Lt. Colonel Steve Brown, Vietnam Veteran, Pilot

I served in the Air Force from 1968-1991 twenty-three years as a pilot. I joined the Air Force, primarily to avoid the draft. Nothing against the military, just didn't want to carry a rifle in the rice paddies during the height of the Vietnam conflict. I was a high school band director at the time. The draft board sent me a letter saying get ready. So I went to see my Air Force recruiter who it turned out gave me some great advice. He said go take some flight instruction classes. He said, this won't make you a pilot, but it will help you on your aptitude test because we're only taking pilots right now. Sure enough, that 4-5 hours in that little "tail dragger" helped me throughout my career. A tail dragger, if you can imagine, is like taking a shopping cart and pushing it backwards. You give it a push and it goes straight a short distance and spins around. When a plane spins like this, it's called a tail loop. A tail dragger, as any pilot knows is squirrely on the ground. That four hours in the Aeronca Champ (a single-engine light airplane with a high wing) nicknamed "airknocker" taught me how to control a tail dragger. A B52 is a big, big version of a tail dragger. And the U2, although a jet is also a tail dragger.

I was accepted to pilot training and sent to Lackland Air Force Base. We were called 90-day wonders. It was a kind of basic training. A little easier than the other recruits experience. I came out a Second Lieutenant. I then reported to Vance Air Force Base in Oklahoma for one year of pilot training. It was a fairly intensive training course where you go through all kind of aircraft. Small propeller airplanes, then intermediate jets, then the T38 Talon supersonic training jet. Once you are out of pilot training you are assigned to an actual Air Force line aircraft. I got the Caribou which was technically a DE Haviland CTA Cargo transport. Flying a Caribou was a great experience for a new lieutenant pilot. We could go and land the Caribou in wide spots in the road and runways less than 1000 feet. If you wanted to really push the limit on a short field, you could land it in just about 400 feet.

We could carry the equivalent of two jeeps, or 40 American combat troops, or 25 cows so it's a pretty substantial cargo load. The Caribou missions were very interesting. We would haul anything from ammunition, re-supply equipment, fuel, ice cream, mail, troops. It was a general cargo airplane that carried a bigger payload than a helicopter and yet it could land in a spot not much bigger than the copter uses. Here's an example of what we would haul. We would supply food to the Vietnamese people in villages. We had a program called Vietnamization of the battleground. Most indigenous Vietnamese people did not like frozen food. They liked to see their food live. Therefore we hauled in live cows, pigs and ducks.

One example of what we hauled, typifies the glamour of aviation. We had been out delivering some food. We had a full load with 2 cows, 3 pigs and a basket of ducks. A basket would be about an 8' woven thing they cinched down with cargo straps. We also had a big pallet, with

a basket of cabbages. We were in flight and I look back and see this basket of ducks come open. The ducks are getting out of their cage. We are at about 3000 feet, it's stifling hot, we're sweaty, covered in dust and the ducks are moving forward towards the cockpit. They are in a panic. The just want to get out of there. There is lots of noise and they are obviously frightened. They come into the cockpit. There is feather, blood, duck crap all over everything in the cockpit. In the Caribou, you fly with the back door (ramp) and the cockpit windows open. You are only flying about 120 miles per hour. I tell my co-pilot, let's get these guys out of here. We just started throwing ducks out the side windows. Some are hitting the propellers. There was blood and guts all over the plane. The cows crapped the whole time the engines were running because they were scared of the airplane rightfully so because they were going to get thrown out of the back of the airplane. We finally land. We had been tarred and feathered. The cabbage were full of inch worms and they were frothing like Champaign bubbles only a million times more concentrated. The airplane was a mess. What do you do in a situation like that? A mess in the back of the plane? You call the fire department. They hand you the hose through the cockpit window, you turn around and spray out the back of the airplane and you move on to another load. Helpfully not another load of cows and ducks. It was an interesting flight and that went on all the time.

