AFTERNOON SESSION 1:50

THE COURT: Are you ready to resume?

MR.LEWIS: Yes, Your Honor.

THE COURT: Bring the jury in.

(The jury enters the courtroom.)

THE COURT: Call your witness.

MR. DUBUC: We will Captain Tilford Harp.

Whereupon,

CAPTAIN TILFORD WARREN HARP

was called as a witness and,having been first duly sworn, was examined and testified as follows:

DIRECT EXAMINATION

BY MR. DUBUC:

Q Good afternoon, Captain.

A Good afternoon.

Q Captain, will you state your full name and address for the record?

A Tilford Warren Harp. I reside at [redacted] Ofallon, Illinois.

Q And what is your occupation, sir?

A Presently, I am an Operations Research Analyst with headquarters at the Military Aero Command, Scott Air Force Base, Illinois.

Q Could you state for us just briefly your military background, how you got in the Air Force-

A I enlisted in the Air Force in 1964, and served two years as an enlisted man, at which time I applied for the Air Force Academy. In 1966, I was accepted there and graduated from there in 1970. I went through undergraduate pilot training for one year at Vance Air Force Base, Oklahoma.

I served for two years as a 141 co-pilot. In 1973, I was assigned to C-5. I flew C-5s from 1973 to 1978.

In 1978, I went through the Air Force Institute of Technology, and I received a Master's Degree. And for about the last four months, I have been stationed at Scott.

Q What degree did you get when you got your Master's?

A I received a Master's of Science in Operations Research.

Q And during your flight training, did you receive any aero physiological training?

A Yes, sir, I did, on several occasions.

Q Just briefly describe that, sir.

A Primarily, it consisted of a few hours of academic classes concerning hypoxia, decompression sickness, and primarily oriented towards what we, as crew members, might do to recognize our symptoms of hypoxia, and how we could overcome hypoxia and then we had an altitude chamber

flight.

Q Do you recall any of the details of the chamber flight you received, the altitude, decompression time; anything like that?

A Just a few of them. It is roughly, they started with times of useful consciousness. As I recall, 25,000 was one of the key altitudes. And roughly 7 or 8 minutes at that altitude. Anytime you get above 30,000 feet, you are talking about a few minutes or less, and the higher you get up, it goes down to seconds.

Q Now, in connection with that training, did you receive any training or instruction on on what is called, not hypoxia, but decompression sickness -- decompression effects?

A About the only -- we didn't really get into it very far medically. We were told what to do if we had a case of that on board. We were given some altitudes, and things that we should do as crew members.

Generally, you are talking pretty high altitudes before you have to worry about something like that

Q Would you tell us what instruction you received at this altitude?

A As I recall it is somewhere above 30,000. Again, I don't know the exact cut-off.

Q Captain, did there come a time whenyou were

assigned to a C-5 squadron in the Philippines?

A Well, I wasn't assigned to a C-5 squadron in the Philippines. I was assigned to a C-5 squadron at Travis.

Q I see.

A We flew out of Travis through the Philippines.

Q Did you fly missions to Vietnam?

A Not on a C-5, I did not. The only mission I flew in Vietnam was Operation Babylift on a C-5.

Q Did you fly missions to Vietnam into the same airport with other types of aircraft?

A Yes, I did. I flew 141s for two years. Again, out of Travis. I made several trips into Vietnam, primarily Saigon Air Force Base.

Q Okay. Now, did there come a time when you were aboard a C-5-A that was scheduled to go to Saigon on or about April 4, 1975?

A Yes, sir, there was.

Q Could you tell us what your function was on that C-5-A?

A I was the First Pilot, and I performed the co-pilot duties. We were flying an augmented crew. You had to have a First Pilot or higher; we had to have an Aircraft Commander or higher and a co-pilot; and I filled the position of First Pilot.

Q Were you in the Philippines at the time you learned about that mission?

A Yes, sir, I was.

Q Did you proceed to Saigon subsequent to learning about that mission?

A Yes, I did.

Q Do you recall about when you arrived in Saigon?

A As I recall, I think it was 12:53 local time in Saigon.

Q That is about 7 minutes of 1:00 p.m. local time?

A Right.

Q And at the time you went to Saigon, were you carrying some other cargo?

A Yes, we were carrying a load of Army howitzers, 10 or 11; I don't remember exactly how many.

Q Was that a mission that you had been on enroute to Vietnam?

A It was a mission we had picked up at Hickham Air Force Base in Hawaii.

Q So, after you landed at Saigon, was it necessary to unload the airplane?

A In Saigon, it was,yes.

Q Do you recall about how long that took?

A The off-load, I would say somewhere between an

hour and an hour and a half.

Q Did you receive a briefing of any kind with respect to this mission in the Philippines?

A I personally did not receive a briefing other than we would have a normal intelligence briefing, the entire crew, or at least the officer segment of the crew received it, concerning the volatile nature around Saigon, and possible SAMs, surface air missiles.

Other than that, I personally received no formal briefing. The only thing else I knew came from Captain Traynor.

Q Did he brief the crew?

A He briefed us very informally according to information he had received.

Q Now, let's go back to the time when you arrived in Vietnam. You said that you unload the cargo that you had? Is that correct?

A That's correct.

Q And what happened then?

A After approximately an hour and a half, the on-load started; onloading the children and whatever adults were going with us. And during the majority of that, I was on the flight deck. I left the flight deck at one point just after the off-load and prior to the on-load searching for some passenger stairs to assist in the

on-loading of the children.

Q Do you recall anything concerning any special arrangements that were made with respect to the airplane while you were on the ground in Saigon?

A At Saigon? No, I do not. I was on the flight deck.

Q In the intelligence briefing that you received, was there anything regarding security measures?

A Well, security was stressed. Normally, when we go to any airport there will be some kind of security teams available but, due to the fact that Saigon was completely surrounded, what security was there we pretty much had to take care of ourselves. So we established an air crew security. As I recall, there was an armed Vietnamese guard that was there assisting us with security.

Q Now, did there come a time when there were loaded on the airplane a group of adults and children?

A Yes, there did.

Q Do you recall approximately how long that took to load them?

A I would say it would be approximately a little over an hour after the off-loading. I am basing that strictly on when we started running checklists, the completion of the on-loading.

