMED AN OPINION TO A REASONABLE SCIENTIFIC CERTAINTY.

1 AS TO CERTAIN MEASUREMENTS THAT YOU MADE?

2 A. YES, SIR, I HAVE.

3 Q. CAN YOU TELL US WHAT THAT OPINION IS?

4 A. YES.

5 SPECIFICALLY, I LOOKED AT THE SAME DIMENSIONS THAT
6 DR. MORAIN DID.

7 THEY WERE OF INTEREST, NOT ONLY FOR RECONSTRUCTING
8 THE EVENTS OF THE CRASH, BUT ALSO IN ESTABLISHING THE
9 DISTANCES TRAVELED BY THE VARIOUS COMPONENTS.

10 FOR EXAMPLE, FROM THE RIVER BANK TO THE TROOP COMPARTMENT,
11 WHICH IS WHERE THE PEOPLE WERE SITTING, I MEASURED 2068
12 FEET TO THE BACK END OF THE TROOP COMPARTMENT.

13 DR. MORAIN'S MEASUREMENT WAS 1715 FEET.

14 I MEASURED THAT SAME PATH TO THE FLIGHT DECK, WHERE
15 THE PILOT AND THE CREW WERE SITTING, AND I MEASURED THAT
16 TO BE ABOUT 2234 FEET.

17 DR. MORAIN'S MEASUREMENT WAS 1848 FEET.

18 AND THEN I MEASURED TO THE WING STRUCTURE, WHICH
19 WAS BEYOND WHERE THE REST OF THE COMPONENTS LANDED. I
20 MEASURED 2789 FEET.

21 DR. MORAIN MEASURED 2065 FEET.

22 OUR DIMENSIONS WERE SOMEWHAT DIFFERENT.

23 Q. NOW, YOU DESCRIBED THE METHOD THAT YOU USED.

24 A. YES, SIR.

25 Q. AND YOU SHOWED US THAT LITTLE MAGNIFYING GLASS.

1 A. YES.

2 Q. WHAT METHOD DID YOU USE WITH RESPECT TO SETTING
3 UP TO TAKE THE MEASUREMENTS YOU HAVE JUST TOLD US ABOUT,
4 SIR?

5 A. IN ORDER TO TAKE MEASUREMENTS FROM EITHER A
6 MAP OR A PHOTOGRAPH, WE NEED TO KNOW A GIVEN DIMENSION.
7 WE NEED TO KNOW THE SIZE OF SOMETHING ON THE GROUND.

8 COMMONLY, WITH A MAP, IT IS A BAR SCALE THAT SHOWS
9 THAT IS A MILE, AND THIS IS SO MANY FEET.

10 ON THE PHOTOGRAPH, WE HAD TO KNOW THE DIMENSION OF
11 FEATURES ON THE PHOTOGRAPH.

12 GIVEN THOSE FEATURES, WE COULD THEN EXTRAPOLATE FROM
13 THAT TO OTHER FEATURES THAT WE COULD MEASURE.

14 THERE ARE CERTAIN REQUIREMENTS TO DO THAT. THE
15 FEATURES YOU ARE MEASURING ALL HAVE TO BE THE SAME DISTANCE
16 FROM THE LENS.

17 FOR EXAMPLE, WE USED THE TROOP COMPARTMENT, AND WE
18 WOULD MEASURE THAT.

19 AS LONG AS SOMETHING ELSE WAS ANYWHERE ALONG A LINE
20 THE SAME DISTANCE FROM THE LENS, FROM THE CAMERA, WE COULD
21 MEASURE THAT; AND, THROUGH AN ARITHMETIC CORRELATION,
22 DETERMINE THE LENGTH OF THAT FEATURE.

23 IF IT WERE FARTHER BACK, THE CORRELATION WOULD NOT
24 HOLD; OR IF IT WERE CLOSER UP, THE CORRELATION WOULD NOT
25 HOLD.

1 WE WOULD NEED SOME OTHER FEATURE.

2 IN THIS CASE, WE USED A PHOTOGRAPH IN WHICH WE WERE
3 LOOKING DIRECTLY STRAIGHT OUT AT THE TROOP COMPARTMENT
4 AND THE RIVER BANK AND THE FLIGHT DECK AND THE WING SECTION,
5 AND THOSE WERE ESTIMATED TO BE THE SAME DISTANCE FROM
6 THE CAMERA.

7 WE WOULD USE THAT CORRELATION AND AN ARITHMETIC RATIO
8 TO MEASURE THE LENGTHS OF THE DISTANCES I TALKED ABOUT.

9 Q. NOW, YOU MENTIONED THE DIMENSION OF SOMETHING
10 KNOWN.

11 WHAT WAS THE KNOWN DIMENSION YOU USED?

12 A. YES, SIR.

13 THE ONE I USED WAS THE FLIGHT -- THE TROOP COMPARTMENT,
14 WHERE THE TROOPS WERE, THE PASSENGERS WERE SITTING. AND
15 THAT WAS GIVEN AS 75.67 FEET, AS PROVIDED BY JOHN EDWARDS,
16 A LOCKHEED ENGINEER, TO THOSE OF US THAT WERE INVOLVED
17 IN THE INTERPRETATION.

18 Q. ALL RIGHT.

19 DO YOU RECALL -- DID I YEAR YOU SAY YOU REVIEWED
20 DR. MORAIN'S REPORT?

21 A. YES, SIR, I DID.

22 Q. DO YOU RECALL WHAT FIGURE HE USED FOR THAT?

23 A. HE USED 65 FEET, INSTEAD OF 75 FEET, FOR THE
24 TROOP COMPARTMENT.

25 Q. WHAT, IF ANY, SIGNIFICANCE WOULD THAT DIFFERENCE

1 HAVE, SO FAR AS YOUR COMPARATIVE MEASUREMENTS?

2 A. WELL, IT WAS ABOUT A 16 PERCENT DIFFERENCE,
3 JUST THE OVERALL NUMBER. AND, THEREFORE, ANY OF THE
4 DIMENSIONS THAT HE ARRIVED AT FROM THAT TROOP-COMPARTMENT
5 DIMENSION WOULD HAVE BEEN IN ERROR BY THAT POINT, AT LEAST,
6 IF NOT OTHER FACTORS, ALSO.

7 Q. OKAY.

8 NOW, SIR, HAVE YOU FORMED AN OPINION TO A REASONABLE
9 SCIENTIFIC CERTAINTY AS TO THE TERRAIN ON THE WEST SIDE
10 OF THE RIVER?

11 A. YES, SIR, I HAVE.

12 Q. AND WHAT IS THAT?

13 A. TYPICALLY, THE TERRAIN IN THE RIVER DELTA SYSTEM
14 IS FLAT. IT IS VERY FLAT, BECAUSE IT HAS BEEN DEPOSITED
15 OVER THE CENTURIES BY FLOWING WATER, AND IT IS VERY FLAT
16 TERRAIN.

17 AND THAT IS VISIBLE BY THE MEANDERING STREAMS IN
18 THE AREA. THEY ARE MEANDERING, BECAUSE THE STREAMS DON'T
19 HAVE MUCH TOPOGRAPHY TO FORCE THEM INTO A PARTICULAR CHANNEL
20 PATTERN.

21 IT IS VERY FLAT COUNTRY, AS YOU WOULD EXPECT RICE
22 COUNTRY TO BE.

23 THEN, FROM THE GROUND PHOTOS THAT WERE TAKEN FROM
24 GROUND LEVEL, WE COULD SEE A QUARTER OF A MILE, RIGHT
25 FLAT ALONG THE GROUND, WITHOUT ANY INTERRUPTIONS.

1 SO IT WAS QUITE FLAT TERRAIN.

2 Q. OKAY.

3 HAVE YOU FORMED AN OPINION TO A REASONABLE SCIENTIFIC
4 CERTAINTY AS TO THE TERRAIN IMMEDIATELY SURROUNDING THE
5 TROOP COMPARTMENT WHICH YOU USED AS A BASIS FOR YOUR MEASURE-
6 MENTS?

7 A. YES, SIR, I WAS.

8 AND THAT, AGAIN, WAS FLAT. I DETERMINED THAT BY
9 MY STEREOSCOPIC VIEWING, WHERE I TOOK FROM THE MOVIE FILM
10 STEREO PAIRS, LOOKING AT VARIOUS ANGLES AROUND THE TROOP
11 COMPARTMENT, WHERE I WAS ABLE TO SEE IN THREE-DIMENSIONAL
12 VIEWING THE FOLLOWING:

13 THE TERRAIN WAS FLAT.

14 THERE WAS STANDING WATER, AND THE WATER EXTENDED
15 AROUND THE FRONT OF THE TROOP COMPARTMENT.

16 I WILL SHOW YOU THIS IN SOME SLIDES IN A FEW MINUTES.
17 AND I WAS ABLE TO DO THAT BY THE STEREO VIEWING AND COULD
18 SEE THE WATER IN THE AREA.

19 AND I AM CONVINCED THAT IT IS FLAT TERRAIN, ON BEYOND
20 THE FRONT OF THE TROOP COMPARTMENT. THAT THE TROOP COMPARTMENT
21 WAS ACTUALLY SITTING ON FLAT GROUND.

22 Q. ALL RIGHT, SIR.

23 HAVE YOU FORMED AN OPINION TO A REASONABLE SCIENTIFIC
24 CERTAINTY WITH RESPECT TO THE LENGTH AND CONTINUITY OF
25 THE TRACKS BEHIND THE TROOP COMPARTMENT?

1 A. YES, SIR, I HAVE.

2 Q. WHAT IS THAT?

3 A. AND I DID THIS THROUGH A NUMBER OF PHOTOGRAPHS.
4 BECAUSE SOME PHOTOS DO NOT SHOW AS CLEARLY THE TRACKS
5 AS OTHERS DO.

6 AND WE WOULD EXPECT THIS. A PHOTO-INTERPRETER KNOWS
7 THAT, DEPENDING ON THE ANGLE THAT WE LOOK AT THE GROUND
8 SCENE, A FEATURE MAY LOOK SOMEWHAT DIFFERENT.

9 IF WE ARE LOOKING INTO THE SUN, WE HAVE A GLARE FROM
10 THE WATER OR SOMETHING ON THE GROUND.

11 IF WE TURN AROUND AND LOOK THE OTHER WAY, WE WILL
12 NOT SEE THAT GLARE.

13 AND, THEREFORE, AS WE WOULD LOOK AT THE GROUND TRACKS
14 FROM DIFFERENT ANGLES, THEY WOULD TEND TO APPEAR MORE
15 PREDOMINANT IN SOME PHOTOS THAN THEY WOULD IN OTHERS.

16 AND I ALSO LOOKED AT THE GROUND PHOTOS THAT WERE
17 TAKEN BY PERSONS STANDING, LOOKING AT THE GRASS AND SOIL
18 ON THE GROUND.

19 THEN, FROM THE CLOSE-UP VIEWS, I WAS ABLE TO CORRELATE
20 THIS WITH THE AERIAL VIEWS OF THE CONTINUITY OF THE TRACKS.

21 THE TRACKS WERE RELATIVELY CONTINUOUS FROM THE RIVER
22 BANK TO THE STOPPING PLACE AND VARIED ONLY BY THE SOFTNESS
23 OF THE SOIL THEY WERE SLIDING OVER AND, OF COURSE, THE
24 STRUCTURES THAT WERE STILL A PART OF THE SLIDING AIR
25 FRAME.

1 THE FIRST FEW FIELDS CLOSE TO THE RIVER WERE FRESHLY
2 PLANTED RICE, AND WE WILL SEE THESE ON THE PHOTOGRAPHS.

3 THE ONES SLIGHTLY BEYOND, ON FURTHER FROM THE RIVER,
4 HAD NOT BEEN PLANTED TO RICE, AND THEY WERE DRIER.
5 THEREFORE, WE WOULD EXPECT EVEN A PERSON WALKING OVER
6 THE SOIL NOT TO SINK INTO IT.

7 AND THAT IS WHERE WE WOULD SEE THE DIFFERENCES IN
8 THE TRACKS.

9 BUT I AM CONVINCED THEY ARE CONTINUOUS, AND I WILL
10 SHOW THE PHOTOGRAPHS TO ILLUSTRATE THAT.

11 Q. MAYBE WE SHOULD DO THAT, THEN. YOU SAY YOU
12 WANT TO DEMONSTRATE SOME OF THIS?

13 A. YES.

14 MR. DUBUC: THE FIRST SLIDE IS EXHIBIT D-1362.

15 THE COURT: DO YOU WANT TO FURNISH THE WITNESS
16 A POINTER?

17 MR. CONNORS: HE HAS ONE.

18 MR. PIPER: HE HAS ONE.

19 MR. CONNORS: YES.

20 THE WITNESS: THIS IS A PHOTO I DESCRIBED INITIALLY,
21 WHEREBY WE CAN TAKE MEASUREMENTS.

22 BECAUSE ANYTHING THAT IS THE SAME DISTANCE
23 BELOW THE HORIZON, OR THE DISTANCE FROM THE HORIZON DOWN,
24 IS ON A LINE PARALLEL TO WHAT THE CAMERA LENS IS.

25 AND, THEREFORE, ANYTHING ALONG THIS LINE WOULD

1 HAVE THE SAME RELATIVE DIMENSIONS.

2 YOU REMEMBER, I SAID THE TROOP COMPARTMENT
3 WAS 75.67 FEET LONG, AND A LINE DRAWN PARALLEL TO THE
4 HORIZON, WHICH WOULD BE ABOUT LIKE THIS, WOULD PERMIT
5 US TO MEASURE ANYTHING ALONG THAT LINE.

6 THEREFORE, WE CORRELATED FROM THIS POINT TO
7 THE RIVER AND WERE ABLE TO MAKE MEASUREMENTS OF THAT POINT,
8 AS WELL AS THESE OTHER FEATURES.

9 NOW, SOMETHING THAT WOULD BE SLIGHTLY BEYOND
10 IT WOULD HAVE CERTAIN ERRORS IN IT, AND WE COULD NOT USE
11 THOSE NUMBERS EXACTLY.

12 BY MR. DUBUC:

13 Q. WHEN YOU SAY "CORRELATE," DOES THAT INVOLVE
14 THAT SAME PROCESS THAT YOU DESCRIBED, AND I THINK DR.
15 MORAIN DESCRIBED, OF SETTING FIELD BOUNDARIES?