Sometimes we were asked to do vital missions. Often, we'd go to these little outpost or artillery bases to resupply or we'd evacuate troops. They'd be really happy to see us. I had one mission at night. There was a thing in the Air Force called a "Tailpipe." It's a jeep with about 50 radios and two guys in it. They were caught out in the wrong part of the country after dark. They called us, we landed, drove the jeep into the Caribou and away we went. They of course bought lots of drinks that night. It was an interesting evening.

The caribou assignment, as was most Vietnam assignments, was a one-year assignment. There were times during that one-year assignment you got to go Hong Kong or Australia or maybe a week home to the states but is was essentially a one-year assignment. I went home with almost 1200 command pilot time. There is hardly any other airplane I could have been assigned to have got that much time.

After that you could look forward to another assignment to another Air Force airplane. As it turned out, my assignment was two model tankers a KC135 an aerial refueling airplane. This was really a great airplane because at the time they were flying major airline aircraft and to get a type rating in a Boeing 707 aircraft was a great deal. The Q model supported the SR71 which meant they only carried a special fuel and they only went to Spain and Okinawa for their deployments. This was great, no alerts I thought. Well, I get to Castle Air Force base for the training for these tankers takes place and they say ah, you're on the list you're going to B52's.

My world took a rapid veer to a different direction. I was assigned to B52's which interesting enough it's still a front-line bomber today. I just read in the newspaper this morning (June 2019) they are deploying B52's to the Middle East. They have been upgraded in engine, armaments and electronic capability but nevertheless the B52 which the designator is from the first year it flew – 1952 - they are still flying today. I was assigned to B52's and as soon as I checked out, I'm shipped off to Guam.

We flew from Guam in support of the Vietnam war, counted as another Vietnam tour. Most of our missions in Vietnam were from Guam and were 12-hour missions You may have heard the term "Rolling Thunder "or "Arc Life." Three B52's in a formation would drop a whole lot of bombs and to the guys on the ground it was a welcome sight to call in the B52's.

One of the more interesting things I did in the B52's occurred on the 18th of December 1972. There was an operation called "Linebacker 2." A very dramatic scene occurred on the night of the 18th December in our briefing room on Guam. Usually for a pre-mission briefing we'd have 8-10 crews, on the night of the 18th it was full. There was a SAC (Strategic Air Command) General that had flown in from Omaha that did the briefing. We knew something was up but didn't know what it was. A hush falls over the room, and the General says, "Gentlemen, your target for tonight." The curtains parted and there was a big bullseye painted on a map of Hanoi. We said, "ah we're going downtown. At last we're going to take the war to those commies (communist) where they live."

Negotiations for peace talks had bogged down, President Nixon ordered the bombing of Hanoi. This was a big deal because we had pretty much been hands off in bombing or attacking the North in any way. The concentration of B52's and all aircraft was a major event. That was an operation that involved more than a 150 B52's from Guam, Okinawa and Thailand. They all ended up in Hanoi dropping bombs which was frankly overdue. It went on for 11 days from December 18th 1972. We flew from Guam. Unfortunately the planning for that mission, the people at Strategic Air Command Headquarters for some reason filed a flight plan so the people with the missiles and the antiaircraft weapons that were trying to shoot us down, knew we were coming knew where we were going .

The 18th of December when we get to the target, it was an undercast (clouds below the planes) night. We get a SAM launch (Surface to Air missile). They were radar guided and one of the biggest threats we faced up there. We did have some electronic counter measures on the airplane. You could see a SAM launch with a flash of orange flame under the cloud layer and as the missile broke through the clouds, you could see the trail and we would move the B52 – we called it "jinking" (sudden, rapid change in the aircraft's flight path). We would move it a bit and if the missile held still on your windshield you knew he had you locked on. So as soon as the missile started veering up from the windshield you could ignore him and move on, he had lost your radar contact. I counted 26 SAM missiles from the time we got on the initial bomb run for the target that first night till we actually dropped our bombs. A B52 had a crew of six. We have two pilots, a navigator, a radar navigator who was essentially the bombardier, we

had an electronic warfare officer and a gunner. The B52 had four .50 caliber guns in the tail so it's lethal from the back. The bombardier or what we call the radar navigator would get us to the target, find the target, drop the bombs. After dropping the bombs, we completed a massive, very steep turn back to Thailand and back home to Guam. It was an 18-hour mission on that particular night. We lost 16 airplanes in that 11 days. To lose that many airplanes was pretty concentrated, a tragic loss.