Q And do you recall approximately what time you

took off?

A 1600 hours local take-off time.

Q Approximately how long were you on the ground total between the unloading of the cargo and loading on the orphans?

A Just a little over three hours -- three hours and seven minutes exactly.

Q Now, after take-off, can you describe what you did -- what happened?

A Well, because of the briefing that we received on the surfaced air missiles within the area, we were briefed to make a steep approach and take-off out of Saigon. We did what we call a maximum rolling take-off. It was nothing out of the ordinary. We do that on several occasions. It was a normal -- other than the fact it was maximum climb altitude, it was a normal climb out at about 16,000 feet and we began to accelerate our speed.

Q Were you at the controls of the airplane -- you were the pilot?

A I was in the right seat. I was not physically controlling the airplane. I was performing the co-pilot's duties.

Q You were in a position where you could monitor all of the instruments of the airplane?

A Yes, sir.

Q Do you recall the climb-out speed?

A Initially, it was 200 knots until about 16,000 feet, and we began to pick up slowly, lowered the nose to accelerate your normal climb-out speed, 270 knots.

Q And did there come a time when a rapid decompression occurred?

A Yes, there did. As I recall, well, it was three minutes after we had checked one of our navigation units, the tower radio beacon. It was three minutes past the coast of Vietnam. And, as I recall, it was approximately 15 minutes after take-off. And we had a rapid decompression somewhere above 22,000 feet; close to 23,000.

Q Close to 23,000?

A Um-hum.

Q Did you happen to note that at some point that was on the altimeter?

A I had just looked at the altimeter. I think I recall seeing 23,300 sometime prior to the rapid decompression.

Q So that the jury understands it, an altimeter is what, sir?

A It is an instrument that tells you at what altitude you are flying over or climbing through. It is a vertical tape instrument. It has a little needle-like thing that moves up and down as you go through a certain

altitude. As it passes through that, you get additional numbers on the tape.

Q And you were in a position so that you had an altimeter in front of you that you could observe?

A Yes, sir, both the pilot and co-pilot.

Q All right. Can you tell me what happened after what you observed after the decompression occurred?

A Right at the decompression, I heard a loud bang, followed by instantaneous fog in the cockpit. It dissipated almost as it came. And, from the training I had had in the altitude chamber, I recognized it as a rapid decompression. I donned my oxygen mask and notified the crew to check oxygen that we had rapid decompression. And, at the same time, I turned on the fasten seatbelts and no smoking lights overhead.

Q You described the fog. Would you tell the jury what you know about that?

A As far as I know, it is like condensation. It comes in the air just momentarily and completely disappears. It was not a heavy enough fog that you couldn't see. It was just there and then it was gone.

Q Now, after you turned on the seatbelt signs, and gave the indications you just told us about, would you tell us something about what you observed as far as you and the pilot were able to control the airplane?

A Well, basically, almost within seconds of the rapid decompression, we began a slow left turn, descending left turn back toward the coast. At the time we were over water. And, in addition to turning on the switches on the overhead panel, we had numerous lights indicating malfunctions throughout the aircraft. I was also taking in the reports that were coming in over the intercom in various areas of the aircraft. And shortly thereafter, Captain Traynor remarked to me that he was unable to control the aircraft.

Q What, if anything, did you do then?

A I remember looking over at Captain Traynor and he had the control wheel or yoke pulled all the way to his chest. At that time we were rapidly descending. I was bringing the power back to idle, and it was not really arresting. As a matter of fact, it was increasing. And I assumed that his yoke had sheared for some reason and he couldn't control through his yoke. So I grabbed mine and gave it a couple good shakes, with no response, at which time for some unknown reason we were just about at full power. It was about that time that the nose actually began to come up and rapidly we we went into a climb.

Q Do you have any idea from your observations, or did you make any observations of the altimeter as to how rapidly you were descending during the first period of time

you just described?

A I didn't look at -- we have what we call a vertical velocity indicator. I don't recall looking at it to see what the rate of descent was, but the initial descent was a rapid descent, other than a normal descent that we do flying C-5s. It was a rapid descent. The first climb was a rapid climb. I can't give you exact figures on this.

Q Can you tell us what happened -- withdraw that.

You mentioned the nose started to come up. Was that because of the application of power, or a combination of things; or what?

A At the time we thought it was the application of power. Since then I have been told in speaking with some aero engineers who said it was also the fact the air speed was increasing above a certain point. The increased air speed as well as the power brought the nose of the aircraft up.

Q Now, after the decompression, did you notice any appreciable temperature change at that time in the area you were in?

A No, I did not.

Q Do you know if there was any reported to the cockpit to you or the captain?

A There was not. Normally, primarily the troop

compartment, they complain about the temperature. It is either too hot or too cold, see if we can get them more air one way or the other. There was none of that after the rapid decompression.

Q Are you familiar with the airconditioning, heating system of the C-5-A?

A To some extent.

Q Could you tell me what it runs out from, in general terms, so the jury understands it?

A Well, it runs off of bleed air off of the engines. The compressor stays in the engines. It takes the bleed air and takes it through a lot of environmental tubing, some primary heat exchanges and some secondary heat exchanges and it cools the air down. It is very hot. I don't remember the exact temperature, but it takes that air and cools it down. And then you have the ability to mix in air directly off the engine, and to either heat that air up or use it as airconditioning.

Q Is there a thermostat in that system?

A Yes, there is, in all the compartments.

Q From what you told us, is it a correct statement if the engines are still running, the hearing or cooling system would still be running; is that true?

A That's true.

THE COURT: There is an objection.

MR. LEWIS: Counsel has mentioned it several times.

THE COURT: You do have a tendency--

MR. DUBUC: I am sorry, Your Honor.

THE COURT: Don't do that.

MR. DUBUC: Is that--

THE COURT: That is just a comment.

MR. DUBUC: Your Honor, I am sorry.

BY MR. DUBUC:

Q Now, you were discussing the descent, where you finally got the nose up in the airplane. What happened after the first initial descent when the nose came up?

A Well, the airplane got into a rapid climb, and we got it out of rapid climb by rolling to the right, a pretty hefty turn. I can't give you the exact angle, and at the same time we brought the power back to almost the idle position. It seemed to arrest the climb, and it started back into another descent, not as rapid as the first. Throughout all of this, we were trying to figure out what controls we had and what we didn't have.