16 A. YES, THE MATHEMATICAL RATIO.

17 WE WOULD MEASURE THIS IN MILLIMETERS. LET'S SAY
18 IT WAS 4.7 MILLIMETERS.

19 THEN, WE KNOW THAT 4.7 MILLIMETERS IS THE SAME AS
20 75 FEET.

21 THEREFORE, 134 MILLIMETERS, PERHAPS, WOULD BE THIS
22 MEASUREMENT, AND IT WOULD BE SOME OTHER NUMBER.

23 AND, THROUGH SIMPLE ALGEBRAIC RATIOS, WE WOULD DETERMINE
24 WHAT THAT LINE WAS.

25 WE CORRELATED THIS, OR CHECKED THIS DIMENSION, ON

1 A NUMBER OF OTHER SOURCES, INCLUDING SOME VERTICAL AERIAL
2 PHOTOGRAPH TAKEN BY THE AIR FORCE, AND THE DIMENSION IS
3 EXACT ON ALL OF THEM.

4 Q. ALL RIGHT.

5 A. SO WE KNEW OUR TECHNIQUE WAS CORRECT.

6 Q. OKAY.

7 MR. DUBUC: MAY WE HAVE THE NEXT SLIDE? I
8 BELIEVE THIS IS D-1437.

9 THE WITNESS: NOW, REMEMBER, I SAID THAT, DEPENDING
10 UPON THE ANGLE THAT THE CAMERA IS LOOKING AT THE GROUND
11 SCENE, WE SEE THINGS WITH GREATER OR LESSER INTENSITY.

12 HERE IT IS LATE IN THE AFTERNOON. THE SUN
13 IS OUT HERE TO THE WEST, AND THE SUN HITS THE WATER SURFACE
14 AND GLARES OFF TO US LIKE A MIRROR.

15 THEREFORE, IT IS VERY EASY TO SEE THE GROUND
16 TRACKS IN THIS FEATURE AND EVEN SPOTS OF WATER OFF IN
17 THE DISTANCE ARE QUITE READILY VISIBLE.

18 THIS IS THE RIVER BANK ON THE WEST SIDE OF
19 THE RIVER WHERE THE AIRCRAFT FIRST IMPACTED ON THE WEST
20 SIDE.

21 AND, AS IT SLID ALONG, IT SCARRED UP THE RICE
22 FIELD.

23 NOW, LET ME POINT OUT:

24 THIS IS RICE HERE, RICE HERE. THIS IS A RICE
25 FIELD, AND THIS GREEN RICE FIELD HERE.

1 THEY ARE FLOODED. RICE IS GROWN IN FLOODED
2 AREAS. THEREFORE, IT IS VERY SOFT. ONE WALKING IN THERE
3 WOULD SINK IN RATHER DEEPLY, UP TO HIS ANKLES.

4 AND, THEREFORE, WHEN THE AIRCRAFT TRAVELED
5 THROUGH THAT, IT LEFT VERY DEEP SCARS.

6 THIS AREA WAS NOT PLANTED; AND, THEREFORE,
7 WAS DRIER; AND THE AIRCRAFT WOULD SLIDE ALONG IT. AND
8 A PERSON COULD WALK ALONG WITHOUT SINKING INTO THE SOIL.

9 THERE ARE OTHER FEATURES THAT ARE OF INTEREST
10 HERE.

11 AS VARIOUS COMPONENTS OF THE AIRPLANE WOULD
12 TEAR OFF AND BOUNCE ALONG, I WOULD LOOK AT THESE POINTS;
13 AND I COULD SEE STANDING WATER IN THOSE FEATURES.

14 AND I WOULD TRACE FROM THOSE POINTS TO SOME
15 OTHER KNOWN FEATURE.

16 THEREFORE, I CAN TRACE FROM HERE TO THE TROOP
17 COMPARTMENT AND TRACE A SEPARATION POINT OUT TO THE FLIGHT
18 DECK.

19 AND I DON'T SEE ANY CONTINUOUS TRACE FOR THE
20 WING. I WOULD ASSUME THAT THE WING WAS ACTUALLY AIRBORNE
21 THROUGH THAT AREA, BECAUSE I DON'T SEE A GROUND TRACE
22 FOR IT.

23 BY MR. DUBUC:

24 Q. OKAY.

25 A. THE NEXT SLIDE.

1 MR. DUBUC: THE NEXT SLIDE IS D-1494.

2 THE WITNESS: NOW, WE ARE MOVING ON UP THE
3 SAME TRACK THAT I JUST SHOWED YOU, AND WE ARE LOOKING
4 AT THE SAME RICE FIELDS HERE AND HERE.

5 YOU NOTICE, THEY ARE QUITE HEAVILY COVERED
6 WITH WATER. AND, AS IT GETS DRIER UP IN THIS AREA, WE
7 SEE ONLY A LOT SMALLER AMOUNT OF WATER.

8 YET, THE VEGETATION IS SCRAPED OFF THE GROUND
9 WHERE THE TROOP COMPARTMENT SLID. IT ACTUALLY MOWED THE
10 RICE OFF HERE, AND MOWED OFF WHATEVER VEGETATION WAS HERE,
11 AS IT MOVED ON UP TO THIS POINT, AND THE FLIGHT DECK WOULD
12 HAVE MOVED UP HERE.

13 NOW, I ATTRIBUTED, IN MY OPINION, THAT THIS
14 WAS THE POINT WHERE THE SEPARATION OF THE AIRCRAFT ACTUALLY
15 BEGAN.

16 BECAUSE I CAN TRACE THE PATH OF THE FLIGHT
17 DECK AND TRACE THE PATH OF THE TROOP COMPARTMENT BACK
18 TO THIS POINT.

19 I HAVE ALSO MEASURED THE DIMENSIONS OF THE
20 BELLY OF THE AIRCRAFT HERE AND THE SPACING OF THE ENGINES.
21 THIS IS THE RIGHT INBOARD ENGINE. THIS WOULD BE THE
22 LEFT OUTBOARD ENGINE.

23 AND THAT TOLD ME AT THAT POINT THAT THE ENGINES
24 ACTUALLY CONTACTED THE GROUND AND INITIATED THE SEPARATION.

25 THEN, THROUGH MY INTERPRETATION, I WAS ABLE

1 TO TRACE THESE LINES, AND WE WILL SEE THAT ON THE NEXT
2 FEW PHOTOS.

3 SO THAT WE WILL SEE THE CONTINUITY OF THESE
4 LINES.

5 NOW, THIS PHOTO WAS TAKEN IMMEDIATELY AFTER
6 THE CRASH. THE CRASH, ACCORDING TO THE REPORT, WAS AT
7 4:30, AND THE FIRE WAS STILL BURNING HERE, AND THE SUN
8 WAS STILL UP.

9 SO IT HAD TO BE THAT SAME AFTERNOON. AND,
10 THEREFORE, I WOULD CONSIDER THAT THE INFORMATION HERE
11 IS VERY ACCURATE.

12 IT HAS NOT BEEN DISTURBED BY PEOPLE WALKING
13 AROUND, AND SO FORTH.

14 BY MR. DUBUC:

15 Q. BEFORE WE LEAVE THAT SLIDE, CAN YOU POINT OUT
16 THE TROOP COMPARTMENT?

17 A. THE TROOP COMPARTMENT IS HERE.

18 Q. ALL RIGHT.

19 FROM THIS ANGLE, OR THIS PERSPECTIVE, WHAT DO YOU
20 SEE AND OBSERVE WITH RESPECT TO THE TRACKS OF THE TROOP
21 COMPARTMENT THERE?

22 A. IT IS INTERESTING TO NOTE THAT THE SPACING
23 OF THE TRACKS FROM HERE, THE WIDTH OF THE TRACKS, IS NEARLY
24 THE SAME AS THE WIDTH OF THE TRACKS UP HERE.

25 THAT INDICATED TO ME THAT THE TROOP COMPARTMENT

1 TRAVELED IN A STRAIGHT LINE.

2 IT WAS NOT SKEWING SIDE TO SIDE, OR IT WOULD HAVE
3 WIDENED THESE TRACKS.

4 AND MEASURING THE WIDTH OF THE TRACKS THAT YOU CAN
5 SEE WITH WATER STANDING IN THEM UP HERE, AND THEN THROUGH
6 THIS AREA, INDICATES THAT THE TROOP COMPARTMENT WAS SLIDING
7 VERY NEARLY STRAIGHT.

8 YOU SEE THE TAIL SITTING HERE, AND IT IS VERY POSSIBLE
9 THAT THE TAIL SEPARATED UP HERE, WHICH COULD HAVE KEPT
10 THE TROOP COMPARTMENT GOING IN A STRAIGHT LINE, WHICH
11 WOULD HAVE CONFIRMED THE FACT THAT WE SEE THE STRAIGHT
12 PARALLEL LINES, THE RAILROAD-TRACK-TYPE LINES IN THIS
13 AREA.

14 NOW, THE NEXT SLIDE WILL SHOW US EVEN CLOSER UP HERE,
15 AS WE MOVE IN.

16 MR. DUBUC: I BELIEVE THE NEXT ONE IS D-1448.

17 THE WITNESS: AS WE MOVE CLOSER, WE HAVE NOW
18 GONE INTO THE DRIER SITE.

19 THERE IS NOT A FRESH PLANTING OF RICE IN THIS
20 AREA. THIS IS NATURAL VEGETATION FROM AN OLD RICE FIELD.
21 THESE ARE ALL RICE FIELDS.

22 YOU CAN SEE THE PARALLEL TRACKS AND THE LEVEES
23 WHICH ARE TYPICAL OF RICE AREAS.

24 EVEN THESE AREAS IN THE BACKGROUND AT ONE TIME
25 HAVE HAD RICE IN THEM. HOWEVER, CURRENTLY, THEY ARE

1 NOT PLANTED TO RICE.

2 AND, YET, BECAUSE IT IS VERY NEARLY LEVEL,
3 AS WE HAVE SEEN, FROM THE RIVER BANK ALL THE WAY OUT TO
4 HERE, WATER WOULD TEND TO COVER THIS WHOLE AREA.

5 AND THERE IS EVEN STANDING WATER IN THIS PARTICULAR
6 FIELD, ALTHOUGH IT IS NOT PLANTED TO RICE. IT APPARENTLY
7 IS A LOW AREA THAT SOME OF THIS WATER WILL DRAIN INTO.

8 NOTICE, AGAIN, THE CONTINUITY OF THE TRACKS
9 THROUGH HERE.

10 NOW, AT THIS POINT, BECAUSE THE GROUND IS FIRMER,
11 IT IS NOT AS WET AND SOGGY AND MUDDY. THE TRACKS BECOME
12 LESS DISTINCT. HOWEVER, THEY ARE CONTINUOUS.

13 I WILL DEFINE THEM FOR YOU.

14 NOW, NOTICE, THERE IS STANDING WATER WHERE
15 THE FLIGHT DECK WENT THROUGH THERE, VERY CLEARLY.

16 THERE IS ALSO STANDING WATER IN THIS AREA WHERE
17 THE TROOP COMPARTMENT WENT THROUGH, AND AT THAT POINT
18 IT SHAVED OFF THE VEGETATION, WHICH PERMITTED US TO SEE
19 THE WET SOIL IN THERE.

20 AND, YET, THERE IS ALSO VEGETATION HERE AND
21 WET SOIL. BUT IT IS NOT VISIBLE, BECAUSE THE VEGETATION
22 OBSCURES IT.

23 THAT TOLD ME, AS AN ANALYST, THAT THE TROOP
24 COMPARTMENT SLID THROUGH THERE, SHAVED OFF THE VEGETATION
25 AT THAT POINT, CONTINUED ON UP HERE.

1 AND THEN WE WILL SEE OTHER PHOTOS IN A MINUTE
2 FROM WHICH I WILL DESCRIBE UP IN HERE THE CONTINUITY OF
3 IT.

4 THERE ARE OTHER FEATURES THAT ARE VISIBLE ON
5 THE GROUND THAT I WON'T GO INTO NOW, BUT I WILL DO SO
6 LATER IF THEY COME UP.

7 THERE ARE VARIOUS OTHER SCARS THAT ALL REVEAL
8 TO AN ANALYST CERTAIN FEATURES OF INTEREST.

9 MR. DUBUC: THE NEXT SLIDE IS D-2364.

10 THE WITNESS: THIS IS A BLACK-AND-WHITE PHOTO
11 TAKEN FROM A SIDE VIEW OF THE SAME SCENE WE HAVE JUST
12 BEEN LOOKING AT, LOOKING DOWN THE FLIGHT LINE.

13 BLACK-AND-WHITE PHOTOGRAPHY TENDS TO BE SHARPER
14 THAN COLOR PHOTOGRAPHY, BECAUSE COLOR FILM HAS MORE LAYERS
15 ON IT. THEREFORE, IT IS FUZZIER ON THE IMAGE.

16 BLACK-AND-WHITE HAS A SINGLE BLACK-AND-WHITE
17 LAYER, AND IT IS VERY SHARP. THEREFORE, WE USE BLACK-
18 AND-WHITE FOR VERY FINE DETAIL INTERPRETATION.

19 I THINK YOU WILL RECOGNIZE THE TROOP COMPARTMENT
20 HERE AND THE FLIGHT DECK HERE, THE TAIL IN THIS AREA.
21 THIS IS PART OF THE FLOOR OF THE AIRCRAFT, THE CARGO FLOOR.

22 NOW, I WOULD ASK YOU TO LOOK AT THE CONTINUITY
23 OF THE LINES THAT WE WERE ABLE TO TRACE BACK THROUGH HERE,
24 WHICH DEFINE THE SLIDING TRACK OF THE TROOP COMPARTMENT.

25 AND, YET, YOU WILL NOTICE SEVERAL AREAS WHERE

1 THEY ARE NOT AS DISTINCT AS THEY ARE AT OTHER POINTS.

2 NOW, REMEMBER, WE ARE LOOKING AT A DIFFERENT
3 ANGLE HERE, SO WE DON'T SEE THE SUN GLARE OFF OF THE STANDING
4 WATER.

5 AND, YET, ON THE EARLIER PHOTO, WE SAW STANDING
6 WATER IN THOSE TRACKS DIRECTLY BEHIND THE TROOP COMPARTMENT.
7 THERE IS ALSO STANDING WATER IN THIS POINT.

8 AND, AS YOU SEE BY THE SHADOW HERE, THE SUN
9 IS ACTUALLY FROM THIS SIDE. NOW, IF WE WERE OVER HERE
10 LOOKING IN, WE WOULD SEE THE GLARE OF THE WATER.