We flew probably every third day during those eleven days. Fortunately the tactics planners got a little smarter. The initial tactics were to fly over the target….It looked like a trail of ants one after another in a single file and that turned out to be easy for the North Vietnamese to shoot us down. They could figure out where we were going to be, figure out our altitude and that's one reason we lost a lot of B52's. After that third day, they regrouped for the planning and the B52's went out and held at various areas and at a given time they all came across the target at the same time making easier to defend, easier to make successful bombing runs. Much harder to plan, but never the less it was a success. We were very aware we had American prisoners of war on the ground. We also knew there was hospitals, nurseries schools nearby. We had very specific military targets. It was not in any way a carpet bombing (mass payloads dropped over a widespread area) as sometimes I have heard it referred to. It was a very precise bombing effort. We hit railroad yards, radio stations and fuel storage yards. There were no deviations.

And as it turned out, after that 11 days surge, where the B52's dropped bombs in North Vietnam, Henry Kissinger was embarrassed, the peace talks were back on and shortly after that they negotiated some terms and most of the troops started home. In fact, I talked to some POW's later, and they were celebrating, they knew we were going to be accurate, they ran out into the courtyard and cheered and said, ah ha and we're going to go home at last because they are finally coming up North to do the bombing runs.

We unfortunately stayed in Guam flying practice missions through the next August of 73. The war was on a downward spiral, and shortly after that the POW's were released. There were some POW's that had been there for 6-7 years in terrible conditions. There were some of our B52 force that had been captured. I talked to a POW, he said, it doesn't matter one day or ten years, when you are a prisoner it's a dismal, fearful life. Most of the B52 guys that were captured were released after a month.

After the B52 raids and my Vietnam participation I went to Beale Air Force Base where I progressed up to squadron instructor pilot. We flew training missions. We "sat alert." There was a time period in the B52 they had a submarine threat which meant the off-shore missile threat from Soviet submarines were only seconds away from a B52 base that was near the coast. I was based in California. We had what we called auxiliary alert at Hill Air Force base, Utah. This gave you a few more seconds. The prospect of alert, when you "set alert" with nuclear weapons, you know where each one of those weapons is going to go. Your target study, you knew the route in, you knew the route out, you knew the secondary targets.

"Some of the hard things to accept when you first start sitting alert, or flying B52's with nuclear weapons, you would have curtains that you would close in all the cockpits. These curtains were anti-radiation and you'd wear an eyepatch. So if you looked at an incoming B52 raid and a weapon went off in your sight range it'd blind you in the uncovered eye. This is kind of bizarre when you watch a movie with a doomsday theme. We'd take off with an eye patch so if we went blind in the other eye, we could remove the patch and still fly with one eye. It was an amazing concept. I never took it that we were really going to ever fly these missions but never the less we were trained and briefed to do that. We offered a deterrent . We wore the eyepatch, closed the cockpit curtains, and we had the codes that authorized us to go to certain targets. It was a bizarre world in those days. Had we gone to nuclear war it would have been total devastation worldwide. We had the process, we had the procedures and were ready to go."

After about five years in the B52's and training missions, I had a staff job. Sooner or later everyone must take a staff job. After that, I was talking to personnel people and I was given my choice of a B52 assignment in "garden spots" such as North Dakota, Maine or upper Michigan. Much of my career was avoidance. You may recall I wanted to avoid the Army, so I joined the Air Force. At this point of my career, I wanted to avoid North Dakota. I did not like cold weather. A senior friend said, "you need to get in the U2. They have more fun, it's a comradery, it's wonderful. So I pursued that. I volunteered for the U2 spy plane, lucked out and was assigned to the U2 program. It's an all-volunteer job. You have to be an experienced senior pilot to get an interview. The interview to fly the U2 was a two-week process. You go to Beale Air Force base, you talk to all the people that do the training, wing commander, all the people that run the U2 program locally and then you fly the airplane.

