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Military Operations Research Society (MORS) Oral History Interview

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Edward C. Brady Interview (MORS)

Brady, Edward C.

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INTRODUCTION

Oral Histories represent the recollections and opinions of the person interviewed, and not the official position of MORS. Omissions and errors in fact are corrected when possible, but every effort is made to present the interviewee's own words.

Mr. Edward C. Brady was President of MORS from 1989 to 1990. In 1993 he was elected a Fellow of the Society (FS) and in 1996 he received the Vance R. Wanner award. The interview was conducted on 28 September 2010 in Vienna, Virginia.

MORS ORAL HISTORY

Interview with Mr. Ed Brady, FS
Mr. Bill Dunn, FS, and Dr. Bob Sheldon, FS,
Interviewers

Bob Sheldon: We're here for an oral history interview with Ed Brady. Let's start with where you were born.

Ed Brady: I was born in New London, Connecticut.

Bob Sheldon: Give us your parents' names, and tell us how they influenced you.

Ed Brady: My mother's name was Dorothy, and my father's name was Edward also. When I went to school, teachers always used to add "junior" onto the end of my name, but that's not correct because we have a different middle name. I learned very early on that teachers were not always correct.

My mother was an assistant to my grandfather, and was a bookkeeper, as they called them in those days. They did three or four different local companies' books, and did their tax returns and other accounting stuff as well. My father was in the Army, yet I was born in what most people think of as a Navy town. The reason is that in World War II (WW II) there was a coastal artillery battery on Fisher Island off the mouth of the Thames River, and my father was stationed there to protect the submarine base, research centers, and shipbuilding. The soldiers would take the ferry boat on Saturday into New London for a night out. My mother actually lived in Groton which is across the Thames River from New London. One Saturday night they were both out on the town, and they met.

Bill Dunn: Your father was in artillery then?

Ed Brady: He was. He was an enlisted person.

In those days, the regimental commander could promote and demote enlisted soldiers, so my father claimed that he was a sergeant first class six different times. [Laughter]

Bob Sheldon: He served during WW II?

Ed Brady: He did. I was born shortly before the war and after the Pearl Harbor attack the Army was rapidly expanding. Because he'd been in the Army for quite awhile, he was selected for Officers Candidate School (OCS) and went to Fort Lee, Virginia—Camp Lee as it was called then. My mother and I went there part of the time with him, so my mother had pictures of us on the train in the winter of 1941–1942 going to Camp Lee.

Bill Dunn: Did your father serve a full tour in the Army?

Ed Brady: He ended up being medically retired in about 1946 or 1947 so he served both before and through the war. Because he went to Fort Lee, of course, he became a lieutenant in the Quartermaster Corps. We left Camp Lee and went to Fort Ethan Allen, Vermont. We were only there about five months. One of their big jobs was to convoy units across the country, mostly at night and through circuitous routes because we were sure the Japanese were watching. He was a convoy motorcycle escort as a lieutenant. Then we were transferred to Fort Ord, California, near Monterey; and then to someplace in Alabama, and then someplace else. Finally, my mother said, "That's enough, I'm going back to Groton and when the war is over, you can come back!" [Laughter] So we went and lived there with her parents.

Bob Sheldon: You grew up in Groton and went to school there?

Ed Brady: I went to school in that area off and on. I went to 13 grammar schools in Canada, Florida, Groton, and New London; I went to high school almost all in New London.

Bill Dunn: How did you end up being in Canada?

Ed Brady: My father's family is from Canada. After the war was over, my father was medically discharged and by then he was kind of rootless. He had learned to cook and to manage a post's mess halls in the Food Service Corps, as part of the Quartermaster Corps. After he left the military, he

Military Operations Research Society (MORS) Oral History Project Interview of Mr. Edward C. Brady, FS

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began managing restaurants. It was a difficult economic time with the demobilization. We'd go somewhere for five or six months and then the restaurant would close, and we'd have to go somewhere else.

We were in Atlanta once, and I remember my little brother and I sitting on the curb while my mother and father discussed his not getting a job there that they had expected. My father suddenly said, "You know, we ought to go see my sister in Canada." My mother said, "Well, I guess so! We don't have any place else to sleep!" [Chuckle] So we went to Ottawa, knocked on my aunt's door, and she was surprised to see us, of course. We lived in Ottawa for two-and-a-half years, while my father ran the dining room in the local country club and opened two restaurants.