11 SO WE CAN SEE WHERE THE VEGETATION HAS BEEN
12 KNOCKED DOWN AND HAS BEEN MOWED OFF CONTINUOUSLY THROUGH
13 THIS AREA IN HERE, AND THE SAME FOR THE FLIGHT DECK.

14 AND THEY FINALLY CONVERGE BACK AT THIS POINT
15 OF SEPARATION, AS I POINTED OUT EARLIER.

16 NOW, WE HAVE BROUGHT IN COLOR PHOTOGRAPHY RIGHT
17 UP TO THIS POINT HERE, AND THEN ON THE BLACK-AND-WHITE
18 WE SEE THE VERY DETAIL IN HERE THAT PERMITS US TO SEE
19 THE GROUND TRACK.

20 NOW, NOTICE THERE ARE PORTIONS OF THE FUSELAGE
21 HANGING OUT EACH SIDE OF THE TROOP COMPARTMENT.

22 I CALLED THOSE OUTRIGGERS. THEY WERE PART
23 OF THE FUSELAGE THAT WENT UNDER THE AIRCRAFT, AND THEY
24 ACTUALLY --

25 MR. LEWIS: YOUR HONOR, THIS MAN IS NOT AN

1 AERONAUTICAL ENGINEER.

2 THE COURT: THAT IS OVERRULED.

3 THE WITNESS: SIR?

4 THE COURT: THE OBJECTION IS OVERRULED. YOU
5 CONTINUE YOUR ANSWER.

6 THE WITNESS: AND WE WILL SEE IN THE OTHER
7 PHOTOS THAT THESE STRUCTURES ARE ATTACHED TO THE SIDE
8 OF THE AIRCRAFT.

9 AND THEY SERVE TO ACT AS A FLOATING MECHANISM,
10 A SKIDDING MECHANISM, TO SLIDE THE TROOP COMPARTMENT FORWARD.

11 BY MR. DUBUC:

12 Q. OKAY.

13 A. BEFORE I LEAVE THIS, WE HAD THIS PHOTO IN STEREO.
14 THIS IS NO. 340. WE HAD NO. 339, ALSO, IN STEREO, TAKEN
15 FROM A SLIGHTLY DIFFERENT ANGLE.

16 AND, THEREFORE, IN THREE-DIMENSIONAL VIEWING, THESE
17 FEATURES WOULD STAND UP, AND OUR INTERPRETATION WAS EVEN
18 AMPLIFIED. IT WAS EASIER TO SEE.

19 Q. ALL RIGHT.

20 MR. DUBUC: THE NEXT ONE IS D-1445.

21 BY MR. DUBUC:

22 Q. WHAT IS THAT, SIR?

23 A. THIS SHOWS THE WING AREA, AND IT IS OF INTEREST
24 TO US, BECAUSE WE SEE A CONSIDERABLE AMOUNT OF BLACK FEATURES
25 IN HERE.

1 AND, BECAUSE WE SEE SMOKE IN THIS AREA AND A BURNING
2 FIRE OVER HERE, MY INTERPRETATION IS THAT THIS WAS A FIRE
3 IN HERE. THE FIRE IS DYING DOWN IN THIS AREA, AND IT
4 IS STILL ACTIVELY BURNING OVER IN HERE.

5 AND THERE ARE VARIOUS COMPONENTS OF THE WING VISIBLE
6 IN HERE. THERE IS AN ENGINE HERE AND AN ENGINE OVER
7 HERE.

8 AND THIS AREA IS HEAVILY BURNED.

9 NOTICE THE CONTRAST BETWEEN THE UNBURNED VEGETATION,
10 BOTH BROWN VEGETATION AND GREEN. THIS IS GRASS. IT
11 IS AN ANNUAL GRASS THAT GROWS UP EACH YEAR. THEN, IN
12 THE BACKGROUND YOU CAN SEE OTHER FIELDS, BOTH BROWN AND
13 GREEN.

14 SO THIS AREA THAT IS BLACK WAS HEAVILY BURNED. IT
15 STRIPPED OFF OF THE GROUND ANY VEGETATION THAT WOULD HAVE
16 BEEN THERE.

17 NOW, WE WILL REMEMBER THIS PHOTO, BECAUSE, AS WE
18 MAKE SOME COMPARISONS LATER ON, WE WILL TRY TO DETERMINE
19 WHETHER THIS WAS FIRE OR NOT BY THE BURNED, BLACK VEGETATION
20 VERSUS THE UNBURNED, GREEN AND BROWN VEGETATION.

21 MR. DUBUC: THE NEXT EXHIBIT IS D-1428.

22 THE WITNESS: THIS IS THE FLIGHT DECK, WHERE
23 THE PILOT AND OTHER MEMBERS OF THE FLIGHT CREW WERE.
24 YOU ARE LOOKING AT THE UNDERSIDE OF IT.

25 IT SLID ALONG HERE AND SPUN AROUND AND TURNED

1 OVER.

2 AND THIS GLARE IN HERE IS STANDING WATER.
3 THIS LANDED IN A LOW AREA, AND IT IS NEARLY COMPLETELY
4 COVERED WITH WATER.

5 IT IS NOT A CURRENT RICE FIELD. THERE WAS
6 RICE PLANTED IN THE PAST, BUT AT THIS PARTICULAR TIME
7 IT IS NOT A RICE FIELD. THERE IS JUST NATURAL VEGETATION
8 IN THIS AREA.

9 THIS WAS TAKEN OUT OF THE MOVIE FILM. IT
10 IS A LITTLE BIT BLURRED, BECAUSE IT WAS ENLARGED FROM
11 A 16-MILLIMETER FRAME UP TO THIS SIZE HERE.

12 THE NEXT PHOTO.

13 MR. DUBUC: THE NEXT ONE IS D-1384.

14 THE WITNESS: NOW, WE ARE BACK TO THE TROOP
15 COMPARTMENT AGAIN.

16 NOW, I WANT TO FLIP BACK AND FORTH BETWEEN
17 THIS PHOTO AND THE NEXT PHOTO TO SHOW YOU HOW THE STEREOSCOPIC
18 VIEWING WORKS.

19 HERE WE ARE LOOKING ALMOST DIRECTLY DOWN THE
20 LINE OF THE TROOP COMPARTMENT. THIS WAS TAKEN, FROM A
21 CIRCLING HELICOPTER, OUT OF THE MOVIE FILM, AGAIN ENLARGED
22 FROM A VERY SMALL 16-MILLIMETER FILM.

23 AND THE NEXT PHOTO WILL BE TAKEN FROM A SLIGHTLY
24 DIFFERENT ANGLE.

25 WHAT WE DID WAS WE PUT THIS PHOTO UNDER ONE

1 EYE, AND THE OTHER PHOTO UNDER THE OTHER EYE, AND, THEN,
2 OPTICALLY, WE COULD SEE THREE-DIMENSIONAL VIEWING IN HERE
3 AND COULD ACTUALLY SEE THE WATER STANDING ON THE GROUND
4 IN HERE, RUNNING UP RIGHT TO THE FRONT OF THE TROOP COMPARTMENT.

5 THEN, WE COULD SEE THAT THIS IS A PIECE OF
6 THE FLOORING. WE COULD LOOK IN UNDER THAT AND SEE STANDING
7 GRASS UNDERNEATH THIS, WHICH WOULD TELL US THAT THIS WAS
8 ALL FLAT GROUND.

9 I TOLD YOU BEFORE THAT I WOULD SHOW YOU A PHOTO
10 THAT INDICATES THAT IT IS FLAT GROUND.

11 WE HAVE A PERSON HERE THAT GIVES YOU A RELATIVE
12 SIZE OF THE GRASS AND THE VEGETATION IN THIS AREA.

13 THEN, THESE ARE THE OUTRIGGERS I TALKED ABOUT,
14 THAT WERE PARTS OF THE FUSELAGE, THAT ARE ATTACHED IN
15 THERE, AND YOU SEE THOSE ON THE GROUND.

16 NOW, LET'S SHOW THE NEXT SLIDE AND THEN COME
17 BACK TO THIS ONE QUICKLY, JUST TO GIVE YOU AN IDEA OF
18 HOW THE STEREO VIEWING WOULD WORK UNDER A VIEWING DEVICE.

19 MR. DUBUC: THE NEXT ONE IS D-1444.

20 THE WITNESS: NOTICE A SLIGHTLY DIFFERENT ANGLE,
21 NOW.

22 NOW, THIS WOULD BE YOUR RIGHT EYE, AND THE
23 OTHER ONE WAS YOUR LEFT EYE, LOOKING HERE, AND YOU ARE
24 A GIANT PERSON, LOOKING DOWN ON THIS, AND YOU DO GET THE
25 THREE-DIMENSIONAL VIEWING.

1 AND IT WOULD BE POSSIBLE TO SEE THE WATER STANDING
2 ALL THE WAY AROUND THE TROOP COMPARTMENT IN THIS AREA,
3 WHICH TELLS US IT WAS FLAT GROUND.

4 NOW, WE CAN ALSO SEE THIS VEGETATION STANDING
5 UP IN HERE, AND THE VEGETATION IS QUITE TALL.

6 WE HAVE PATHS THROUGH HERE WHERE PEOPLE HAVE
7 WALKED, AND EVEN GROUND PHOTOS THAT SHOW A PERSON STANDING
8 UP FAIRLY DEEP IN THIS VEGETATION, WHICH WOULD TELL US
9 THAT THE GRASS IS TALL.

10 YET, THE GROUND LEVEL IS PROBABLY CLOSE TO
11 FLAT IN THAT AREA.

12 I WOULD NOT DETECT THAT AS BEING A RISE AT
13 ALL, ALTHOUGH I KNOW SOME OF THE REPORTS HAVE SHOWN THAT.

14 AND IN 3-D VIEWING WE CAN SEE THE VEGETATION
15 STANDING UP, BUT WE WOULD HAVE TO SUBTRACT THE HEIGHT
16 OF THE PERSON STANDING IN THERE TO GET DOWN TO THE GROUND.

17 WE ALSO SEE SPOTS OF STANDING WATER ON OTHER
18 PHOTOS OUT IN THIS AREA.

19 MR. DUBUC: OKAY.

20 THE WITNESS: THE NEXT SLIDE.

21 MR. DUBUC: THE NEXT SLIDE IS D-1386.

22 THE WITNESS: WE VIEWED IN STEREO A PATTERN
23 ALL THE WAY AROUND THE TROOP COMPARTMENT, TO DO THE SAME
24 THING I HAVE JUST DESCRIBED, AND I WON'T BELABOR IT AT
25 THIS TIME.

1 YOU NOTICE THE STANDING WATER AROUND HERE.
2
3 WE CAN LOOK AT THIS LITTLE PATH OF WATER THAT ACTUALLY
4 GOES ON BEYOND THE FRONT OF THE TROOP COMPARTMENT AND
5 IN BEHIND IT.

6 IN SOME PLACES WE COULDN'T SEE IN BECAUSE OF
7 THE VEGETATION, BUT WE WOULD USE A SLIGHTLY DIFFERENT
8 ANGLE AND BE ABLE TO SHOW THAT IT IS FLAT TERRAIN.

9 AT ONE TIME IT HAD BEEN RICE PADDIES. YOU
10 CAN SEE THE LEVEES AND THE LINEAR FEATURES.

11 NOW, THIS IS NOT IN STEREO HERE, BUT IT WAS
12 INTERPRETED IN STEREO.

13 THE NEXT SLIDE.

14 MR. DUBUC: THE NEXT SLIDE IS D-1381.

15 THE WITNESS: AND, THEN, LOOKING AT THE LEFT
16 SIDE OF THE TROOP COMPARTMENT, WE DID THE SAME SORT OF
17 THING, WHERE WE SEE STANDING WATER, THE PARTS OF THE STRUCTURE
18 HERE.

19 THEN, LOOKING AROUND THE FRONT OF IT, WE CAN
20 SEE STANDING WATER IN HERE, AND THEN THIS STANDING-UP
21 VEGETATION.

22 YOU WILL NOTICE THE BROWN AND THE GREEN IN HERE,
23 AND WE WILL TALK ABOUT THAT IN A LITTLE MORE DETAIL ON
24 OTHER SLIDES.

25 ALL OF THIS VEGETATION IN HERE IS STANDING
IN WATER AND APPEARS TO BE NATURAL VEGETATION. IT IS

1 NOT RICE AT THIS POINT IN TIME.

2 MR. DUBUC: THE NEXT ONE IS D-1446.

3 THE WITNESS: NOW, THIS IS A PAIR OF PHOTOS
4 WE TOOK OUT OF THE MOVIE FILM THAT WAS VERY SIMILAR TO
5 THAT BLACK-AND-WHITE I SHOWED YOU.

6 YOU CAN SEE THAT IT IS NOT AS SHARP. THERE
7 IS NOT AS MUCH DETAIL VISIBLE ON THE COLOR FILM, BECAUSE
8 IT IS A THREE-LAYER FILM, AS CONTRASTED WITH THE BLACK-
9 AND-WHITE.

10 BUT IT IS POSSIBLE TO SEE THE STANDING WATER
11 IN THIS FIELD.

12 AND, THEN, AS WE GET ON THIS AREA THAT WAS
13 SOMEWHAT DRIER, YOU SEE THERE IS NOT STANDING WATER.

14 YET, IN THE STEREO VIEWING, WE COULD TRACE
15 THE SLIDING TRACK OF THE TROOP COMPARTMENT AND THEN THE
16 FLIGHT DECK BACK PAST THE CARGO FLOOR HERE, BACK TO THE
17 POINT OF WHERE THEY JOINED.

18 THEN, WE CAN SEE UP BEYOND WHERE THE WING AREA --
19 THE WING LANDED AND BURNED, THE BLACK VEGETATION UP IN
20 HERE, AND STANDING WATER.

21 I HAVE INDICATED THERE IS STANDING WATER BEYOND
22 THIS. THERE IS STANDING WATER IN HERE AND UP AROUND HERE,
23 WHICH IS PROBABLY VERY CLOSE TO THE SAME ELEVATION AS
24 THIS WATER IS IN HERE, AND AROUND IN THESE OTHER AREAS.

25 NOW, NOTICE THE BROWN VEGETATION IN HERE.

1 TYPICALLY, IN AGRICULTURAL AREAS, VEGETATION
2 IS BURNED EVERY YEAR. THEY ARE THROUGH WITH THE RICE
3 CROP. THEY SET IT AFIRE.