Q At some point did you figure that all out?

A At that time it was pretty apparent that the only thing that was really giving us a response was the power implication. We could bring the nose up by applying power, and if we wanted the nose to go down we would

withhold the power.

We could tell that we had ailerons. Shortly thereafter we figured out we had the right aileron and the left one was not operative due to the lack of hydraulic pressure. We had no rudders and none of the switches were working. We tried those.

Q And what, if any, procedure was developed as a result of all these things you told us about concerning control of the airplane?

A You are talking about subsequent to the--

Q Yes.

A It is quite an involved procedure. It came out shortly before I left C-5s. As I recall, it was a four or five-page procedure that you have to go through. Various things you can try. I guess they have since attempted to simulate--

MR. LEWIS: Your Honor, I think this is post-accident. I will be glad to go into post-accident--

MR. DUBUC: I think he misunderstood my question.

BY MR. DUBUC:

Q The procedure I was referring to was what procedure you and the pilot concluded you were going to follow after you described this initial descent and climb.

A At that time, we figured the only thing we had

was power, and somehow we would try and control the aircraft by using power. Nothing else would control the altitude of the craft.

Q Were you able to make turns with this one aileron you described?

A Yes, we were. We didn't make any big turns, you know, after coming out of the initial climb. Coming out of the initial climb, we made a pretty sharp turn, but after that we didn't.

Q With only one aileron on an airplane, can you make as large or as big a turn as quickly as you can with full controls?

A No, you cannot. It is like having power steering, or something like that. It was a sluggish turn, but you could still to some degree control the heading of your aircraft.

Q When you say "sluggish"; does that mean a gradual turn?

A A gradual turn.

Q Did there come a time that you got this procedure worked out -- withdraw that.

Did you continue to descend with this procedure that you worked out?

A There were a few cycles there that we went up and went down -- climbs and descents. They were not as

rapid as the first two we had. Throughout the whole thing though, we were losing more altitude than we were gaining. It was kind of like coming down and going upstairs, but the whole time you are losing altitude.

Q And during this descent, did you keep your oxygen mask on for the whole time?

A Not through the whole time. No, I was having trouble communicating both within the aircraft and outside the aircraft. The microphone connector on the oxygen mask was cutting in and out intermittently. At approximately 15,000 or so, I remember throwing the oxygen mask off. I figured it would be better to be able to communicate with the crew than to worry about the oxygen.

Q And, based on your taining, did you believe that that was an altitude where you could do that?

THE COURT: Is there an objection?

MR. LEWIS: I think it is very leading.

THE COURT: You are tending to do that.

MR. DUBUC: I am sorry, Your Honor.

THE COURT: I have warned you about five times. I am going to have to do something drastic if you don't stop it.

BY MR. DUBUC:

Q You say you took the oxygen mask off at 15,000?

A Yes, I did.

Q Did you experience any different effect or feeling in your body after that?

A Absolutely not.

Q Now, did there--

THE COURT: That last question was not a proper one. I am going to start interrupting or sit you down.

BY MR. DUBUC:

Q Could you describe for us, Captain, what happened during the period when the airplane finally came in for a landing?

A There was a time there after we got down to a fairly low altitude, say around 10,000 feet, we had regained some semblance of control over the aircraft. We could pretty much keep an altitude of within 3 or 400 feet of where we wanted to keep it. We didn't have it completely under control. Throughout the whole thing, we were talking about what we had and didn't have , what we could do with what we had, that sort of thing.

We decided initially to start putting the gear down. As I recall, we started at about 10,000 feet putting the gear down, which was not a normal extension of the gear. We had lost our hydraulic system that controlled part of the gear. So we had to emergency extend the nose gear and the aft wing gear. And the whole time we were losing altitude and trying to make it back to the airport in

Saigon, making a shallow left turn, as I recall, a 30 to 40 degree head change we had to make. And approximately, somewhere around 4,000 feet -- throughout the whole thing, of course, we were trying to slow down, trying to reach some semblance of landing speed. And at approximately 4,000 feet, during our turn and final approach, the nose lowered very drastically. And at this time we rolled, wings level, and tried to arrest the descent.

Q Could you tell us what happened then?

A Well, we did manage to arrest the rate of descent. Just prior to landing, the nose did come up, and it was in what I would call a normal landing attitude even though we were not landing. We had observed a spot at the right of the runway. It was sort of like a swamp or bog. There were patches of water here and there. It looked relatively free of trees and looked like a good place to go.

Q All right. Can you describe the landing?

A The first landing I would describe as relatively smooth, considering the conditions we were landing in. I guess some people would probably call it a firm landing or something. I have seen worse landings. I personally have made worse landings.

Q When you say you have made worse landings, what do you mean by that?

A I mean as far as the firmness of the touch down, in a C-5.

Q Do you mean like this in a bog or on a runway?

A No, no, on a runway.

Q I see.

Tell us what you recall happened after that.

A We touched down. I remember looking at the air speed just prior to touch down, and it was something in excess of 260 knots, as I recall, between 265 and 270; something in that area.

THE COURT: I can't hear you.

THE WITNESS: Something between 265 and 270, something in that area. We were on the ground for a short time, I would say maybe a couple thousand feet. We were trying to get the aircraft to stop. I do remember trying to get on the brakes to see if we could bring the aircraft to a complete stop. It was about that time I noticed that we were back in the air and physically flying again. I remember seeing the bend of the Saigon River coming into view and, basically, we were heading for the middle of the river, at which time we re-applied full power trying to clear the river, which we did. We just barely landed on the other side of the river.

BY MR. DUBUC:

Q Now, you have described this first landing as

firm, or similar to other landings that you have made. Can you place it in any context with respect to what are known as G forces?

A I would say there were hardly any G forces on the first landing.

Q On the first landing?

A On the first landing.

Q Okay. What happened after that?

A We cleared the river and, again, as I recall, we had full power prior to impact. It became obvious that we were going to impact a second time on the other side of the river. And the second impact was extremely hard, as I recall.