At the time, they had a two-seat trainer, you would get in with an instructor and physically try to land the airplane. You didn't have to fly it, take a check ride, you didn't have to know all the oil limitations, oil pressure limitations you just had to prove you could land this thing. For the U2 the trickiest part is landing it. They just wanted to know, can you land this thing. The U2 had a long, wide wingspan.

As I mentioned earlier, the U2 is "tail dragger" which makes it squirrely on the ground. What make it even more complicated, it's a bicycle gear. In other words, all the wheels are right in the middle. A standard airplane is more like a tricycle. You have two stabilizing wheels on each side and a nose wheel. Further complicating the U2, you have one tail wheel and one main wheel. As with a bicycle, if you lean you turn. You have all these forces working against you. You want to keep it in the middle of the runway, wings level so you don't turn. And by the way, if you come in about 3 knots or 4 MPH too fast, it's not going to land. You're going to float to the end of the runway. You must be precisely on speed, precisely in the middle of the runway and stall the airplane at precisely two feet above the ground. That takes a little getting used to, whereas most airplanes have a little more margin of error. But the U2, if you don't do it right, you're not going to land. Once you get past that, flying the airplane is not that tricky. Oh, you do have to wear a pressure suit, a space suit.

If you've seen the pressure suits the astronauts wear when they walk out to the shuttle launch, U2 pilots wear those suits the whole time. The mission in a U2 is 8-12 hours so you are in this pressure suit for quite a while. You put it on about an hour and a half before takeoff. So you're in this pressure suit about 10-12 hours. The reason for the pressure suit was the U2 cockpit was only pressurized to about half. The altitude was above 70,000 feet so the cockpit pressurization was at 35,000 feet. So your body was at 35,000 feet and you would breathe 100% oxygen the whole time. There would be a tight seal around your face, and it was pressurized. You'd have to "pressure breathe." As you and I sit on the surface of the earth, you actively breathe in, relax and it goes out automatically. Pressure breathing is the opposite of that. There is pressure on the air you breathe, you are pumped up and you have to physically squeeze it out. This is so you get oxygen transference in your lungs. There's got to be a minimum pressure, so you can actually respirate. So you are in this suit, you are pressure breathing. People pressure breathing talk funny. They'll be talking along - they are pressurized - and suddenly just run out of air. You can tell when a U2 guy is talking, trying to talk on the on the radio while he's pressure breathing. He'll gasp and presses on because you really have to talk. Never the less you used to it. I could take naps in this thing. I could pressure breathe in my sleep, no big deal. Also the reason you pressurize, the reason you are breathing 100% oxygen is to minimize the probability of the bends. When you take off from the surface of the earth and climb to 70,000 feet you have a rapid release of pressure. Same as a diver in the deep part of the ocean when he comes up, rapid release of pressure, it's like popping the top off a soda bottle. Once you release that pressure suddenly you see the bubbles form. Bubbles forming in your blood is the bends. There are different levels of it, but essentially you get bubbles of nitrogen in your brain and it's fatal. So part of breathing a 100% oxygen with the pressure, the suit, is your life line. You wear the pressure suit, you get used to it, it's a comfortable place to be, it's a whole set of physiology accommodations you get used to.

The first question people ask, when you are in this suit for 12 hours, how about your bodily functions. Well, one is taken care of, the other is not. For the men, keep in mind when I first got into the U2 program there were only male pilots, you wear an attachment called a UCD (urine collection device). It can be described as an industrial strength condom or a milking machine attachment. Never the less it's attached to you and it goes out a tube down your leg into a container in the airplane. That's how you urinate. Getting a perfect fit on that UCD is quite a challenge. You don't want it too small, it's too tight. You've all heard stories of too tight that how they castrate sheep from the farm guys. If it's too loose, it's not going to stay on and you fill your left boot, then fill your right boot and it makes it kind of an uncomfortable day. You're in there for 12 hours. For number two, you just control your diet. Every time we'd go fly, we'd have a high protein, low residue diet. We would avoid foods that would cause gas. If you've got a bubble in your intestine the size of a raisin, as you climb up to 35,000 feet, that bubble expands to the size of a watermelon. That increase in size in your intestine, it's got to go somewhere and if you're not on a low residue diet, then you fill your suit. We did have some guys with trouble with their intestines. You crap your pants and sit in it for twelve hours. That's basically the solution. Fortunately, I never had that problem. We did get some female pilots, they would wear diapers. It was a high-tech, very expensive diaper, they looked like bicycle pants. It's more like bicycle pants, about an inch thick, it's an absorbent material woman wear instead of a UCD.