4 MY INTERPRETATION OF THESE AREAS WAS THAT THEY
5 WERE BURNED AT LEAST A YEAR BEFORE, IF NOT MORE. BECAUSE
6 I SEE GREEN VEGETATION COMING UP THROUGHOUT THEM.

7 IT IS DEFINITELY NOT A CURRENT BURN.

8 YOU SEE THESE PATCHES THROUGHOUT THE COUNTRYSIDE
9 IN THIS AREA, AND THEY ARE TYPICAL OF THE RICE-GROWING
10 OR WHEAT-GROWING AREAS, SO FAR AS THAT GOES.

11 A FIRE WILL GET STARTED AND BURN TO SOME KNOWN
12 BARRIER. IN THIS CASE, THERE WAS AN IRRIGATION CANAL
13 THAT WOULD STOP THERE.

14 IN SOME CASES, IT WOULD SLOP OVER INTO THE
15 NEXT FIELD, AND PERHAPS THE FARMER WOULD NOT WANT IT TO
16 BURN THAT FIELD, AND HE WOULD STOP IT THERE.

17 BUT THESE ARE CONTROLLED BURNS THAT ARE SET
18 BY THE FARMERS IN THE AREA, AND THE CLOSE-UP PHOTOGRAPHY
19 SHOWS THAT THERE IS GREEN VEGETATION GROWING IN THIS AREA.
20 IT IS NOT A CURRENT FIRE AT ALL.

21 BY MR. DUBUC:

22 Q. THAT IS WHAT I WAS GOING TO ASK YOU. HOW
23 CAN YOU TELL IT IS NOT A CURRENT FIRE?

24 A. BECAUSE I SEE THE GREEN VEGETATION. AND WE
25 CAN SEE IN CLOSE-UP PHOTOGRAPHY -- I BELIEVE WE HAVE

1 SOME EXAMPLES, OR THERE IS AN ENLARGEMENT -- PATCHES
2 OF GREEN GRASS GROWING UP THROUGHOUT THE BROWN AREA
3 IN HERE THAT TELLS US THAT THE BURN WAS AT LEAST A YEAR
4 BEFORE.

5 WE DON'T SEE THE BLACK ASH THAT WE SAW UP IN THIS
6 AREA THAT IS TYPICAL OF FRESHLY BURNED VEGETATION.

7 Q. ALL RIGHT.

8 A. MUCH OF THIS WOULD BE GROUND VEGETATION FROM
9 THE PREVIOUS YEAR'S CROP THAT WASN'T BURNED AT ALL.

10 Q. ALL RIGHT.

11 SIR, DO YOU HAVE AN OPINION TO A REASONABLE SCIENTIFIC
12 CERTAINTY AS TO WHETHER OR NOT THERE WAS ANY CURRENT FIRE
13 IN CONNECTION WITH THIS ACCIDENT NEAR THE TROOP COMPARTMENT
14 OR THE COCKPIT?

15 A. YES.

16 MY INTERPRETATION IS --

17 Q. WHAT IS YOUR OPINION?

18 A. I DID NOT DETECT ANY EVIDENCE OF A CURRENT
19 FIRE -- THAT WOULD MEAN WITHIN A YEAR BECAUSE OF THE SIZE
20 OF THE GREEN VEGETATION GROWING UP IN THIS AREA -- WITHIN
21 A YEAR ANYWHERE AROUND EITHER THE TROOP COMPARTMENT OR
22 THE FLIGHT DECK.

23 I FOUND NO EVIDENCE OF FIRE, AND I HAVE THE PHOTOS
24 TO SHOW THAT.

25 Q. ALL RIGHT, SIR.

1 MR. DUBUC: THE NEXT SLIDE IS D-1397.

2 THE WITNESS: THIS IS THE CLOSE-UP PHOTO THAT
3 I WAS JUST DESCRIBING.

4 IT SHOWS UNBURNED VEGETATION. THIS WAS BROWN
5 BEFORE THE ACCIDENT, AND I CAN TELL THAT. THERE IS GREEN
6 VEGETATION, INDIVIDUAL SPRIGS OF GRASS AND VARIOUS PLANTS,
7 COMING UP IN THIS AREA, AND SIZABLE AMOUNTS OF GREEN VEGETATION
8 AND BROWN VEGETATION THAT IS UNDISTURBED. IT IS STILL
9 IN ITS DELICATE APPEARANCE.

10 IT HAS NOT BEEN TOUCHED BY FIRE. THERE ARE
11 LARGE GREEN LEAVES IN THIS AREA, AND THIS IS A CLOSE-UP
12 VIEW OF THE LEFT SIDE OF THE TROOP COMPARTMENT.

13 I SEE NO EVIDENCE OF A CURRENT FIRE IN THERE,
14 OR EVEN THAT THIS VEGETATION HAS EVER BEEN BURNED.

15 MR. DUBUC: THE NEXT SLIDE IS D-1321. COULD
16 WE HAVE THE LIGHTS, PLEASE?

17 BY MR. DUBUC:

18 Q. SIR, HAVE YOU SEEN THAT BEFORE?

19 A. YES, I HAVE.

20 Q. OF WHAT SIGNIFICANCE, IF ANY, IS THAT TO YOU,
21 DOCTOR?

22 A. THIS IS EVEN A CLOSER PHOTO OF THE FRONT END
23 OF THE TROOP COMPARTMENT. AND THIS WAS OF INTEREST TO
24 ME, AS A PHOTO-INTERPRETER, FROM TWO VIEWPOINTS.

25 ONE IS, AGAIN, LOOKING AT THE DELICATE, BROWN VEGETATION

1 AND GREEN VEGETATION, WITH NO EVIDENCE OF FIRE.

2 THIS IS A VERY CLOSE-UP PHOTO. YOU CAN SEE THE
3 INDIVIDUAL BLADES OF GRASS AND INDIVIDUAL LEAVES.

4 AND, ALSO, THERE IS THE FACT THAT THE FRONT DECK
5 OF THE TROOP COMPARTMENT HERE IS STANDING OUT OVER AN
6 AREA THAT WE CAN LOOK BACK UNDERNEATH AND SEE STANDING
7 VEGETATION.

8 THAT CONFIRMS MY TESTIMONY THAT IT IS FLAT GROUND.
9 THAT WE ARE LOOKING UNDERNEATH THAT POINT, AND THAT WE
10 HAVE NOT CONTACTED ANY HIGHER GROUND.

11 AND, YET, THERE IS A CONSIDERABLE AMOUNT OF VEGETATION
12 IN FRONT OF IT.

13 Q. OKAY.

14 MR. DUBUC: YOUR HONOR, I THINK THE NEXT EXHIBIT
15 WE WOULD LIKE TO SHOW IS EXHIBIT D-1396.

16 THE WITNESS: OKAY.

17 THIS LOOKS AROUND AT THE RIGHT SIDE OF THE
18 TROOP COMPARTMENT AND CONFIRMS, EVEN ON THE RIGHT SIDE,
19 INDIVIDUAL LEAVES AND UNBURNED VEGETATION, STANDING WATER.

20 WE CAN TELL IT IS THE RIGHT SIDE, BECAUSE WE
21 ARE LOOKING BACK DOWN TO THE TAIL ASSEMBLY OVER ON THIS
22 SIDE.

23 AND THIS WAS TAKEN THE SAME DAY AS THE ACCIDENT.
24 I USED A NUMBER OF FACTORS TO DETERMINE THAT, EVEN THOUGH
25 I CANNOT SEE THE BURNING WING.

1 BY MR. DUBUC:

2 Q. WHAT ARE THOSE, SIR?

3 A. AN INTERPRETER CAN LOOK AT THE CLOUD PATTERNS
4 AND SEE THAT THEY ARE THE SAME ON ANY PARTICULAR DAY.
5 AND, THEREFORE, THAT THE CLOUDS WERE THE SAME ON THIS
6 DAY WHEN THE BURNING WAS OCCURRING, AND, YET, ON OTHER
7 DAYS THEY WERE QUITE DIFFERENT.

8 MR. DUBUC: THE NEXT EXHIBIT IS D-1398.

9 THE WITNESS: THIS SHOWS THAT OVER IN THE FLIGHT-
10 DECK AREA, AS I DESCRIBED, WE DON'T HAVE ANY EVIDENCE
11 OF BURNING.

12 THERE IS GREEN GRASS RIGHT UP TO THE BASE OF
13 THE FLIGHT DECK.

14 THERE IS STANDING GREEN VEGETATION IN THIS
15 AREA, WITH NO EVIDENCE OF FIRE, AND BROWN VEGETATION THAT
16 WOULD BURN VERY READILY, HAD IT BEEN SUBJECTED TO ANY
17 KIND OF HEAT.

18 AND THIS IS DRY. IT IS STANDING UP ABOVE
19 THE STANDING WATER, AND WOULD NOT HAVE BEEN SUBJECTED
20 TO BEING TERRIBLY WET, BECAUSE THE WATER IS DOWN UNDERNEATH
21 IT.

22 NEXT SLIDE.

23 BY MR. DUBUC:

24 Q. I THINK THAT IS THE END OF THE SLIDES, SIR.

25 A. ALL RIGHT.

1 MR. DUBUC: IF YOU WILL BEAR WITH ME A MOMENT,
2 YOUR HONOR? EXCUSE ME.

3 THE COURT: ALL RIGHT.

4 BY MR. DUBUC:

5 Q. DOCTOR, YOU INDICATED THAT YOU HAD --

6 MR. DUBUC: THAT IS NOT THE ONE. EXCUSE ME.

7 THE COURT: LADIES AND GENTLEMEN, IF YOU WOULD
8 LIKE TO STAND UP AND STRETCH WHILE MR. DUBUC IS FINDING
9 HIS PAPERS, YOU ARE WELCOME TO DO THAT AND GET A LITTLE
10 AIR.

11 MR. DUBUC: THIS IS THE SAME DIAGRAM THAT I
12 BELIEVE THE PLAINTIFFS MARKED AS PLAINTIFFS' EXHIBIT 248.
13 I WOULD LIKE TO HAVE THIS ONE MARKED AS 248-A, YOUR HONOR.

14 THE COURT: AS DEFENDANTS' EXHIBIT 248-A?

15 MR. DUBUC: DEFENDANT'S EXHIBIT 248-A, YES,
16 YOUR HONOR.

17 THE COURT: ALL RIGHT.

18 THE CLERK: DEFENDANTS' EXHIBIT 248-A MARKED
19 FOR IDENTIFICATION.

20 (DEFENDANTS' EXHIBIT 248-A

21 MARKED FOR IDENTIFICATION.)

22 BY MR. DUBUC:

23 Q. DOCTOR, HAVE YOU SEEN EXHIBIT 248-A FOR IDENTIFICA-
24 TION?

25 A. YES, SIR, I HAVE.

1 Q. AND WHAT IS THAT, SIR?

2 A. THIS WAS A WRECKAGE DIAGRAM PREPARED BY DR.
3 MORAIN FROM HIS MEASUREMENTS AND HIS INTERPRETATION OF
4 THE PHOTOGRAPHY.

5 Q. ALL RIGHT.

6 AND, WITH RESPECT TO SOME OF THOSE, I ASKED YOU EARLIER,
7 AND I THINK YOU TOLD ME YOU HAD SOME DIFFERENT MEASUREMENTS.

8 IS THAT CORRECT?

9 A. YES, SIR, I DID.

10 Q. WOULD YOU MARK ON THERE -- DO YOU HAVE A PENCIL
11 OR PEN?

12 A. YES, THANK YOU.

13 Q. WOULD YOU MARK ON THERE THE ONES YOU MENTIONED
14 THAT YOU WOULD DISAGREE WITH? YOU JUST TOLD ME BEFORE,
15 AND I DON'T REMEMBER EXACTLY WHICH ONES THEY WERE, BUT
16 I WILL LEAVE IT TO YOU.

17 A. YES.

18 I MEASURED THE DISTANCE FROM THE RIVER TO THE TROOP
19 COMPARTMENT TO BE 2086 FEET.

20 DR. MORAIN CALLS IT THE AFT TROOP COMPARTMENT. HIS
21 DIMENSION WAS 1715 FEET.

22 MY DIMENSION, AGAIN, WAS 2086 FEET FOR THE AFT TROOP
23 COMPARTMENT.

24 Q. WILL YOU PUT YOUR INITIALS ON THERE --

25 A. ALL RIGHT.

1 Q. (CONTINUING) -- WHATEVER IT IS YOU DISAGREE

2 WITH?

3 A. YES.

4 THEN, ALSO, I MEASURED THE DISTANCE TO THE FLIGHT
5 DECK. HE CALLS IT THE CREW COMPARTMENT. HIS DIMENSION
6 FROM THE RIVER BANK TO THE CREW COMPARTMENT WAS 1840 FEET.

7 AND MY DIMENSION FOR THAT SAME LENGTH WAS 2234 FEET.
8 AND I WILL SO INDICATE WITH OUR INITIALS ON THIS DIAGRAM.

9 AND, THEN, THE THIRD AREA WAS THE WING SECTION, WHICH
10 DR. MORAIN MEASURED TO BE 2065 FEET FROM THE RIVER'S
11 EDGE.

12 MY DIMENSION WAS MEASURED TO BE 2789 FEET FROM THE
13 RIVER'S EDGE.

14 I HAVE SO MARKED THOSE AND INITIALED EACH OF THE
15 POINTS.

16 Q. NOW, ARE THERE SOME OTHER DIMENSIONS ON THERE
17 WITH WHICH YOU DISAGREE?

18 A. THERE ARE OTHER DIMENSIONS, YES, THAT I HAVE
19 SOME DISAGREEMENT WITH.

20 HIS MEASUREMENT TO THE T-TAIL AND HIS MEASUREMENT
21 TO THE FIRST POINT OF BREAK-UP WAS SLIGHTLY DIFFERENT,
22 AS WELL.

23 Q. ALL RIGHT.

24 NOW, YOU USED, BASICALLY, THE SAME METHOD; DID YOU
25 NOT?

1 A. YES, SIR, I DID.

2 Q. DO YOU HAVE AN OPINION TO A REASONABLE SCIENTIFIC
3 CERTAINTY AS TO THE REASON FOR THE DIFFERENCE?

4 A. I TRIED TO FIND THAT OUT, BECAUSE, SINCE WE
5 GOT DIFFERENT DIMENSIONS, ONE OF US IS NOT RIGHT. AND,
6 OF COURSE, BEING INTERESTED IN HAVING THE CORRECT DIMENSIONS,
7 I USED THE SAME TECHNIQUES THAT HE DID.