About that time the mud was flying up over the windshield. We lost electrical power in the cockpit and it was becoming black inside from the loss of power and mud on the windshield. It seemed like we were sliding through the bog. I could feel the airplane sliding. The slide itself was relatively smooth. It was a nice long slide. I really couldn't feel any forces on my body at the time. I could feel a slight rolling sensation to the right but, since I had no visual reference, I really couldn't tell if we were rolling. And after some time of the sliding, it just came to a stop.

Q Now, can you place in any way, as compared to

other landings, or other experiences you had, in terms of G forces as to the second landing?

A The second one. Again, I don't recall feeling any G forces on my body as far as the shoulder harness or lap belt, or anything like that. I really couldn't give you a number as far as how many Gs. We do have a G meter on the pilot's side of the aircraft. Obviously, I wasn't looking at the G meter.

THE COURT: I didn't hear that last. Meter?

THE WITNESS: We do have a G meter on the pilot's side of the aircraft, but at the time we were not looking at the G meter.

BY MR. DUBUC:

Q So you don't have any estimate?

A Not really. Again, it didn't seem like -- I had seen like a 2 G maneuver going through pilot training, and it didn't seem in excess of that. That is just a rough comparison.

Q You mentioned something about sliding through mud. Do you have any estimate as to the time that took between the impact and when the slide ended and you stopped?

A As far as seconds, I really couldn't give you any idea. I do recall it seemed like an eternity only because we were waiting to slide into something in front of us or waiting for everything behind us to crash into us.

In that context, it seemed like a very long time.

Q Now, you previously indicated that you put your oxygen mask on at one point and took it off, you said something about 15,000 feet?

A That's right.

Q Do you have any estimate of the actual amount of time you actually had it on, between the time you first put it on and took it off?

A I would say somewhere between three to four minutes, approximately.

Q And you say at the end of this slide, you kind of rolled over? Is that what I understood you to say?

A After the fact I knew we had rolled over. I just felt an initial roll, nothing really abrupt or anything like that. You kind of feel your body leaning like the airplane was rolling. I didn't know how much we had rolled until we physically got outside and looked at it.

Q In addition to yourself and the pilot, were there any other persons up in this flight compartment area?

A In the flight deck area itself, we had an engineer, a navigator, and Captain Malone was in the jump seat, and Captain Traynor and myself. We were at the flight station itself.

Q Were there any other persons in what has been described as the crew quarters?

A Yes, there were. I don't recall exactly how many were back there, but I think four or five individuals were located aft of the flight station, in what we call the relief crew, courier compartment.

Q Were they all in there at the time of the landing?

A As far as I know, they were, yes.

Q And after the crew compartment came to a stop, what happened then?

A It got very quiet inside, so we could tell we had stopped sliding through the bog. And we all exited out the pilot's side window. And I was the last one to get out of the cockpit area. I had the dash, the instrument panel and all that stuff had kind of fallen on top of me, and I got both of my legs tangled up in the rudder pedal, so I was having a little bit of trouble getting out. That is primarily why I was the last one out of the flight crew area. We stepped out of the aircraft and pretty much went about the business of taking care of the injured.

Q You say you had your legs tangled up in the rudder pedal. What do you mean by that?

A Well, initially, after the first impact, we were on the ground for some length of time, and I was trying to ride the brakes, pressing very hard on the brakes, trying to get the aircraft to come to a stop. When we got

airborne again, my feet were still on the rudder pedals, and somewhere along the line they slipped off and the rudder pedal kind of trapped my legs underneath the rudder pedal.

Q Were you injured?

A Nothing serious. I sprained both of my ankles. I had a few cuts and abrasions, nothing that required any surgery or anything like that.

Q How did you sprain your ankles?

A I believe that I sprained them myself. I do recall being in some sort of a hurry to get out of the cockpit area after we had come to a stop. And they were tangled up and, rather than taking my time, I just reached down and forcibly pulled my legs out; so I probably sprained my ankles myself.

Q You pulled them out of what, the rudder pedal?

A Out from under the rudder pedal.

Q I see. Was anybody else that was on the flight deck at the time of the second impact injured?

A Not that I know of. As far as I know, I think I was the only one who received any injuries to speak of.

Q Now, after you exited from the airplane, what did you do -- from the flight compartment, sorry?

A Personally, there was a period there when I was hyperventilating from all of the excitement, or whatever.

And I do recall sitting down on a piece of the wreckage trying to get my breath. It was about that time that someone was calling, "They're over here; they're alive." And they were talking over at the troop compartment area. Just prior to that I remember looking, getting out of the wreckage, and looking at what I thought looked behind us, thinking that is where the troop compartment would be with all of the kids on board, and all I could see in back of us was a giant ball of fire.

I do remember some sickening feeling thinking that no one got out, at which time I walked around the wreckage of the flight station area, and kind of got my breath or whatever, and that is when someone made the statement the troop compartment was intact, seemingly in front of us.

I remember becoming very confused as to how the troop compartment somehow got in front of us. At the time we did not realize that not only had we rolled upside down, but we had also turned back and we were pointing in the direction we had come from.

Q You mentioned a ball of flame; how far away from the flight deck area where you were was that?

A I would estimate about 150 yards from the flight station area itself.

Q And you mentioned that the troop compartment was

intact. How far away from you was that?

A I would say about 40 yards, something in that neighborhood.

Q Could you tell us how far -- or estimate how far -- the troop compartment was away from this ball of flame?

A Well, it was farther away from the fire than the flight station was. I would say something in excess of 150 -- maybe 170 yards.

Q Now you mentioned somebody said it was intact. What did you do then after you heard that?

A Well, everybody went running or walking, or however we could manage to make it through the bog -- the footing was very treacherous -- we made it over to the troop compartment. By the time I got there, the door was being opened to the troop compartment, one of the side doors, and there was a momentary pause, at which time they began to hand the babies out. And I positioned myself by one of the crew members and began to assist in off-loading the children.

Q Now, over near the troop compartment, did you observe any flames in that area?

A No, sir, I did not.

Q And did you observe either in the troop compartment or in your area, the flight deck, any fumes, kerosene, or

anything like that?

A No, I did not.

Q Did you observe any of the children who were taken out of the troop compartment?