Back to the U2 program, it was fast, it was an incredible machine they're still flying today. It first flew in 1955 with the A model. We're currently up to the S model which means the engines have been replaced. It went from an old Pratt-Whitney-Chase 75 engine to General Electric engine which is the same engine that is on the B2 Stealth bomber. It's a brand-new engine technically. The big difference is it's 1500 pounds lighter. We've also gone to fiber optics in the U2 which again we got rid of the copper wires and it saved about 1000 pounds. They've gone to glass cockpits, take the round dials out of the airplane and put in computer screens it saved a lot of weight. The difference for a lighter U2 airplane, it goes higher.
The U2 never levels off. You put the engine on the red line and continually climb. As you get lighter burning fuel you get higher and higher. Most of reconnaissance systems are line of sight. Imagine a camera high on a tower or building. You can see farther with the camera. That works the same as most communication radios. The U2 reconnaissance equipment, it's more than just photos. It's photos, radar emission reconnaissance and communications. Those are the three main areas.

The U2 was first decided it was a necessity during the Eisenhower administration when after World War II when the next weapon we knew about was going to be the intercontintinental Ballistic Missile. The Soviets were developing those in missile bases deep in the interior of Russia. This was before satellites and we wanted to know what they were doing. Kelly Johnson an engineer at Lockheed designed the first U2 from an F104 Starfighter basically. He took a very fast fighter jet put bigger wings on it, modified the engine and that became the first U2. Within six months after being given the go ahead by defense department under Eisenhower, Kelly Johnson developed an airplane which became the U2. It's first flight was in 1955. We're up to the S model, the last U2 was built however in about 1997. So it's relatively a brand-new Air Force airplane but it's still called the U2. It's got a lot of tradition. We call it the Dragon Lady a nickname from the Steve Canyon lovely lady who always wore a black silk, tight dress. Somehow, we always thought the U2 aircraft looked like a beautiful woman in a dark black silk, dress. It's still painted black, for mostly stealth reasons. It's radar absorbent you can't see it very well at altitude. Nevertheless in the U2 at any one time we probably have fewer that 30 pilots flying the airplane.

Any hot spot whether it's in the Middle East, South America, throughout Europe you can bet the U2 is there monitoring it. There is also special reasons a U2 will be asked to do a search and rescue. If there is an earthquake or natural disaster the U2 can be there within hours and take a photo reconnaissance of the area. Pictures for 1000 square miles can be magnified many times so an assessment of a natural disaster can easily be covered by a U2.

The U2 airplane for those of us that have flown it, loved the machine, loved the whole history of the airplane. It first started during the Eisenhower administration to see what the technology of the Soviets was about. Their bombers, their numbers, where they were based, and their progress in intercontinental ballistic missiles. The first flight took place at Groom Lake on* 1 August 1955*, during what was intended to be only a high-speed taxi test. The sailplane-like wings were so efficient that the aircraft jumped into the air at 70 knots (81 mph).

A short time later, the U2 was deployed. At first, basically the mission was photography from Pakistan to Norway across central Russia. The primary mission of the U-2s was overflying the Soviet Union. We'd had flown several missions before that but now they had figured out the altitude and vulnerabilities of the U2. Soviet intelligence had been aware of encroaching U-2 flights at least since 1958 if not sooner but lacked effective countermeasures until 1960. In 1960, Gary Powers was shot down. It was not a direct hit. It you watch the movie "A Bridge of Spies" (2015). it's a pretty good chronology of what we did to get Captain Powers back from captivity and the Russians.