8 FOR ONE, WE NOTED HE USED 65 FEET FOR THE LENGTH
9 OF THE TROOP COMPARTMENT, AND HE SHOWED THE MATHEMATICAL
10 CALCULATIONS IN HIS REPORT OF HOW HE WENT THROUGH THAT
11 EXERCISE.

12 AND HE CAME UP WITH A DIFFERENT DIMENSION, USING
13 THE TROOP COMPARTMENT AS HIS STANDARD OF MEASUREMENT.

14 AND I UNDERSTAND THAT HE IGNORED THE EXTENSION OF
15 THE TROOP COMPARTMENT. THERE WAS AN ADDITIONAL AMOUNT
16 OF FUSELAGE ATTACHED TO THAT, AND THAT WAS REPORTED IN
17 JOHN EDWARDS' DOCUMENT.

18 AND I USED THE LATEST INFORMATION AVAILABLE BY MR.
19 EDWARDS IN MAKING MY CALCULATIONS OF 75 FEET, INSTEAD
20 OF 65 FEET, FOR THE TROOP COMPARTMENT.

21 I BELIEVE HE USED A MAP FOR SOME OF THESE DIMENSIONS,
22 IN FURTHER ANSWER TO YOUR QUESTION.

23 DO YOU WANT ME TO DISCUSS THAT AT THIS TIME?

24 Q. WELL, LET ME JUST SEE WHAT WE ARE TALKING ABOUT
25 HERE.

1 A. ALL RIGHT.

2 Q. NOW, I HAVE HERE A COPY OF WHAT HAS BEEN MARKED
3 AS DEFENDANTS' D-1408, WHICH I BELIEVE WAS A MAP DR. MORAIN
4 REFERRED TO.

5 IS THAT WHAT YOU ARE REFERRING TO?

6 A. THIS IS CORRECT, YES.

7 Q. ALL RIGHT.

8 A THIS MAP IS AN ARMY MAP AT A SCALE OF 1 TO
9 50,000. THAT IS, ONE FOOT ON THE GROUND IS -- EXCUSE
10 ME.

11 ONE FOOT ON THE MAP IS DEPICTED AS 50,000 FEET ON
12 THE GROUND.

13 AND, IN TAKING MEASUREMENTS OF THE WRECKAGE SITE
14 ON HERE, THE WRECKAGE AREA WAS, PERHAPS, FIVE-EIGHTHS-
15 OF-AN-INCH LONG, FROM THE DIMENSIONS ON THIS MAP.

16 AND, OF COURSE, IN THE PHOTOS I WAS USING, THE WRECKAGE
17 WAS MANY, MANY, MANY FEET LONG, FOR THE MEASUREMENTS THAT
18 I MADE.

19 THEREFORE, INHERENTLY, THERE WOULD BE HIGHER ACCURACY
20 IN MY MEASUREMENTS AND LOWER ACCURACY IN HIS.

21 THE 1-TO-50,000 MAP WAS TOO SMALL A SCALE FOR ME
22 TO UTILIZE.

23 AND, ALSO, THERE ARE SOME FEATURES NOT VISIBLE ON
24 THE MAP THAT WERE VISIBLE ON THE PHOTOGRAPHS, FEATURES
25 THAT ARE VISIBLE ON THE PHOTOGRAPHS.

2070
1 SO, THEN, I DID NOT USE THE MAP FOR MY SCALING DIMENSIONS.

2 Q. WHAT FEATURES ARE YOU REFERRING TO?

3 A. SUCH FEATURES AS THE FIELD BOUNDARIES THAT
4 I TRIED TO POINT OUT TO YOU ON THE PHOTOGRAPHS ARE NOT
5 VISIBLE ON HERE.

6 CERTAIN PATHWAYS ARE -- THERE IS A MAJOR HIGHWAY
7 THAT RUNS ACROSS THIS AREA THAT IS NOT ON THE MAP. THE
8 MAP WAS MADE IN 1970. I BELIEVE THE CRASH WAS IN 1975.

9 AND THE PHOTOS THAT WE HAVE SHOW A NUMBER OF FEATURES
10 ON THE GROUND THAT ARE NOT VISIBLE ON THE MAP. AND,
11 THEREFORE, IT WAS NOT POSSIBLE FOR ME TO USE A MAP FOR
12 MEASURING THOSE FEATURES.

13 Q. ALL RIGHT, SIR.

14 HAVE YOU HAD OCCASION, SIR, TO REVIEW EXHIBIT D-9?

15 A. YES, SIR, I HAVE.

16 Q. AND, SIR, DO YOU HAVE AN OPINION TO A REASONABLE
17 SCIENTIFIC CERTAINTY, BASED ON YOUR OWN MEASUREMENTS, AS
18 TO THE RELATIVE ACCURACY OF THE MEASUREMENTS ON D-9?

19 A. YES, SIR, I DO.

20 SO FAR AS POSSIBLE, I WOULD MEASURE FROM THE SCALE
21 ON THE MAP THE DISTANCES WHERE THE VARIOUS FEATURES WERE
22 DEPICTED ON THE GROUND.

23 AND, IN MOST CASES, MY DIMENSIONS WERE VERY NEARLY
24 THE SAME.

25 FOR EXAMPLE, I MEASURED THE DISTANCE FROM THE RIVER

1 TO THE TROOP COMPARTMENT, TO THE FRONT END OF THE TROOP
2 COMPARTMENT, AS THEY HAVE.

3 THEY HAD SAID 2100, OR SHOWED 2100 FEET, BY SCALING
4 ON THE MAP. AND MY DIMENSION WAS 2161. SO I WAS 61
5 FEET OFF IN 2000, USING THIS.

6 NOW, REALIZING THAT THIS IS AN ARTIST'S CONCEPTION,
7 SOME OF THE FEATURES ARE NOT PERFECTLY DEPICTED. BUT
8 THE OVERALL LAYOUT IS QUITE ACCURATE.

9 AND, TO THE FLIGHT DECK, I WAS OFF BY ABOUT 40 FEET,
10 OVER 2400 FEET.

11 SO THE DIFFERENCES WERE EITHER INSIGIFICANT, OR PERHAPS
12 WERE DUE TO THE ARTIST'S CONCEPTION, ON THE CHART.

13 Q. ALL RIGHT.

14 MR. DUBUC: I DON'T BELIEVE I HAVE ANY FURTHER
15 QUESTIONS, YOUR HONOR.

16 THE COURT: VERY WELL.

17 MR. LEWIS, YOU MAY INQUIRE. I THINK YOU SHOULD
18 USE THE SAME STATION, SO THAT YOU HAVE THE BENEFIT OF
19 THE MICROPHONE.

20 MR. LEWIS: THANK YOU, YOUR HONOR.

21 CROSS-EXAMINATION

22 BY MR. LEWIS:

23 Q. WHEN DID YOU MAKE YOUR APPLICATION FOR A JOB
24 WITH LOCKHEED, SIR?

25 A. I TURNED IN AN APPLICATION TO LOCKHEED IN

1 PROBABLY LATE SEPTEMBER OF THIS YEAR -- OF 1981, LAST
2 YEAR.

3 Q. WHO ALL HAD YOU SENT AN APPLICATION TO?

4 A. I SENT AN APPLICATION TO FORD AEROSPACE. I
5 WON'T TRY TO NAME ALL OF THEM. I MIGHT MISS A FEW.

6 I SENT AN APPLICATION TO THE UNIVERSITY OF IDAHO
7 AT MOSCOW; TO ELECTROMAGNETIC SYSTEMS, INCORPORATED; TO --

8 THE COURT: DOCTOR, THAT IS MOSCOW, IDAHO.

9 THE WITNESS: MOSCOW, IDAHO, YES; THE UNIVERSITY
10 OF IDAHO AT MOSCOW, IDAHO.

11 (CONTINUING PREVIOUS ANSWER) -- AND TO OTHER
12 COMPANIES IN THE BAY AREA WHERE I LIVED, THAT EMPLOYED
13 PHOTO-INTERPRETERS. I DON'T REMEMBER THEIR NAMES AT
14 THE MOMENT.

15 BY MR. LEWIS:

16 Q. NOW, WAS THE JOB THAT YOU HAD PHASING OUT,
17 SIR?

18 A. YES, SIR.

19 I WAS A CONTRACTOR FOR NASA, WORKING IN THE WESTERN
20 REGIONAL APPLICATIONS PROGRAM. AND WHEN THE BUDGET CUTS
21 CAME OUT, OUR PROGRAM WAS CUT TO ZERO, AND --

22 Q. AND HOW MUCH -- EXCUSE ME, SIR.

23 A. (CONTINUING) -- AT THE END OF SEPTEMBER, MY
24 WORK TERMINATED THERE, AT THE END OF THE FISCAL YEAR.

25 Q. HOW MUCH WERE YOU MAKING AS A CONTRACTOR FOR

1 NASA?

2 A. FOR NASA, I WAS ON A SALARY OF \$52,000 A YEAR.

3 Q. AND WAS THERE A PERIOD WHEN YOU WERE WITHOUT
4 EMPLOYMENT?

5 A. YES, SIR.

6 Q. ABOUT HOW LONG WAS THAT? .

7 A. THAT WAS UNTIL NOVEMBER 30TH, WHEN I ACCEPTED
8 THE JOB WITH LOCKHEED, TWO MONTHS.

9 Q. AND HOW MUCH DID LOCKHEED AGREE TO PAY YOU,
10 SIR?

11 A. FORTY-FIVE-THOUSAND DOLLARS A YEAR.

12 Q. NOW, IN BETWEEN THE TIME THAT YOUR NASA JOB
13 TERMINATED, SIR, AND THE TIME THAT YOU ACCEPTED THE JOB
14 WITH LOCKHEED, DID YOU HAVE OCCASION TO TALK TO ANY LAWYER
15 FOR THE LOCKHEED AIRCRAFT CORPORATION AS TO WHETHER YOU
16 MIGHT BE ABLE TO HELP THEM IN THEIR LAWSUIT?

17 A. NO, I DID NOT TALK WITH A LAWYER --

18 Q. DID YOU TALK --

19 A. (CONTINUING) -- REGARDING THAT QUESTION.

20 Q. WITH WHOM DID YOU TALK?

21 A. I RECEIVED A TELEPHONE CALL FROM A FRIEND THAT
22 I USED TO WORK WITH IN ANOTHER COMPANY, EARTH SATELLITE
23 CORPORATION.

24 Q. WHAT WAS HIS NAME?

25 A. HIS NAME WAS BOB MACOMBER. HE HAS A BUSINESS,

1 A PERSONAL AERIAL-PHOTO BUSINESS HERE IN WASHINGTON, AND
2 WAS ACQUAINTED WITH ME.

3 HE CALLED ME ON NOVEMBER 9TH TO SEE IF I WOULD BE
4 INTERESTED IN CONSULTING ON A PHOTO-INTERPRETATION PROJECT.

5 Q. AND HE TOLD YOU THAT YOU WOULD BE PAID BY
6 THE LAW FIRM OF HAIGHT, GARDNER?

7 A. YES, SIR.

8 Q. IS THAT THE LAW FIRM THAT MR. DUBUC IS WITH,
9 SIR?

10 A. YES, SIR.

11 Q. DID HE DISCUSS RATES WITH YOU?

12 A. NO, SIR.

13 Q. AND WHEN DID YOU RECEIVE THE CALL FROM MR.
14 MACOMBER?

15 A. ON NOVEMBER 9TH OF 1981.

16 Q. AND WHEN DID YOU GET YOUR JOB WITH LOCKHEED,
17 SIR?

18 A. NOVEMBER 30TH.

19 Q. NOW, WHEN DID YOU FIRST MEET WITH ANYBODY ON
20 THE LEGAL STAFF OR THE ENGINEERING STAFF OF LOCKHEED;
21 THAT IS TO SAY, CONNECTED WITH THIS CASE?

22 A. DECEMBER 16, 1981.

23 Q. THAT IS AFTER YOU WENT TO WORK FOR LOCKHEED?

24 A. YES, SIR.

25 Q. DID YOU DISCUSS WHAT THEY WANTED WITH MR. MACOMBER,

1 SIR?

2 A. YES. HE TOLD ME IN GENERAL TERMS WHAT THEY
3 WANTED.

4 Q. WHAT DID HE TELL YOU?

5 A. HE TOLD ME THEY WANTED AN EXPERT IN PHOTO-
6 INTERPRETATION WITH EXPERIENCE IN VEGETATION TO RECONSTRUCT
7 THE EVENTS OF A C-5A CRASH IN SAIGON IN 1975, USING AERIAL
8 AND GROUND PHOTOGRAPHS.

9 Q. AND YOU TOLD MR. MACOMBER THAT YOU WERE AVAILABLE?

10 A. I TOLD HIM THAT I WAS AVAILABLE IN TIME. THAT
11 I WAS NOT WORKING AT THE TIME, BUT THAT I DIDN'T KNOW
12 WHETHER I WANTED TO DO THE JOB, OR WHETHER I WAS QUALIFIED
13 TO DO THE JOB.

14 WE DID NOT KNOW ENOUGH ABOUT IT TO MAKE THAT DECISION.

15 Q. AND MR. MACOMBER TOLD YOU THAT, ALTHOUGH LOCKHEED
16 WAS A DEFENDANT IN THIS CASE, YOU WOULDN'T BE PAID BY
17 LOCKHEED, BUT THAT YOU WOULD BE PAID BY THE ATTORNEY FIRM
18 AS A CONSULTANT.

19 IS THAT CORRECT?

20 A. YES, SIR, THAT IS CORRECT.

21 Q. NOW, MR. MACOMBER SET UP AN APPOINTMENT FOR
22 YOU TO REVIEW THE DATA AND MEET WITH THE LAWYERS AND DO
23 THAT SORT OF THING.