A I physically handed out, I would say, a majority of the kids. I can't give you the exact number. But, of the ones that I saw, I didn't see anybody that was hurt in any way. They were all pretty much crying, and, by crying, I mean fussy, not crying. I didn't see any marks or scratches on the ones I either off-loaded or carried later on to the helicopters.

Q You said they were crying and kind of fussy?

A Right. It was like when you disturb a baby, you wake him up or something.

Q Now, did there come a time when these children were evacuated from that area? Were you there at that time?

A Yes, I was.

Q Would you describe that for us?

A As I recall, the helicopters were there shortly after the crash. I would say somewhere less than five minutes, at which time -- by the time the helicopters were arriving, we had children laying on the ground. And we thought it might be better if we started moving the children who were laying on the ground and start taking them

over to the helicopters. When a helicopter got a load, they would take off and another helicopter would come in.

Q Now, did you lose consciousness at anytime during any of this procedure?

A No, I did not.

Q And did you record your reflections in some way in a statement sometime after the accident?

A Yes, I did. As I recall, it was sometime in May I gave a sworn statement to Col. Wacstein (phonetic), at Travis. As I recall, he was a member of the accident board -- he was somehow associated with the accident board. I gave it to him.

MR. DUBUC: Your witness.

CROSS-EXAMINATION

BY MR. LEWIS:

Q As I understand it, sir, you had an airplane that was working very poorly mechanically; is that right?

A Yes, sir.

Q It didn't work at all the way it did when you left Saigon; isn't that right?

A That's correct.

Q I just want -- and forgive me if I am not an experienced airman -- but I want to understand what control you had over the airplane and what control you didn't have.

An airplane, the back end of an airplane --

MR. LEWIS: Mr. Marshal, would you put -- would you mind putting that diagram up there for me, please? I will help you.

(The deputy marshal complied)

BY MR. LEWIS:

Q That does look like a cut-away version of a C-5-A, doesn't it?

A Yes, it does.

Q Now, the back end of the airplane, which we laymen call the tail, is a word they call an empennage; is that right?

A Yes, sir.

Q And that is the part of the airplane that makes it turn, in general terms, to the right, to the left, and up and down; isn't that right?

A Well, the empennage only controls up and down. The ailerons control turning left and right.

Q What does the rudder do?

A The rudders also control the left or right, used in the yaw axis. Sometimes when you make a coordinated turn, you have to use a little rudder to help turn.

Q All right.

Let me come over there, if I may, and point to sections and ask you whether, after this explosive decompression, what parts of the airplane you had control

over.

(At the diagram)

BY MR. LEWIS:

Q What do you call this part here? (pointing)

A That is the empannage.

Q And this part?

A The elevators.

Q Did the elevators work on your airplane after that explosive decompression?

A They did not.

Q All right. This part here (pointing) is a rudder, I gather; like a rudder on a ship; is that right?

A As far as I know. I am not familiar with ships.

Q Did that work?

A No, it did not.

Q All right, now, this yellow thing here, that was the pressure door that was designed to keep the inside of the airplane at the same pressure as the outside; is that right?

A That is correct.

Q And after this loud explosion that you heard, that actually tore away and left that airplane, didn't it?

A At the time I did not know that. I was told later.

Q And the ramp, the part here (pointing); that also

had gone too; isn't that right?

A That is correct.

Q So, actually, there was an enormous big hold in the back of this airplane after that decompression; isn't that right?

A That's true.

Q And it was open as far as the construction of the airplane throughout the cargo compartment; is that right?

A That's true. Again, I don't know it firsthand; but, from talking with everyone, that is true.

Q Well, you have been on a C-5-A?

A Yes.

Q And it is all one big room, isn't it?

A Yes, sir, it is.

Q When this door comes off the room, the room is open to the outside air? That is all I am trying to say.

A From the back end.

Q From the back end.

Now, there is a ladder that goes up, a stairwell, in effect, that goes up to the troop compartment, which is right here (pointing); is that right?

A That is correct.

Q And there is also a grating that allows the pressure to equalize between the two chambers; isn't that

right?

A Yes, sir.

Q So the pressure--

A It is not really a grating as such. It is called a negative flapper. I am not sure of the exact term.

Q Well, if I saw one on the street, it would look like a grating I would see on the street; isn't it?

A No, not really. It would be more like a flapper door.

Q All right. It allows the pressure to equalize between these two compartments; doesn't it?

A That's true.

Q That and the stairwell?

A Right.

Q And no missile hit your airplane, did it?

A As far as we know, no.

Q The airplane just broke off; isn't that right?

A That's correct; the back end.

Q The back end just broke off while you were over the ocean?

A That's correct.

Q And you were about 23,400 feet, roughly; is that right?

A Roughly.

Q And when that broke off, the temperature outside

would have been about minus 24 degrees Fahrenheit, wouldn't it?

A I am not sure of the temperature.

Q But it would have been very cold, wouldn't it?

A Right.

Q Well below zero?

A I would say so, yes.

Q And this was an explosive decompression that occurred in less than a third of a second; didn't it?

A That's true.

Q And when that happens, this door and this back end of the airplane is completely open to allow the cold air or whatever co come in if it wants to come in, won't it?

A Right.

Q There is nothing to keep the cold air from coming in that back door?

A Well, it's not really a rush in. Maybe I misunderstand your question. Air can come in, but it is not going to rush in.

Q All right. Well, the inside of this airplane was pressurized; wasn't it?

A That's correct.

Q Now, I understand that the pressure difference between the inside and the outside of this airplane was about six and a half pounds; so that means that the pressure, as I understand it, inside the airplane was much

greater all over the human body than it was outside. Does that sound reasonable to you?

A As pilots, we don't really discuss pressure. We talk about altitudes, and it was roughly 5,000 feet and the outside air was 23,000 feet.

Q Well, is it fair to say your cabin altitude was at 5,000 feet, about the heighth of Denver.

A Right.

Q If you and I went to Denver, it would be like we were standing on the street in Denver?

A Right.

Q But, outside, there was much less pressure, out here where it was cold; is that right, sir?

A That's right.

Q Now, actually, when the air swept -- rushed out of that airplane, it actually blew one of your crew members actually out of that airplane and into the ocean; didn't it?

A I don't know that for a fact. I was told that later. I had no knowledge of it at the time.