The U2 was very limited numbers and very limited number of pilots. We went on to vast improvements in the U2. When I started flying we didn't even have an operational U2 at the base where I was training. I didn't see a real U2 until I showed up in England. We flew out of Mildenhall, an RAF base in England. At the time were doing missions, during the time of the Berlin Wall, East and West Germany, there were submarines the Russians had in Murmansk a port City in Russia. There was a lot of reconnaissance of forces the U.S. wanted to monitor throughout Eastern Europe and what the Soviets in the Eastern bloc were doing.

The Cuban Missile Crisis in 1962 was precipitated by the Soviets trying to place medium range ballistic missiles in Cuba (In response to the failed Bay of Pigs Invasion of 1961 and the presence of American Jupiter ballistic missiles in Italy and Turkey, Soviet leader Nikita Khrushchev agreed to Cuba's request to place nuclear missiles on the island to deter a future invasion. An agreement was reached during a secret meeting between Khrushchev and Fidel Castro in July 1962, and construction of a number of missile launch facilities started later that summer).
The U2's were flying over, we suspected this, the Soviets denied it, the U2 took hardcore photographic evidence of missiles in Cuba. We presented those pictures to the Russians and it was finally resolved with the Russians taking the missiles out of Cuba (When all offensive missiles and Ilyushin Il-28 light bombers had been withdrawn from Cuba, the blockade was formally ended on November 21, 1962. The negotiations between the United States and the Soviet Union pointed out the necessity of a quick, clear, and direct communication line between Washington and Moscow. As a result, the Moscow–Washington hotline was established).

During the crisis, one of only two U2's ever shot down. Rudy Anderson was hit by a surface to air missile as he flew over Cuba taking pictures. He was shot down and killed (The only person killed by enemy fire during the crisis) We were flying out of Texas at the time and the U2 provided conclusive evidence the Soviets had indeed put a lot of missiles in Cuba. They had SAM's surface to air missiles sites there and were getting ready to set up these intermediate range missiles. Nuclear missiles only 90 miles south of Florida were just a little too close to tolerate at the time. (**Cuban Missile Crisis*** *October 27, 1962).***

The U2 like most reconnaissance airplanes, there's no guns, no bullets, no armor. We do have some defensive systems such as radar jammers. Most of the defensive systems on the U2 are warning devices. That means it someone on the ground highlights you, you get ample warning you are a target, and you go somewhere else. The U2 is a very tough airplane. We have lost a

couple of airplanes over the years due to environmental controls. For example, a lot of the mission is flown on autopilot on "Mach Hold." In other words, this is a constant Mach Speed. In the U2 Mach Hold is .715 (549 MPH). Mach one is (761 MPH) the speed of sound. One of the components of holding a constant Mach is temperature. In most parts of he world where you get a fluctuation in temperature, the U2 will do altitude adjustments (gain and loss change) to stay in the right temperature zone. One of the unique characteristics of flying very high is you're on the very margins of your flight envelope. If you get too fast in a U2 you have what you call a Mach buffet. If you get faster, certain control surfaces have airflow over the surfaces that are in excess of the speed of sound or Mach one. This pretty much ruins the control of the airplane. On the U2 you get reverse thrust or what we call a Mach Tuck. The airplane will want to nose down, you go too fast and it comes apart in the air. So if you get too fast in a U2, it's fatal to the airplane. You get too slow, it's a stall. As you get to the stall point, it won't fly, and it won't recover easily. As you get higher, that Mach limit speed and the stall limit speed if you can imagine a graph, you get closer and closer together so that right here you have a spread of about 5-6 knots. You can't go faster than that speed, you can't go slower than that speed. It presents a challenge when you lose the autopilot or you hand fly it. We did lose an airplane at night. The airplane tried to seek out a temperature equilibrium for a Mach Hold when on autopilot it became uncontrollable, the pilot lost control. He bailed out. He lived through the bail out sequence but was not recued until he was in the ocean too long to live through it.