24 IS THAT RIGHT?

25 A. THAT'S CORRECT.

1 Q. NOW, WHAT IS MR. MACOMBER'S CONNECTION WITH
2 MR. ATKINS, THE OTHER PHOTO-INTERPRETER THAT WAS HERE;
3 DO YOU KNOW?

4 A. A PROFESSIONAL ACQUAINTANCE IS ALL I WOULD
5 KNOW, SIR.

6 Q. DO YOU KNOW WHETHER MR. MACOMBER KNOWS MR.
7 ATKINS?

8 A. PROFESSIONALLY, YES. NOW, I DON'T KNOW WHETHER
9 HE KNEW HIM BEFORE HE WAS CONTACTED FOR THIS CASE OR NOT.

10 Q. BUT MR. MACOMBER BROUGHT MR. ATKINS INTO THE
11 CASE, TOO; DIDN'T HE?

12 A. I DON'T KNOW THE ANSWER TO THAT.

13 Q. ALL RIGHT, SIR.

14 NOW, WHAT BRANCH OF THE LOCKHEED AIRCRAFT CORPORATION
15 DID YOU AGREE TO GO TO WORK FOR?

16 A. LOCKHEED MISSILES AND SPACE COMPANY.

17 Q. AND WHERE ARE THEY LOCATED?

18 A. SUNNYVALE, CALIFORNIA.

19 Q. NOW, WHEN DID YOU ACTUALLY REPORT TO WORK FOR
20 THE FIRST TIME?

21 A. NOVEMBER 30TH.

22 Q. AND TO WHOM DID YOU REPORT TO WORK?

23 A. TO MARY GRACE FOWLER, MY IMMEDIATE SUPERVISOR.

24 Q. AND THAT IS IN CALIFORNIA?

25 A. IN CALIFORNIA.

1 Q. AND DID YOU START INTERPRETING PHOTOGRAPHS
2 FOR THE LOCKHEED SPACE PROGRAM AT THAT TIME?

3 A. NO, I DID NOT.

4 Q. WHAT DID YOU DO?

5 A. IT TOOK ME SEVERAL DAYS TO GET BRIEFED.

6 Q. YES.

7 A. I HAD TO FILL OUT A QUESTIONNAIRE FOR A SECURITY
8 CLEARANCE, WHICH I HAD TO GET REINSTATED, FOR WORKING
9 ON CLASSIFIED WORK, AND TO BE BRIEFED ABOUT THE COMPANY'S
10 POLICIES.

11 Q. ALL RIGHT.

12 A. THAT TOOK ME SEVERAL WEEKS TO DO THAT. AND,
13 UNTIL I RECEIVED THE CLEARANCE, I WAS NOT ALLOWED TO GO
14 TO WORK IN THE FACILITY WHERE I WOULD BE WORKING, BECAUSE
15 IT WAS A CLOSED AREA.

16 Q. DID YOU, THEN, START WORKING ON THE LAWSUIT?

17 A. I DID NOT BEGIN WORK ON THE LAWSUIT UNTIL I
18 FLEW HERE ON DECEMBER 15TH; AND ON DECEMBER 16TH, I HAD
19 MY FIRST MEETING AND BRIEFING BY THE HAIGHT, GARDNER FIRM.

20 Q. WHO WAS THERE?

21 A. THAT WAS A MEETING IN THE LAW OFFICES, AND
22 THERE WERE JOHN CONNORS, CARROLL DUBUC, GARY ALLEN --

23 Q. MR. ALLEN IS WITH THE UNITED STATES?

24 A. HE IS WITH THE JUSTICE DEPARTMENT, YES, SIR.

25 Q. ALL RIGHT. WHO ELSE?

1 A. (CONTINUING PREVIOUS ANSWER) -- BOB MACOMBER;

2 CAPTAIN ASHBY ELMORE, AIR FORCE; MAJOR -- AN AIR FORCE
3 MAJOR, WHOSE NAME SLIPS MY MIND; AND TWO GENTLEMEN FROM
4 THE CIA.

5 THAT WAS THE EXTENT OF THE PEOPLE AT THAT MEETING.

6 Q. AND YOU WENT OVER THE CASE AT THAT TIME?

7 A. YES, SIR, WE DID.

8 Q. NOW, THE PEOPLE FROM THE CIA, WHAT WERE THEIR
9 NAMES?

10 A. I DON'T KNOW THEIR NAMES.

11 Q. DID THEY GIVE YOU THEIR NAMES?

12 A. THEY MENTIONED THEIR NAMES, BUT I DIDN'T WRITE
13 THEM DOWN.

14 Q. AND HOW LONG DID THAT MEETING LAST?

15 A. IT WAS AN ALL-DAY MEETING. WELL, THE MEETING
16 WITH ALL OF THOSE PEOPLE LASTED FOR ABOUT TWO HOURS, FROM
17 TEN IN THE MORNING UNTIL NOON, ROUGHLY.

18 AND, THEN, PEOPLE WENT THEIR VARIOUS WAYS.

19 A FEW OF US STAYED AROUND AND WORKED TOGETHER.

20 Q. AND WHEN WAS THE FIRST TIME MR. EDWARDS CAME
21 INTO YOUR UNDERSTANDING OF THE CASE?

22 A. THE FIRST TIME I MET MR. EDWARDS?

23 Q. YES, SIR.

24 A. I MET MR. EDWARDS IN EARLY JANUARY, WHEN I WAS
25 HERE FOR THE SECOND TIME. THAT WOULD HAVE BEEN JANUARY

1 5TH OR 6TH OF THIS YEAR.

2 Q. OF THIS YEAR, SIR?

3 A. YES.

4 Q. NOW, DID YOU GET THE ASSISTANT GENERAL COUNSEL'S OKAY
5 TO WORK ON THIS CASE?

6 A. YES, SIR, I DID. ROBERT BARTON FROM THE GEORGIA
7 FACILITY.

8 Q. LOCKHEED-GEORGIA?

9 A. YES.

10 Q. THAT IS THE EASTERN BRANCH?

11 A. YES.

12 Q. ALTHOUGH YOU WERE NOT EMPLOYED BY THEM?

13 A. I DID NOT ASK HIS PERMISSION UNTIL AFTER I
14 BECAME EMPLOYED. THAT WAS ONE OF THE CONSIDERATIONS
15 THAT I HAD TO FACE, WHEN I CAME TO WORK FOR LOCKHEED.

16 I HAD NOT AGREED TO WORK ON THIS CASE, WHEN I TOOK
17 EMPLOYMENT AT LOCKHEED ON NOVEMBER 30TH.

18 IF, IN FACT, THEY DID NOT WANT ME TO WORK ON IT,
19 I WOULD NOT HAVE.

20 THEY ASKED ME AT GEORGIA IF I COULD BE RELEASED FROM
21 THE WORK THAT I WAS DOING. I ASKED MY IMMEDIATE SUPERVISOR,
22 MARY GRACE FOWLER.

23 SHE SAID THAT I COULD BE RELEASED FROM IT, BECAUSE,
24 UNTIL MY CLEARANCE CAME THROUGH, I COULD NOT WORK ON IT.

25 AND HE ALLOWED ME TO WORK ON THE PROJECT.

1 Q. WE ARE SPEAKING OF MR. BARTON --

2 A. MR. BARTON.

3 Q. (CONTINUING) -- THE LAWYER?

4 A. YES.

5 Q. HE IS THE LOCKHEED LAWYER, THE HOUSE COUNSEL,
6 WHO IS ACTUALLY IN CHARGE OF THE C-5 LITIGATION IN THE
7 LOCKHEED COMPANY; ISN'T HE?

8 A. I DON'T KNOW THAT. I KNOW HIM AS A LOCKHEED
9 ATTORNEY, SIR.

10 Q. HE DIDN'T TELL YOU THAT?

11 A. NO.

12 Q. AND NOBODY ELSE DID?

13 A. NO.

14 Q. ALL RIGHT.

15 AND WHEN DID YOU FIRST TALK TO MR. BARTON?

16 A. ABOUT NOVEMBER 11TH, I WOULD EXPECT. I THINK
17 THAT WAS MY RECOLLECTION, A COUPLE OF DAYS -- OH, EXCUSE
18 ME. DECEMBER 11TH, SIR.

19 THAT WAS A FEW DAYS BEFORE I CAME HERE, AND A FEW
20 DAYS AFTER I WENT TO WORK FOR LOCKHEED.

21 Q. IT WAS A FEW DAYS AFTER YOU WENT TO WORK FOR
22 LOCKHEED, SIR?

23 A. YES.

24 Q. AND WAS THAT ON THE TELEPHONE, OR WAS THAT
25 IN PERSON?

1 A. THAT WAS BY TELEPHONE.

2 Q. AND FROM CALIFORNIA?

3 A. FROM CALIFORNIA TO GEORGIA.

4 Q. AND WHAT DID HE SAY TO YOU, AND WHAT DID YOU
5 SAY TO HIM?

6 A. I TOLD HIM THAT I HAD BEEN ASKED TO SERVE AS
7 AN EXPERT WITNESS IN A TRIAL IN WASHINGTON, D. C., IN
8 A CASE THAT INVOLVED LOCKHEED.

9 AND THAT I WAS A NEW EMPLOYEE AT LOCKHEED, AND I
10 ASKED IF HE WOULD HAVE ANY PROBLEM WITH ME EITHER TAKING
11 TIME OFF FROM LOCKHEED AS A PRIVATE CONSULTANT, TIME WITHOUT
12 PAY, OR TO GO AS A PAID EMPLOYEE.

13 THAT QUESTION HAD NOT BEEN DECIDED YET.

14 HE SAID HE DID NOT HAVE ANY PROBLEM WITH THAT.

15 Q. WELL, HE DID NOT HAVE -- HE IS NOT THE ASSISTANT
16 GENERAL COUNSEL FOR THE LOCKHEED DIVISION ON THE WEST
17 COAST; IS HE?

18 A. NO.

19 I DON'T KNOW ANYONE WITH THAT TITLE, SIR. I KNOW
20 ONE COUNSEL IN LOCKHEED-CALIFORNIA NAMED DONALD CHRISTENSEN.
21 HE WAS THE MAN I TALKED TO, A COUNTERPART IN CALIFORNIA.

22 AND BETWEEN MR. BARTON AND MR. CHRISTENSEN, THEY
23 WERE THE ONLY TWO LEGAL PEOPLE AT LOCKHEED I TALKED TO.
24 AND I ASKED THEM THE SAME QUESTION, WHICH I JUST STATED,
25 SIR.

1 Q. WHAT I DON'T UNDERSTAND, SIR, IS WHY IT WAS
2 NECESSARY TO GO BEYOND THE DIVISION THAT YOU WERE WORKING
3 IN TO GET A LEAVE OF ABSENCE, IF THAT IS WHAT YOU WERE
4 DOING.

5 A. MY SUPERVISOR SUGGESTED I CLEAR IT WITH THE
6 LEGAL PEOPLE, WHICH SEEMED A LOGICAL THING FOR ME TO DO.

7 Q. BUT DID SHE SUGGEST THAT YOU GO OUTSIDE THE
8 MISSILE DIVISION IN CALIFORNIA?

9 A. I DON'T BELIEVE SHE DID. SHE ASKED ME TO
10 CHECK WITH DONALD CHRISTENSEN. SHE GAVE ME THE MAN'S
11 NAME TO TALK TO.

12 Q. AND HE HAD TO CALL BARTON; IS THAT RIGHT?

13 A. NO.

14 I HAD GOTTEN A CALL FROM MR. BARTON. HE MADE THE
15 FIRST CALL, BECAUSE HE HAD HEARD THROUGH THE CHAIN OF
16 EVENTS.

17 I INFORMED MR. MACOMBER THAT I WAS -- THIS WAS BEFORE
18 I CAME TO WORK FOR LOCKHEED -- THAT I HAD APPLIED FOR
19 A JOB. I HAD NOT ACCEPTED ONE, AND THEY HAD NOT OFFERED
20 ME A JOB.

21 AND THAT IT WAS AN INTERESTING FACTOR, IF I SHOULD
22 GO TO WORK FOR THEM AND BECOME A WITNESS FOR THEM.

23 THAT I WANTED HIM TO BRING THAT UP TO THE HAIGHT,
24 GARDNER FIRM TO SEE IF I WOULD BE DISQUALIFIED AS A BIASED
25 WITNESS.

1 I WAS THE ONE WHO INITIATED THE QUESTION, AND, THROUGH
2 THE CHAIN OF 'PHONE CALLS, SIR, IS THE WAY IT CAME TO
3 ME.

4 Q. BUT IT IS A FACT THAT MR. BARTON SUGGESTED
5 THAT THEY WANTED YOU, LOCKHEED-GEORGIA WANTED YOU, AS
6 A WITNESS.

7 ISN'T THAT SO?

8 A. I DON'T KNOW WHETHER THAT IS THE WAY I WOULD
9 PUT IT. I WAS GIVEN PERMISSION, AS A LOCKHEED EMPLOYEE,
10 TO DO THE JOB.

11 THAT WOULD BE MY UNDERSTANDING, RATHER THAN YOUR
12 WORDING, SIR.

13 Q. ALL RIGHT.

14 BUT MR. BARTON JUST CALLED YOU OUT OF THE BLUE AND
15 SAID YOU HAD PERMISSION?

16 A. HE CALLED ME AND ASKED ME IF I KNEW OF THE
17 CASE. I SAID YES.

18 AND THEN WE DISCUSSED AT THAT TIME THE QUESTION I
19 HAD JUST MENTIONED: WHETHER I COULD GO.

20 AND I HAD NOT DECIDED AT THAT TIME WHETHER I WAS
21 EVEN QUALIFIED TO DO THE WORK, BECAUSE I HAD NOT SEEN
22 ANY PHOTOGRAPHS OR READ ANY REPORTS.

23 I SAID I WOULD LIKE TO LOOK AT IT; AND, IF I FEEL
24 I CAN HELP, I WILL ACCEPT THE ASSIGNMENT. IF NOT, I
25 WILL TURN IT DOWN.

1 Q. SO THE NEXT CONTACT THAT YOU HAD WITH WASHINGTON
2 WAS IN JANUARY, SIR?

3 A. WITH WHAT WASHINGTON, SIR?

4 Q. THIS WASHINGTON.

5 A. I CAME HERE ON DECEMBER 15TH AND --

6 Q. RIGHT.

7 A. I FLEW HERE AND THEN WENT TO WORK ON THE 16TH
8 OF DECEMBER, 1981.

9 Q. OH, YOU STAYED HERE CONTINUOUSLY?

10 A. NO. AND THEN I RETURNED ON THE 19TH.

11 Q. I AM SORRY. I AM NOT CLEAR. YOU CAME HERE
12 WHEN?

13 A. ON DECEMBER 15TH, I FLEW HERE.

14 Q. AND HOW LONG DID YOU STAY ON THAT VISIT?

15 A. DECEMBER 16TH, 17TH, AND 18TH. I CONSIDERED
16 THE CASE AT THE HAIGHT, GARDNER OFFICES. I FLEW HOME
17 ON THE 19TH.