Q But that is one of the things that happened in the accident, isn't it?

A That is what we were told afterwards, yes, sir.

Q And the air would have rushed out in that third of a second, wouldn't it?

A That is true.

Q So that meant the whole airplane equalized the pressure inside and out, and the difference rushed out at a high rate of speed; isn't that right?

A That's correct.

Q Now, we don't have the wings here, but I gather they go right here (pointing), sticking out like this? Is that right?

A That's close enough; yes, sir.

Q Now, how many controls do you ordinarily have on the C-5-A on the wings when they're working right?

A We have the ailerons, which control the turning of the aircraft.

Q All right.

A We also have flaps, which are on the trailing edge of the wing, and we have the slats on the leading end of the wing, and we have what we call "ground spoilers", and those are the ground functions to slow the aircraft down upon landing.

Q All right.

Now, they are all controlled by what is called the hydraulic system; isn't that right?

A That's correct.

Q And that is through oil or some oily-like liquid going through a --

A Through the hydraulic system.

Q When that door came off, it damaged those lines; didn't it?

A That is correct.

Q And that was the reason that your tail surfaces and many of your wing functions didn't work; isn't that right?

A Well, not totally. From what I understand afterwards, at the time we weren't sure exactly why everything wasn't working. Apparently what happened, when the back end blew out it severed the cables -- the flight control cables -- leading to the elevators.

The ailerons were affected by the loss of the hydraulic system as well as the alternate -- we have means of trimming the tail, using a trim motor back on the tail that use hydraulic systems. And the fact we lost those two hydraulic systems, we didn't have any means of actually trimming or positioning the tail the way we wanted to.

Q There are two kinds of controls then that go to the tail section. One is a wire cable and the other is a tube with hydraulic fluid in it; is that correct?

A Right.

Q And the cables were damaged by the door blowing off; isn't that right?

A That's true.

Q And then the hydraulic lines had a leak in them; is that right, by being cut?

A I don't know if it was a leak or if they were completely severed. We lost the system.

Q The point is there was no longer power in that line?

A That's correct.

Q How many control surfaces that you described in the wings were left after this happened?

A I don't remember what systems power, you know, what remained, but we had the right aileron, as I recall. Two of the four systems were out of the way. We did have the number 4 hydraulic system. So we did have half power to the right aileron. We had partial flaps, and we did have some of the spoilers. I can't give you a breakdown.

Q But you had only a tiny percentage of equipment necessary to control that monster airplane; isn't that true?

A That's correct.

Q Now, when that originally happened, the airplane went into a dive, you told us; is that correct'

A A dive or rapid descent; it's the same thing.

Q And either you or the pilot gave that airplane full power which brought it up; isn't that right?

A That's correct.

Q So that was sort of a swoop and then coming up?

A Well, when you say it originally went into a dive; originally, it was a slow descent in making the turn back. It rapidly increased into a dive. So, it didn't go into a dive right off.

Q Okay. I want you to correct me if I misstate it. But, essentially, it went into a turn and then into a dive. You gave it all the power it had, and that airplane has an enormous amount of power, doesn't it?

A Yes.

Q And it was lightly loaded, wasn't it?

A That's correct. The only load we had on board was children.

Q And, ordinarily, it will hold tons and tons of very, very heavy equipment, won't it?

A That's correct.

Q So the airplane had ample power, if nothing else?

A That's correct.

Q Can you tell us the power of each one of those enormous engines?

A As I recall, they were rated at 38,800 pounds pounds. That is approximate. I t has been two years since I have flown a C-5-A.

Q That's a huge aircraft engine, isn't it?

A Yes, it is.

Q And there were four of them?

A That is correct.

Q And you may not have translated this into horsepower, but is there any way we could get some idea how many horsepower those engines have?

A I have no idea.

Q But it had to be in the hundreds of thousands, didn't it?

A Again, I really couldn't say. We talk strictly in terms of pounds of thrust.

Q Now, the wings of this aircraft are really one big vat, for all practical purposes, a fuel tank, is that right?

A That is correct. As I recall, between both wings there are 12 fuel tanks.

Q And how many gallons -- and I know you may not have this memorized -- can you give me some rough idea of the amount of fuel in those wings?

A As I recall, there are approximately 9,000 pounds in the tanks. We did have enough gas to land at Saigon without refuelling and fly back. So, it is somewhere in the neighborhood of 9,000 pounds.

Q The airplane will hold enough fuel to fly from Clark Air Force Base to Vietnam and to fly all the way

back?

A Actually, it will hold more than that. As I recall, it held 318,000 pounds of fuel.

Q So, if we take 90,000 pounds -- how many pounds is a gallon of jet fuel? Is it roughly 6 or 7?

A Between 6 and 7 in the conversion.

Q So, if we want to know how many gallons, we take 9,000 and divide it by six and a half?

A Right.

Q Now, this area here would be the troop compartment where the smallest babies were; is that right?

A Again, I don't know that firsthand. I didn't assist in the on-loading. A majority of them were.

Q Were any of the children ever put at anytime before the airplane crashed in the crew quarters up forward?

A No, sir, they weren't.

Q There was a way to get up there after the decompression, wasn't there?

A To get up there from the cargo compartment. But as far as the younger kids in the troop compartment, the ladder had gone.

Q That ladder had gone.

Did you get a report that people had been killed immediately or gone overboard when the decompression

occurred? Did someone call up to tell you on the intercom?

A No, sir, not that I recall. There were only two reports of injury throughout the aircraft, and that was Sgt. Perkins, who was standing on the ladder. He was standing on the ladder when it broke away. And one of the medical crew members was at the base of the flight station. He was somehow injured during the rapid decompression.

Q Now, then this big area here is the cargo compartment, and the baggage was all loaded in the back; is that your understanding?

A The flight baggage was loaded in the bunk areas. We physically took that, once we were on the ground in Saigon, we took the crew baggage and put it in the bunk areas to provide ample space downstairs.

Q What about all of the hundreds of passengers; where did their baggage go?

A Probably pretty close to where you have it depicted there. I think it was somewhere towards the back of the aircraft.

Again, I didn't see it loaded, so I can't say.

Q Now, you know what a MADAR tape is -- and I know you do.