One of the neat things about a U2, at least the R model and newer ones we have what we call a zero, zero ejection seat. That means zero altitude, zero air speed. If you eject from a U2 if for some reason you crash on the ground and you are standing still you can eject because the seat is rocket boosted. The canopy and the parachute is explosively deployed so essentially – and there have been some instances where the airplane crashed immediately after takeoff – the airplane is sitting in a fireball, the pilot ejected safely. He was rocket boosted to an altitude, the parachute explosively deployed, and he recovered safely. If you're above 70,000 feet and have to eject, everything is automatic. You freefall in the seat because the seat has batteries for defrosting the face plate on your space suit, oxygen so you can breathe, you stay within the confines of the seat and you fall down through 14,000 feet. There is an automatic system that separates you from the seat, the parachute is then deployed, and you descend safely down from 14,000 feet and a recovery. It also has in that seat kit a radio, a life raft and all kinds of survival equipment. And you have as part of the spacesuit, there are moisture activated water wings or life preserver. There has been one instance a pilot who ejected at 70,000 feet, he woke up floating in the ocean. Everything had been automatic, the deployment of the seat, the deployment of the life preserver and everything was amazingly automatic. The whole system of ejection in a U2 is great. You go from surface of the earth right out of a fireball to 70,000 feet where attitude sensors determine which mode it should adapt.

One of my most interesting U2 missions was a high mission, which meant we were up above 70,000 feet. The temperature at that altitude is really cold about -70 centigrade (-94 Fahrenheit). It was a training mission in the states. You had to go up every so often and fill some training squares. I'm coming back, it's after dark in January. I'm recovering at Beale Air Force Base in California and normally at high altitude missions when you get within an hour of landing on your

return as you start your descend, you disconnect the autopilot and you kind of roll the airplane around and make sure all the controls are working properly. You hand fly the airplane from that point on.

As I was starting my descend, the yoke wouldn't move. In the U2 you have a yoke. It's not a stick because at low altitude it takes the strength of both arms to make the thing (plane) respond. I'm starting down, and the yoke won't move forward and aft. This is pretty much a vital control function when you land. As I said earlier, the U2 is a squirrelly aircraft to land.

So the first thing a pilot does when something is not working right, before you call anybody to tell them about it, you sit back and look around and ask yourself, "what have I screwed up." Well, I don't want to call and make a false alarm and say oh, I messed up, never mind. So I'm waiting. I look around and I'm pretty sure I haven't screwed anything up at this point. So I push (on the yoke) again. I think it's frozen or their ice involved, or there's some kind of obstruction. I'd push really hard, but you don't want to push hard because if it suddenly gives way and you do an over control of the airplane, that's not good either. So I pushed as hard as I dared, and the yoke was not going to move. I have ailerons (working), but the yoke is not going to move. So I call. There's another U2 pilot that can be in contact with you the whole time you fly any mission. I call him and say here's the problem, it's not doing this, the yoke is not moving. But I'm continuing to descend. At that point, anytime there is an aircraft emergency or something really out of the ordinary they have what is called a "conference hotel." You get the wing commander, you get engineers and technicians from the manufacturer and they all kind of talk it over and make a recommendation. So you're talking to these guys, it's a conference, we've got Lockheed technical people on the line, the wing commander, the director of operations and they're all saying we cannot determine exactly what it is, we don't have a solution for it.

It could be ice, it's January, it's night. If it is ice, it's not going to melt. If you push really hard and it doesn't come undone, it's not going to come undone. So the airplane in our opinion cannot be landed in this condition. We recommend you bail out. At the time in California we had a controlled bail out zone so that theoretically the airplane was going to crash in the woods and not harm anybody. That was their solution. Go out there and bail out and we'll come and get you. Pilots are reluctant to give up their airplane if they think there is a chance they don't need to. And of course, the Captain of the ship is the Captain of the ship. He's got the final say so. So I said, I'm going to try one landing. At this point, fuel is critical. I've got enough fuel for one approach. So I'm going to do that. So I come down in descend. I was lucky that I had trim which means you can very slowly move the elevators. Though it was night, I had a horizon. The horizon was gray over black and I could tell looking at the horizon I could move the airplanes nose up and down. It was sluggish. It was not as responsive as what you want to really fly the airplane, but it could be done. So I set up an approach.