18 Q. WHERE DID YOU STAY WHEN YOU CAME?

19 A. I STAYED AT THE HOLIDAY INN AT THOMAS CIRCLE.

20 Q. AND THEN YOU CAME BACK AGAIN. HOW LONG DID
21 YOU STAY ON YOUR SECOND VISIT IN DECEMBER?

22 A. ON JANUARY 4TH, I FLEW BACK HERE, AND THEN --

23 Q. EXCUSE ME JUST A MINUTE. DID YOU NOT COME
24 BACK IN DECEMBER?

25 A. NO.

1 Q. I AM SORRY. I MISUNDERSTOOD YOU. YOU CAME
2 BACK IN JANUARY?

3 A. I CAME BACK ON JANUARY 4TH AND THEN STAYED
4 AGAIN FOUR DAYS AND WENT BACK HOME AGAIN.

5 Q. ALL RIGHT.

6 WHO MET WITH YOU DURING THE FOUR DAYS BEGINNING JANUARY
7 4TH?

8 A. I WORKED PRIMARILY WITH JOHN CONNORS. BOB
9 MACOMBER WAS THERE FOR ONE AFTERNOON FOR A FEW MINUTES,
10 AND OTHER HAIGHT, GARDNER PEOPLE, TOM ALMY. I SAW CARROLL
11 DUBUC. I ALSO MET JOHN EDWARDS FOR THE FIRST TIME ONE
12 EVENING AT THAT TIME.

13 Q. ALL RIGHT.

14 DID YOU REVIEW THE CASE WITH MR. EDWARDS?

15 A. I HAD HIM FOR CERTAIN DIMENSIONS TO BE VERIFIED
16 THAT I NEEDED TO MAKE MY MEASUREMENTS ON THE PHOTOGRAPHY.
17 I WOULD NOT CALL IT A COMPLETE REVIEW OF THE CASE, SIR.

18 Q. ALL RIGHT.

19 WHEN WAS THE FIRST TIME THAT YOU HEARD LOCKHEED'S
20 VERSION OF HOW THEY SAY THE ACCIDENT OCCURRED, AND WHAT
21 HAPPENED?

22 MR. DUBUC: I THINK I WILL OBJECT TO THAT AS
23 TO FORM, YOUR HONOR.

24 THE COURT: THAT OBJECTION IS SUSTAINED. REPHRASE
25 YOUR QUESTION.

1 BY. MR. LEWIS:

2 Q. DID THERE EVER COME A TIME WHEN ANYONE TOLD
3 YOU WHAT LOCKHEED'S VERSION OF THE ACCIDENT WAS?

4 A. I WOULD SAY YES. IT WAS IN GENERALITIES.
5 I WAS TOLD THAT THE AIRCRAFT LOST A CARGO DOOR.

6 Q. I AM NOT ASKING YOU THE DETAILS. I AM JUST
7 ASKING YOU WHETHER --

8 A. YES, IN GENERAL DETAIL, A GENERAL DESCRIPTION
9 OF IT.

10 Q. WHEN WAS THAT, SIR?

11 A. THAT WOULD HAVE BEEN DURING THE JANUARY 16TH
12 MEETING THAT THAT OCCURRED.

13 Q. AND WHO PRESENTED THOSE FACTS TO YOU?

14 A. JOHN CONNORS.

15 Q. AND DID MR. EDWARDS ALSO DISCUSS THAT SUBJECT?

16 A. NO. WE DIDN'T DISCUSS IT IN DETAIL.

17 Q. IN ANY DETAIL?

18 A. I ASKED JOHN CONNORS SPECIFIC QUESTIONS ABOUT
19 THE SITE TO VERIFY MY INTERPRETATION, FOR EXAMPLE, THAT
20 IT WAS A WET RICE PADDY.

21 HE DESCRIBED THE MUDDY CONDITIONS, AND OTHER QUESTIONS
22 REGARDING, AS I SAID, THE DIMENSIONS OF THE AIR FRAME
23 THAT I WAS USING FOR MEASUREMENTS.

24 Q. BUT HOW ABOUT MR. EDWARDS; DID YOU DISCUSS
25 ANY DETAILS WITH HIM?

1 A. THE DETAILS OF WHAT, SIR?

2 Q. ANYTHING CONNECTED WITH THE --

3 A. JUST WHAT I HAVE DESCRIBED TO YOU WERE THE
4 DETAILS THAT I ASKED JOHN EDWARDS ABOUT.

5 Q. NOW, THAT WAS THE FIRST DAY THAT YOU WERE HERE
6 IN JANUARY?

7 A. YES.

8 Q. JANUARY 4TH?

9 A. YES.

10 Q. WITH WHOM DID YOU MEET ON THE 5TH?

11 A. I WORKED PRIMARILY BY MYSELF. I WOULD OCCASIONALLY
12 ASK FOR ASSISTANCE IN GETTING PHOTOGRAPHS OR GETTING TRANSPARENT
13 MATERIAL THAT I NEEDED FOR MY MAPPING JOB.

14 BUT I WORKED PRIMARILY BY MYSELF ON THE MATERIALS
15 THAT THEY PROVIDED.

16 Q. DID YOU WORK WITH ANYONE ELSE?

17 A. NO.

18 Q. NO ONE ELSE?

19 A. NO ONE ELSE.

20 Q. AND HOW LONG WERE YOU HERE ON THAT DAY?

21 A. I BELIEVE IT WOULD BE THE 8TH, SIR; THE 5TH,
22 6TH, 7TH, AND, YES, THE 8TH. I FLEW HOME THE MORNING
23 OF THE 9TH.

24 Q. DID YOU SEE MR. EDWARDS, THE LOCKHEED ENGINEER,
25 AFTER THAT FIRST OCCASION?

1 A. NO, I DIDN'T, UNTIL HE RETURNED THIS WEEK.

2 I HAVE SEEN HIM THIS WEEK.

3 Q. DID YOU EVER TALK TO HIM ON THE 'PHONE?

4 A. NO, I DIDN'T TALK TO HIM ON THE 'PHONE.

5 Q. ALL RIGHT.

6 AND WHO ELSE DID YOU WORK WITH DURING THAT TIME,
7 OTHER THAN THOSE THAT YOU HAVE MENTIONED?

8 A. AT THE --

9 Q. DURING THE WEEK IN JANUARY, OR THE PERIOD IN
10 JANUARY?

11 A. THE PERIOD IN JANUARY?

12 Q. YES.

13 A. I GAVE A DEPOSITION TO YOUR FIRM AT THAT TIME,
14 AND I WAS ACCOMPANIED AT THAT TIME BY JOHN CONNORS.

15 THERE WAS ONE OTHER GENTLEMAN THAT I SAW, WHO WAS
16 A FOREST SERVICE GENTLEMAN WHO HAD EXPERIENCE IN SOUTHEAST
17 ASIA.

18 IN FACT, HE HAPPENED TO BE AN OLD CLASSMATE OF MINE
19 FROM THE UNIVERSITY OF CALIFORNIA FORESTRY SCHOOL. I
20 HAD NOT SEEN HIM IN 20 YEARS, AND I ASKED HIM WHAT HE
21 KNEW ABOUT THE VEGETATION AROUND THE CRASH SITE. BECAUSE
22 HE HAD BEEN STATIONED IN SAIGON.

23 Q. AND HE PROVIDED YOU WITH SOME INFORMATION;
24 IS THAT RIGHT?

25 A. HE DID NOT PROVIDE ME WITH ANYTHING I DID NOT

1 ALREADY KNOW.

2 IN FACT, I WAS DISAPPOINTED THAT HE WAS NOT ABLE
3 TO GIVE ME MORE INFORMATION.

4 Q. WHEN YOU LEAVE WASHINGTON, DO YOU GO BACK TO
5 CALIFORNIA?

6 A. YES.

7 Q. HAVE YOU GOT A PERMANENT ASSIGNMENT IN CALIFORNIA
8 AT THE MISSILE --

9 A. YES.

10 Q. (CONTINUING) -- DIVISION?

11 A. YES, SIR, I DO.

12 Q. WHEN DID YOU GET THAT?

13 A. I GOT THAT ON JANUARY 11TH. IT WAS THE DAY
14 I CAME BACK. LET'S SEE, 9TH, 10TH, 11TH. IT WAS MONDAY,
15 THE 11TH.

16 MY CLEARANCE CAME THROUGH AUTHORIZING ME TO GO WORK
17 IN THE FACILITY WHERE MY PERMANENT ASSIGNMENT WAS.

18 Q. ALL RIGHT, SIR.

19 NOW, WHAT -- DID YOU READ ANY OF THE DEPOSITIONS?

20 A. YES, SIR, I DID.

21 Q. DID YOU READ THE CO-PILOT'S DEPOSITION, HARP?

22 A. NO, I DIDN'T.

23 Q. DID ANYONE TELL YOU ABOUT THE ODOR OF FUEL
24 AROUND THE TROOP COMPARTMENT?

25 A. I ASKED MR. EDWARDS IF HE SMELLED FUEL, AND

1 HE SAID HE DID NOT SMELL FUEL AROUND THE TROOP COMPARTMENT.
2 HE WAS THE ONLY ONE I WAS ABLE TO TALK TO ON THE SITE --
3 WHO HAD BEEN ON THE SITE.

4 Q. SO YOU GOT THAT DETAIL FROM MR. EDWARDS?

5 A. THE FACT THAT THERE WAS NOT FUEL.

6 Q. AT THE TIME THAT HE WAS THERE?

7 A. YES, SIR.

8 Q. DID YOU ASK ANYONE FROM THE LOCKHEED ATTORNEYS'
9 OFFICE, OR ANY OF THEIR STAFF, WHETHER ANYONE REPORTED A
10 FUEL --

11 A. NO, I DID NOT.

12 Q. (CONTINUING) -- SMELL AROUND THE TROOP COMPARTMENT?

13 A. NO, I DID NOT. I RELIED ON THE REPORTS THAT
14 I READ FOR THAT INFORMATION.

15 Q. WAS THAT AN IMPORTANT QUESTION?

16 A. IT WAS IMPORTANT FROM THE STANDPOINT OF FIRE,
17 SIR.

18 IF THERE HAD BEEN FUEL, THERE MIGHT HAVE BEEN FIRE;
19 BECAUSE FUEL, OF COURSE, IS A SOURCE OF FLAMMABLE MATERIAL
20 FOR A FIRE.

21 AND, ALSO, THE QUESTION CAME UP AS TO THE DISCOLORATION
22 OF THE VEGETATION.

23 MY EXPERIENCE SHOWS THAT VEGETATION DOES NOT DISCOLOR
24 FROM A CHEMICAL CONTACT SUCH AS FUEL IN ANYTHING LESS
25 THAN A FEW DAYS.

1 Q. HOW LONG AFTER THE EVENT WAS MR. EDWARDS THERE?

2 A. TWO DAYS, APPROXIMATELY; A LITTLE LESS THAN
3 TWO DAYS. I UNDERSTAND ABOUT 36 HOURS.

4 Q. DID HE TELL YOU THAT, TOO?

5 A. I THINK I READ THAT IN HIS REPORT, SIR. I
6 AM NOT CERTAIN.

7 Q. ALL RIGHT.

8 YOU READ HIS REPORT?

9 A. I READ HIS REPORT.

10 Q. AND DID YOU RELY ON HIS REPORT IN ANY OF YOUR
11 CONCLUSIONS?

12 A. NO, I DID NOT RELY ON THAT. I RELIED ON THE
13 PHOTOGRAPHS, SIR.

14 Q. DID YOU ASK ANY QUESTIONS ABOUT WHETHER ANY
15 OF THE OCCUPANTS OF THE TROOP COMPARTMENT SAW EVIDENCE
16 OF FIRE?

17 A. NO, I DIDN'T ASK THAT QUESTION OF ANYONE.

18 Q. IS THAT AN IMPORTANT QUESTION FOR A PERSON
19 IN YOUR POSITION TO KNOW THE ANSWER TO?

20 A. AS I WOULD CORRELATE INFORMATION, SIR, THROUGH
21 THE CONVERGENCE OF EVIDENCE -- THAT IS THE COMMON TERM
22 USED IN PHOTO-INTERPRETATION -- WHERE WE BRING EVIDENCE
23 IN FROM A NUMBER OF SOURCES, THAT WOULD BE A REASONABLE
24 QUESTION TO ASK: DID ANYONE SEE FIRE ON THE GROUND.

25 YES, SIR.

1 Q. BUT YOU DON'T KNOW WHETHER ANYONE IN THE TROOP
2 COMPARTMENT REPORTED SEEING FIRE?

3 A. THERE WAS A REPORT BY ONE OF THE PEOPLE WHO
4 WAS A WITNESS THERE THAT THEY SAW A FIRE, LOOKING OUT
5 THE REAR OF THE TROOP COMPARTMENT, THE FIRE IN THE WING
6 AREA, YES, SIR.

7 Q. HOW ABOUT LOOKING THROUGH ONE OF THE GRATES?

8 A. I DIDN'T SEE ANY EVIDENCE OF WHAT I WOULD CALL
9 FIRE. THERE WAS ONE REPORT OF CINDERS, WHICH I WOULD
10 PRESUME COULD BE THE SAME WORD AS "DUST," THAT WAS BLOWN
11 UP THROUGH A GRATE.

12 I BELIEVE ONE OF THE STATEMENTS WAS THERE HAD BEEN
13 A FLASH OF SOMETHING, WHICH I DON'T KNOW WHAT THAT WOULD
14 BE ATTRIBUTED TO.

15 Q. WELL, A FLASH -- A FIREBALL IS VERY COMMON
16 IN AN AIRCRAFT CRASH --

17 THE COURT: JUST A MOMENT, MR. LEWIS. THAT
18 IS NOT APPROPRIATE.

19 MR. LEWIS: ALL RIGHT, SIR.

20 THE COURT: YOU GO ON TO SOMETHING ELSE.

21 LADIES AND GENTLEMEN, AS I HAVE TOLD YOU MANY
22 TIMES, WHAT THE LAWYERS SAY ISN'T EVIDENCE.

23 BY MR. LEWIS:

24 Q. NOW, DID I UNDERSTAND THAT YOU FEEL THAT THE
25 WRECKAGE DIAGRAM, EXHIBIT D-9, IS ACCURATE?

1 A. YES, SIR.

2 Q. AND YOU WOULD RELY ON THAT AS AN ACCURATE REPRESENTA-
3 TION OF WHAT IT PURPORTS TO SHOW; IS THAT CORRECT?

4 A. YES, SIR, THAT IS CORRECT.

5 Q. NOW, ARE YOU TELLING US THAT THERE ARE NO
6 CHANGES IN ELEVATION AT ALL AROUND THE TROOP COMPARTMENT,
7 EVEN SLIGHT?