A Yes. I don't remember exactly what all the letters stand for, but it is a maintenance detection to tell us if anything is going wrong with the airplane.

Q Let me show you the part of that MADAR tape, if I may, Captain.

MR. DUBUC: Does it have an exhibit number?

MR. LEWIS: If it does, I just don't remember it, but I will identify it. It's the MADAR tape.

I am sorry, excuse me, Captain. It is D-43 in evidence.

MR. DUBUC: All right. I have it.

BY MR. LEWIS:

Q Now, incidentally, would the MADAR show the G forces? Would that record the G forces on the airplane?

A As far as I recall, it does.

Q Look at that particular part, that is only part of it. It is a very complicated tape, isn't it?

A Yes, it is.

Q Now, you see in the decompression, I gather, started at 51300, station 51300; do you see that?

A I am sorry?

Q Do you see 51300?

A Right.

Q And that just takes readings ever so often; it is not a continuous reading, is it?

A As far as I recall, it was a periodic reading from different locations throughout the aircraft.

Q Now, that particular periodic reading at 51300

shows the altitude of 22,868 feet and some fraction; isn't that right?

A That's correct.

Q And then the next reading is 23,423 feet and some fraction. I am, with your permission, leave out the fractions of feet. And that has another station reading of 51329; isn't that correct?

A Not on mine. It goes from 28868 to 22979.

Q Would you turn to Station 51329, which is at an altitude of 23,423 feet and some fraction. Do you see that?

A It is a couple pages over.

Q All right. And then that would be -- I have calculated, and I just want to go over these with you. I appreciate that you are looking at this cold. But counsel was asking you about time that you were in the air and when you did this and when you did that. I want to check these altitudes with you because that is the best source of what the altitude was at any given time; isn't that right?

A As far as I know; either that or personal observations.

Q Well, that's supposed to be accurate anyway; isn't it?

A It is supposed to be accurate.

Q And the way you check the time, there are different time intervals between each one of the reading points; isn't that correct?

A As far as I know, the MADAR system was really an engineer system, and we didn't get involved in that.

Q It doesn't have a clock, as such; it has different stations, and you know long it takes to go from station to station; that's the way it's supposed to operate, isn't it?

A Again, I really don't know.

Q All right. Let me ask you this: According to that tape, by my calculations, and I am not an expert, there is an altitude of 15,202 feet and some fraction. I calculate that the airplane didn't reach the 15,202 feet until after 5.04 minutes. Would you disagree with that?

A I said three or four minutes, and that is based strictly on just a rough guess. I was basing that on 15 minutes until the crash landing. So it's really hard to pin down the time.

Q I know it is. That that is why I am trying to help you. But if the MADAR tape said it was a little over 5 minutes, you wouldn't dispute that, would you?

A Again, it seemed like a shorter time to me.

Q I understand.

Well, the MADAR machine was made by the same people that made the airplane; isn't that right?

A Yes.

Q And who made that airplane?

A Lockheed.

MR. LEWIS: Your Honor, I would like to show the witness a photograph, Exhibit 21, which is not now in evidence. I want to ask him some questions about that, if I may.

THE COURT: Very well.

MR. LEWIS: May I show it to the Court so I can make sure.

MR. DUBUC: Excuse me, Your Honor.

THE COURT: That's not going into evidence. Exhibit 21. It is not going to be admitted.

MR. DUBUC: If it is not going in, Your Honor, I question the reason for showing it.

THE COURT: He can look at it and give it back.

BY MR. LEWIS:

Q Have you seen it?

A Yes, sir, I have.

MR. LEWIS: May I ask him if it is a fair representation?

THE WITNESS: I really--

MR. LEWIS: No, no, I'm not asking for an answer.

THE COURT: Come up.

(Whereupon, the following took place at the bench outside the hearing of the jury:)

MR. DUBUC: I object, Your Honor. You have ruled on it. The other objection, he, obviously, is not familiar with the MADAR tape. Mr. Lewis; computation was not correct. I object to this exhibit.

THE COURT: The exhibit wasn't correct.

MR. DUBUC: There is no question about it. The computation five and five and a quarter minutes--

THE COURT: The tape--

MR. DUBUC: Four minutes and 35 seconds.

THE COURT: You will have to straighten that out on redirect. I was going to adjourn at three.

MR. LEWIS: I am ready to adjourn, Your Honor.

THE COURT: How much more do you have?

MR. LEWIS: Not much.

THE COURT: I am going to take that exhibit out. We are playing with fire here. I don't know what is wrong with it. I have ruled on it, and that is the way this case has been tried.

(Whereupon, the following took place in open court:)

BY MR.LEWIS:

Q Now, following the accident, when you got out of the airplane, you expected or you thought everybody was dead; didn't you?

A As far as everybody other than what was in the flight station, yes, sir.

Q Because of the events of the crash, you came to that conclusion before you actually knew there were more survivors; isn't that so?

A There was a point there where I thought some would get out. I didn't think we up front would be lucky enough to get out. I had that feeling until I saw what I thought was the troop compartment engulfed in flames. As it turned out, it was the wings and engine. So when I saw that, I had lost hope for everybody else on board the aircraft.

Q Now, the 270 knots is far from a normal speed for landing; isn't that correct?

A Yes, it is.

Q And the second impact was extremely rough, and everything went blank inside; didn't it?

A Went black. We lost the electrical power. The mud was coming up on the windshield, and it was getting dark inside.

Q Didn't you say in your deposition, sir, that

everything went blanc inside -- B-L-A-N-C?

A I will have to look at it and see.

Q Well, let me read it to you. I want to be fair.

THE COURT: Just a minute, if he can see the page.

MR. DUBUC: Do you have a copy?

MR. LEWIS: I will be happy to.

(Counsel handing document to the witness.)

BY MR. LEWIS:

Q This will be on page 54, Captain and Counsel. Now, you see, sir, down on page 54, line 21; do you see, Captain, the numbers down the side of the page?

A Yes, sir.

Q The question was: "How would you describe the second impact?

"Answer: Certainly, no doubt, that was an impact. It was extremely rough. Everything went blanc (sic) inside. We lost all power. Mud was flying up on the windshield. There was no doubt that was an impact." Did you say that?

A Yes.

Q Now, what kind -- did you hear any noise when the nose broke off, the flight deck broke completely off?