Remember, air speed is critical. And when you fly certain landing patterns, you're in the stall buffet. If you are too fast, it's not going to come down and land on the run way. So you want to be as slow as possible but still controllable. So I set myself up on a five-mile final at 250 feet

which is really, really low for a big jet airplane. And basically what I wanted to do was hold that air speed so when I got to the runway I didn't have to change the attitude. Because, remember I don't have an elevator. So I'm at 250 feet, I'm on air speed, in the stall buffet and I land, successfully. What was determined to have happened, the airplane sat outside the night before I flew and got 9-10 inches of water in the lower fuselage. It froze solid at -70 Celsius. There was no way it was going to move. The unique thing was, in the ejection sequence in the U2 you have a yellow handle between your legs. When you pull that, the first thing that happens is the yoke (about chest level) slams forward to get it out of your way. Then the canopy goes, and the seat goes. Well one of the Lockheed technicians told me, had you really attempted to bail out, you would have pulled that handle, things would have exploded, but that yoke would not have gone (moved) forward. Which means, it would have cut off your legs at the knees in a rather brutal manner. So, sorry about the recommendation (to bail out), but it's a good thing you didn't try to eject from that thing. And oh, by the way thanks for saving the airplane.

So I had some fun times. I went from high school band director to young Air Force pilot, two tours in Vietnam. The DE Haviland Caribou which was a fun thing to do. The B52's which was some hair-raising missions, but I got out of those alright. I flew the U2 which was a wonderful airplane and the comradery is unbeatable. There is a small group of guys at any one time that fly the airplane. We know pretty much anyone that has ever flown that airplane. We still have reunions every five years. It was a fun airplane, it's fun to go to reunions. You don't remember the tense or the bad time or family separations. When I was in Vietnam, we had no Skype, no cell phones. We had Marsradio patches (Radio telephone service for the military) or letters so family separations were really family separations.

After the U2, I had a couple of staff jobs. Anybody that has a career in the Air Force or any branch in the military that flies airplanes, you can't just fly your airplane most of the time. At some point, you have to go to a staff job. Essentially, you work for some general and you stay up all night on weekends and write a position paper or do some research for him. I had two really neat staff jobs. One was I was director of reconnaissance at Fifth Air Force which is based at Yokata Air Force Base which is essentially the Tokyo area. Under my direction there were 87 different units. The reconnaissance units throughout the Pacific were non-satellite, air breathing ground-based reconnaissance units. One of the greatest things about that job was that you had blanket orders to travel anywhere. I had this little piece of paper that I have framed on my wall that says I am authorized to go anywhere in the world by any transportation means that I determine. That is unheard up today. I could go airline, military airlift or whatever. That was a great job in that respect. We have some interesting things. It was a joint operation.

There was some things, the Navy P3's not under my command but under my jurisdiction, as far as their missions. One of the boys dropped a Sonobuoy (small 5" x 3' expendable sonar system dropped from aircraft or ships) early and it went into a family shrine in Hokkaido. It took a Navy Captain and I few visits and 6 half gallons of Johnny Walker Black to get that Sonobuoy back. When they got it back, the Navy boys drew a Halloween mask on it and it was known as

the "Shrine killer." So there were some light moments. Fortunately nobody was hurt or killed on that mission. That's part of the reconnaissance world.

My other staff job was at 7th Air Force in Ulsan Korea. It was several divisions. We had a command post. We did the scheduling for the C21 – the Lear Jet – and we had two air ground ranges. So everybody in the theater that had live ground practicing would fly over shooting targets on the ground. It was a great excuse to get out of the office if I wanted to visit the guys on the mountain. We have 65 guys that ran the Pilsung range (jointly operated by the US Air Force and the Republic of **Korea** Air Force). They were pretty much isolated up there. Nevertheless they had a great time. It was an interesting staff job. I wasn't stuck in the Pentagon writing position papers. I was actually out among the troops. It wrapped up a 23-year career.

I came out as a Lt. Colonel. I always felt the Lt. Colonel was the perfect rank. You were senior enough to get some special privileges, but junior enough you didn't get the big blame. Perfect Rank. I look back on with a great deal of pride. No big screw ups and I managed to come out clean. For the most part, it was a fun experience.