8 A. I CONSIDERED NO MORE THAN SIX INCHES OF AN
9 ELEVATIONAL CHANGE AROUND THAT, WITH THE EXCEPTION OF
10 THE LEVEES WHICH ARE INSTALLED BY THE FARMERS TO CONTROL
11 THE WATER IN THEIR FLOODING OPERATIONS.

12 Q. WELL, DID YOU UNDERTAKE TO TRY TO DETERMINE
13 WHETHER THERE WERE AREAS AROUND THE TROOP COMPARTMENT
14 THAT WERE ABOVE THE WATER LEVEL, SO THAT THEY WOULD BE
15 DRY; FOR EXAMPLE, SO THAT YOU COULD PUT A BABY ON, IF
16 YOU WERE REMOVING IT FROM THE TROOP COMPARTMENT?

17 A. THERE IS EVIDENCE ON THE PHOTOGRAPHY OF SPOTS
18 THAT DO NOT HAVE STANDING WATER, YES. THAT WOULD PROVIDE
19 A PLACE WHERE A BABY COULD HAVE BEEN PUT.

20 Q. ALL RIGHT.

21 NOW, ARE YOU TELLING US THAT THAT IS NOT AN ELEVATION,
22 SIR?

23 A. SIR, WHEN THE RICE LAND IS PREPARED, AS WE
24 NOTICED ON THOSE PHOTOS, THERE ARE MANY PARALLEL LINES.
25 THOSE ARE DRAINAGE FEATURES IN BETWEEN THE RICE ROWS.

1 AND, THEREFORE, THERE ARE MAN-CONSTRUCTED FEATURES THAT
2 ARE NOT PERFECTLY LEVEL.

3 AND THEY ARE STILL WITHIN THIS SIX-INCH-MAXIMUM-
4 ELEVATION DIFFERENCE, EXCEPT FOR THE WATER-CONTROL LEVEES,
5 WHICH CAN BE AS HIGH AS 20 INCHES.

6 Q. SO YOU ARE SPEAKING OF THAT SORT OF THING?

7 A. YES, SIR. THE TERRAIN, ITSELF, IS VERY FLAT.

8 MR. LEWIS: WILL YOU INDULGE ME A MOMENT,
9 YOUR HONOR?

10 THE COURT: YES, SIR.

11 MR. LEWIS: THANK YOU, YOUR HONOR.

12 BY MR. LEWIS:

13 Q. LET ME SHOW YOU THIS PICTURE, SIR. I WILL
14 GIVE YOU THE NUMBER. IT IS 5242.

15 MR. LEWIS: AND MAY I HOLD THIS UP, YOUR HONOR?

16 THE COURT: YES. HOLD IT SO THAT THE JURY
17 CAN SEE IT.

18 MR. LEWIS: MAY I APPROACH THE WITNESS, YOUR
19 HONOR?

20 THE COURT: YES, INDEED.

21 BY MR. LEWIS:

22 Q. NOW, SIR, IN THIS PICTURE, ARE THERE ANY SPOTS
23 THAT YOU WOULD IDENTIFY AS A DRY SPOT?

24 A. YES, WHERE I DON'T SEE STANDING WATER AT THE
25 TOPS OF THESE LEVEES HERE; PERHAPS THIS AREA HERE, WHERE.

1 I DON'T SEE STANDING WATER.

2 AND IT IS HARD TO TELL -- IT IS IMPOSSIBLE TO TELL,
3 WITH THE VEGETATION COVERING THE GROUND IN THE BACKGROUND,
4 WHETHER THERE IS STANDING WATER IN IT OR NOT.

5 Q. BUT THIS IS THE AREA THAT YOU ARE SPEAKING
6 OF AS THE DRY SPOT?

7 A. FROM THIS ANGLE, WE CANNOT SEE THE WATER, BECAUSE
8 THE VEGETATION HIDES IT.

9 BUT WHERE THE VEGETATION DOES NOT HIDE IT, YOU SEE
10 STANDING WATER.

11 AND, YET, ON OTHER PHOTOGRAPHS LOOKING DOWN VERTICALLY,
12 WE HAVE SEEN STANDING WATER IN VARIOUS SPOTS HERE, EXCEPT
13 FOR THE AREAS WHERE THESE DRAINAGE FEATURES HAVE BEEN
14 PUT IN BY THE FARMERS.

15 Q. BUT THE REST OF THE AREA TOWARD THIS END OF
16 THE TROOP COMPARTMENT WOULD BE WET; IS THAT YOUR TESTIMONY,
17 SIR?

18 A. I DIDN'T SAY THAT. I SAID I CANNOT SEE STANDING
19 WATER WHERE THE VEGETATION IS, BECAUSE THE VEGETATION
20 OBSCURES IT.

21 BUT I CAN SEE STANDING WATER; AND, AS WE SHOWED YOU
22 IN THE HELICOPTER FLIGHT AROUND THE TROOP COMPARTMENT,
23 WE CAN SEE STANDING WATER LEADING ALL THE WAY AROUND THE
24 TROOP COMPARTMENT.

25 Q. WELL, IS THAT A DRY SPOT THERE?

1 A. THERE IS VEGETATION COVERING IT, SIR. I CANNOT
2 TELL. THERE MAY BE STANDING WATER; THERE MAY NOT BE.

3 Q. DO YOU KNOW WHETHER THAT IS A DRY SPOT?

4 A. IT WOULD BE THE SAME ANSWER, SIR.

5 Q. YOU DON'T KNOW?

6 A. I DON'T KNOW, FROM THIS ANGLE. IF I WERE
7 GIVEN OTHER ANGLES, I COULD TELL, AS WE SHOWED ON THE
8 OTHER PHOTOGRAPHY.

9 Q. CAN YOU TELL ME THE SCIENTIFIC NAME OF THE
10 VEGETATION HERE, FOR EXAMPLE?

11 A. NO, SIR, I CAN'T.

12 Q. CAN YOU TELL ME THE SCIENTIFIC NAME OF THE
13 VEGETATION THERE?

14 A. NO, SIR.

15 Q. THEY HAVE NAMES --

16 A. THEY HAVE NAMES --

17 Q. (CONTINUING) -- ISN'T THAT CORRECT?

18 A. (CONTINUING) -- YES.

19 Q. AND THEIR CHARACTERISTICS ARE KNOWN TO SOME
20 PLANT SPECIALISTS?

21 A. THAT IS RIGHT. THE COMMON NAME FOR THAT VEGETATION
22 IS CABBAGE PALM.

23 Q. DO YOU KNOW THE SCIENTIFIC NAME FOR THIS?

24 A. THAT IS THE SAME MATERIAL. THAT IS CABBAGE
25 PALM, ALSO.

1 Q. AND IS THIS CABBAGE PALM HERE?

2 A. NO, THAT IS A DIFFERENT VEGETATION. I DON'T
3 KNOW THE COMMON NAME FOR THAT.

4 Q. ALL RIGHT.

5 CAN YOU TELL ME THE NAME OF THIS VEGETATION HERE?

6 A. NO, I DON'T KNOW THE NAME OF THAT.

7 Q. IS THAT DIFFERENT FROM THIS MATERIAL HERE,
8 SIR?

9 A. YES.

10 THIS IS THE CABBAGE-PALM TYPE DOWN HERE WITH THE
11 PARALLEL LEAVES THAT YOU SEE.

12 Q. IS THERE ANY OTHER TYPE OF VEGETATION THAT
13 HAS A DIFFERENT NAME THAT YOU SEE IN THE PHOTOGRAPHS?

14 A. I AM NOT ABLE TO NAME THOSE, SIR.

15 Q. ALL RIGHT.

16 WHAT IS THIS STRUCTURE HERE; DO YOU KNOW?

17 A. THAT IS A WALL OF THE AIRPLANE, A BULKHEAD.

18 Q. THAT WOULD BE IN THE INTERIOR OF THE AIRCRAFT,
19 SIR?

20 A. EVIDENTLY, THE EXTERIOR WOULD BE HERE. THAT
21 WOULD BE INTERIOR.

22 MR. LEWIS: CAN YOU SEE, YOUR HONOR?

23 THE COURT: YES.

24 BY MR. LEWIS:

25 Q. WOULD YOU TAKE MY PEN AND WRITE "BULKHEAD,"

1 OR PERHAPS I COULD FIND --

2 THE COURT: IS THAT YOUR EXHIBIT?

3 MR. LEWIS: YES, IT IS.

4 THE COURT: ALL RIGHT.

5 MR. DUBUC: IF IT IS HIS EXHIBIT, I HAVE NO
6 OBJECTION, YOUR HONOR.

7 MR. LEWIS: I WOULDN'T WRITE ON ANYBODY ELSE'S,
8 YOUR HONOR.

9 THE COURT: OKAY.

10 MR. LEWIS: PERHAPS I COULD GET A SMALLER COPY.
11 DO WE HAVE ONE? THE NUMBER OF THIS EXHIBIT IS 5207.
12 INDULGE ME JUST A MINUTE, YOUR HONOR, AND I WILL GET A
13 SMALL COPY, SO THAT WE DO NOT USE THIS ONE.

14 WHILE WE ARE WAITING FOR THAT, YOUR HONOR,
15 I HAVE A FEW MORE QUESTIONS, IF I MAY ASK THE WITNESS?

16 THE COURT: YES, SIR.

17 BY MR. LEWIS:

18 Q. SIR, HOW HIGH UP WERE THE AERIAL PHOTOGRAPHS
19 TAKEN? THERE WERE SOME HIGH-ALTITUDE AERIAL PHOTOGRAPHS
20 TAKEN?

21 MR. DUBUC: YOUR HONOR, I AM SURE SOME OF THESE
22 WERE TAKEN AT DIFFERENT ALTITUDES.

23 MR. LEWIS: I WILL WITHDRAW THE QUESTION, YOUR
24 HONOR.

25 MR. DUBUC: IF HE WANTS TO GET --

1 THE COURT: IT IS WITHDRAWN.

2 MR. DUBUC: THANK YOU.

3 MR. LEWIS: YOUR HONOR, I AM SHOWING THE WITNESS
4 EXHIBIT 5207.

5 BY MR. LEWIS:

6 Q. WOULD YOU USE MY PEN, SIR, AND WRITE ON THAT
7 WHERE YOU SAID IT WAS A BULKHEAD?

8 A. (THE WITNESS DOES AS REQUESTED.)

9 Q. AND I BELIEVE YOU SAID THAT WAS AN INTERIOR
10 BULKHEAD. WRITE "INTERIOR" ABOVE IT; WOULD YOU?

11 A. (THE WITNESS DOES AS REQUESTED.)

12 MR. DUBUC: MAY I SEE WHAT WE ARE WRITING ON?

13 MR. LEWIS: RIGHT THERE.

14 MR. DUBUC: OKAY.

15 MR. LEWIS: THANK YOU VERY MUCH.

16 I WOULD LIKE TO OFFER THIS, AND MAY I EXHIBIT
17 IT TO THE JURY, SIR?

18 THE COURT: DO YOU WANT TO GIVE US A NUMBER?

19 MR. LEWIS: YES, SIR. IT IS 5207-A, WITH
20 THE COURT'S PERMISSION.

21 THE COURT: ANY OBJECTION?

22 MR. DUBUC: NO, NO OBJECTION.

23 THE COURT: IT IS RECEIVED. YOU MAY PUBLISH
24 IT TO THE JURY.

25 MR. LEWIS: THANK YOU, YOUR HONOR.

5207-A RECEIVED IN EVIDENCE.)

THE COURT: LET THE JURY PASS IT ALONG. MARSHAL,
GIVE THAT TO THE JURORS.

YOU CONTINUE YOUR EXAMINATION.

MR. LEWIS: YES, SIR, I WILL.

BY MR. LEWIS:

Q. ARE YOU A MEMBER OF THE AMERICAN SOCIETY OF
PHOTOGRAMMACISTS, OR WHATEVER THEY CALL THAT?

A. PHOTOGRAMMETRY, YES, SIR.

Q. AND HOW LONG HAVE YOU BEEN A MEMBER OF THAT
ORGANIZATION?

A. SINCE 1956.

Q. DO YOU KNOW DR. MORAIN?

A. YES, SIR.

Q. IS HE A COMPETENT PHOTOGRAMMETRIST?

A. HE IS A PHOTO-INTERPRETER. "PHOTOGRAMMETRIST"
MEANS SOMETHING ELSE TO ME, SIR.

Q. THANK YOU.

MR. LEWIS: THAT IS ALL THE QUESTIONS I HAVE,
YOUR HONOR.

THE COURT: ANY REDIRECT?

MR. DUBUC: I DON'T BELIEVE SO, YOUR HONOR.

THE COURT: VERY WELL.

MR. DUBUC: NO REDIRECT.

1 THE COURT: THANK YOU VERY MUCH.

2 MR. LEWIS: YOUR HONOR -- OH, EXCUSE ME.

3 MR. DUBUC: I WOULD LIKE TO OFFER THESE EXHIBITS,
4 JUST IN CASE THERE IS ANY QUESTION.

5 THE COURT: ALL RIGHT. WE WILL HAVE THE WITNESS
6 WAIT JUST A MOMENT. GO AHEAD.

7 MR. DUBUC: THOSE ARE EXHIBITS -- LET'S SEE.

8 THE WITNESS: AM I EXCUSED, YOUR HONOR?

9 THE COURT: LET'S SEE WHETHER HE HAS ANY PROBLEMS
10 WITH HIS EXHIBITS. JUST A MOMENT.

11 THE WITNESS: OKAY.

12 MR. DUBUC: D-1362, D-1437, D-1394, D-1448,
13 1364, 1445, 1428, 1384, 1444, 1386, 1381, 1397, 1446,
14 1321, 1396, 1398, AND THAT IS IT.

15 MR. LEWIS: NO OBJECTION.

16 MR. DUBUC: THANK YOU, YOUR HONOR.

17 THE COURT: YOU ARE EXCUSED, DOCTOR. THANK
18 YOU VERY MUCH.

19 THE WITNESS: THANK YOU.

20 (WITNESS EXCUSED)

21 (DEFENDANTS' EXHIBITS D-1362, D-1437,
22 D-1394, D-1448, D-1364, D-1445, D-1428,
23 D-1384, D-1444, D-1386, D-1381, D-1397,
24 D-1446, D-1321, D-1396, AND D-1398 WERE
25 RECEIVED IN EVIDENCE, RESPECTIVELY.)