A About the only noise I recall hearing was the sliding. You could actually both hear and feel, in our area anyway, sliding through the bog or the swamp, the

rice paddy, or whatever you call it.

Q Well, that was an extremely strong and heavily built airplane, wasn't it?

A As far as I know, it was.

Q And the tail broke off at the second impact?

A Yes, sir.

Q And the wings broke off on the second impact?

A Right.

Q And when the wings broke off, the hull, the troop compartment was still with the airplane, wasn't it?

A The troop compartment?

Q Yes, when the wings started to crack.

A I'm not aware of that. I mean, again, I can't offer any firsthand information as to how it broke up. I just saw the wreckage after the actual break-up.

Q And the nose or the flight deck was very firmly attached to that airplane, wasn't it?

A As far as I know, it was.

Q Well, Captain, did it make any noise at all when it broke off the airplane?

A I personally didn't hear it. The only noise that I heard at the time was the sliding through the mud.

Q Did you hear any noise when the wings broke off?

A I didn't hear it.

Q Did you hear any noise when the tail broke off?

A No, sir, I didn't.

Q Did you hear any noise when it hit the ground and disintegrated?

A Not that I can recall at the time. I wasn't, you know, listening for that in particular. I just didn't hear it.

Q A lot of metal was just literally torn apart; isn't that true from your observation of those pieces?

A It surely was.

Q It was the sort of situation you would ordinarily expect with common sense to be noisy, wouldn't it?

A That may be the case.

Q But you just didn't hear it?

A I didn't hear it.

Q Is it possible that you were momentarily stunned when you hit the ground that second impact?

A Not that I know of. I recall coming to the stop. I recall getting out of the seat. If you want to use the word "stunned", the only time I might consider that was the time I was hyperventilating after I got out of the wreckage.

Q When you got out of the wreckage, you had to sit down. You were very shaken, weren't you?

A Yes, as far as I could tell, I was.

Q You were very frightened, weren't you?

A I don't know if I would use the word "frightened". I think excited might be a good word, but I wouldn't say frightened.

Q Well, you were in a state of shock, weren't you?

A Again, I couldn't pass any kind of judgment that I was in a state of shock. I have never been in a state of shock, so I really couldn't say that.

Q Well, describe, as good as you can, when you got out of the airplane, your reaction. Just tell us physically how you felt.

A As far as I can recall, I do recall having a hard time walking, which, initially, I thought it was just the bad footing that we had in the swamp area. I do recall walking around the wreckage area. And I sat down on part of the wreckage. I could hear myself breathing deeply and rapidly and that is when I actually sat down on the wreckage trying to get my breath.

Q Well, didn't you say in your deposition that you were in a state of shock?

A I did say "state of shock". I am not saying in a medical state of shock. To me that is a description. I am not talking about medical state of shock. I just felt bad when I looked back and saw what I thought was the troop compartment.

Q At first you didn't even realize your ankles

were sprained, did you?

A I knew they were hurting. I didn't know that they were sprained or what was wrong with them.

Q Were you at a meeting that took place last Sunday where the witnesses, the military people and the air nurses got together in Mr. Dubuc's office?

A Yes, sir, I was. I don't know whose office it was, but I was at somebody's office.

Q Was Mr. Dubuc, the gentleman here, (pointing) there?

A Yes, he was.

Q And the gentleman next to him, Mr. Jones, was he there?

A He was, as I recall, in and out.

Q All right. How long did the meeting take place?

A As I recall, it was approximately maybe three to four hours, something like that.

Q Now, who do you remember being there?

A Mr. Piper was there.

Q Who is he?

A He is, as far as I know, he is the attorney representing the government or whatever, sort of like our counsel. He is the man who is our contact in the military, the people that we work with. He is the one who called us

out here; he accompanied us over to the deposition a month or so ago.

Q Who else was there ?

A As far as I recall, between the two gentlemen seated at the table, it was just the flight crew.

Q Who in the flight crew was there?

A Major Malone was there, myself, Captain Aune.

Q That was the nurse in charge of the flight nurses?

A Yes. Captain Goffinet.

Q Another flight nurse.

A Another nurse. Captain Tate, Marcie Tate was there. And, as I recall, I think her husband was either there at the meeting or he brought her to the meeting. I believe that is all that were at the meeting.

Q Are you positive that is all that was at the meeting?

A Mr. Piper was there. I don't know if I said him. I am trying to go around the table.

Q Were any doctors there?

A Dr. Stark was there. And, as far as I can recall, that's about it.

Q Were all the flight nurses that lived, were they all there?

A As far as I know, they were.

Q And all the flight crew that lived; were they all there?

A No, they were not.

Q Who was missing?

A Captain Traynor, the aircraft commander, was not there. Several load masters were not there; two of the engineers were not there; two of the navigators were not there. I can't give you an exact number.

Q What did Mr. Dubuc say at that meeting in the beginning?

A Basically, I guess it was our introduction to him. Ihad never met the man before that. And Mr. Piper called us over there and we met with him. Basically, he just wanted us to try to run through what we remember from the accident. He was trying to recreate it, I guess.

Q And did each of you help the other remember what happened?

A No, I don't think so. We would each tell our own little story and that would maybe trigger something else in somebody's memory or something like that, and somebody would expound on it a little bit farther.

Q And everybody sat around a table, or was it in chairs?

A We were sitting in chairs around the table.

Q Did everybody tell his story?

A At one time or another, I am sure they did.

Q Were any questions asked by anybody?

A By who in particular? Do you mean us?

Q All of you.

A Yes, there were questions.

Q And answers given?

A Yes, they were.

Q Were notes taken?

A I believe they were.

Q Did you see anybody, a clerical person taking notes of the conversation?

A I don't recall it. I don't think there was anybody taking notes. I think between Mr. Piper and Mr. Dubuc they were the only ones taking notes that I know of.

MR. LEWIS: Thank you. That's all the questions I have, Your Honor.

THE COURT: Any redirect?

MR. DUBUC: No redirect.

THE COURT: Th a nk you, Captain. You are excused.

(Witness excused)

THE COURT: Ladies and gentlemen, we are going to adjourn at this time for the weekend. I remind you, don't talk about the case, even though it might be fun to