Bob Sheldon: Traveling around to all those different schools, did you have some good science or math teachers?

Ed Brady: I don't remember too much about my teachers in grade school, to tell you the truth. The Canadian schools I went to were quite good, and when I returned to the United States. I was considerably ahead of the other students. My 4th grade teacher in Florida was very exceptional. I was always in considerable trouble in school. She began giving me all the day's lessons at once, and when I finished she would send me to the library for the rest of the day. I was usually there by 10:00 AM. I read over 100 books that year. I was very systematic—I would pick a shelf and read everything on it. My 7th grade teacher in Groton was very good to me as well. He would bring his old freshman college books in, and have me read them.

In New London High School, where I started three months into the freshman year and then went there the rest of the time, we had several excellent science, math, and English teachers.

They had a very unusual school. It had been formed from a private school, a public school, and a technical-mechanical school that they used to send people to who didn't quite make it in high school. The school had a lot of shops and laboratories. They also had a very advanced testing program in which they tested all the students early on. Based on the test results, they told us what track we would be in, and they sent

a letter home to inform our parents. They had a General High School track, a General Business track for girls, and both a Liberal Arts and an Engineering College track. I was among about 40 other kids that were put in the pre-engineering college track. No one asked us or our parents what we wanted to study.

All the time I went to high school, I had to take some kind of shop every semester. I had automobile mechanics, woodworking, metal lathes, and three years of mechanical drawing; as well as five years of math, five years of science, and two foreign languages. And I worked 30 hours a week in a grocery store.

Also, we were put into a continuous two year English program our last two years because they feared that as engineering students we would never study English again. There were about 35 students in that class. One kid got an A, one quarter. No one else ever did. We wrote a 500 word paper every week for the two years, as well as the normal studies. And we took various types of tests similar to the Scholastic Aptitude Test (SAT) dozens of times. At the end, everyone in that class scored over 700 on the Verbal SAT. Not bad for science and math students!

Bob Sheldon: Which foreign languages?

Ed Brady: French and Spanish.

Bob Sheldon: The Coast Guard Academy is in New London. Did you do anything with the Coast Guard Academy?

Ed Brady: When it came time to go to college, I picked the Coast Guard Academy as my backup school because entry there is totally on a competitive basis—I was pretty sure that I could get in. It was my last choice because I didn't want to go to school in my own home town.

I applied to a number of the academies, and being a Navy town, there were lots of kids there applying to the Academies. It was a natural thing to think about, and in my case I had no money. We were quite poor for a number of years. Then my father got better jobs. We lived in a trailer until I started high school. I also applied to a Massachusetts Institute of Technology (MIT)-Amherst program at the urging of my French teacher. You went to Amherst for two years and then you went to MIT for three years, and you graduated with a Bachelor of Arts (BA)

and a Bachelor of Science (BS) I got a full scholarship to that, but when the counselor came to talk to me I told him I didn't have enough money to eat. The scholarship was nice, and not having to pay tuition was good, but where could I work and make enough money to eat? He said, "Well, there's no place you can work while going there." So, for me that didn't look very feasible.

I asked my father what were the chances I could get in West Point or the Naval Academy? My father told me that in addition to the political appointments by Congress, in which I was a second alternate, they had a pool for competitive entry into the academies based on parents being career officers. And that two or three students a year got in that way. At the time, I only placed 5th at the Naval Academy, so that was not looking very good.

I signed up to go to the Coast Guard, and the following month I got a letter from the Naval Academy telling me I was appointed. It turns out that they really take about a hundred competitive students! So I had had nothing to worry about after all. I got my father to go play golf with the Superintendent, and tell him I didn't want to go to the Coast Guard Academy. I had already signed a contract to go, and I didn't know how to get out of it! The Superintendent said, "Well, if he really doesn't want to be here, we really don't want him here anyway." [Laughter] They agreed and sent me back the contract, and I went to the Naval Academy.

Bob Sheldon: What year did you start at the Naval Academy?

Ed Brady: In early July 1959. I was in the class of 1963.

And incidentally, it has nothing to do with this oral history, but I just came back Saturday from a President's Circle weekend for donors at the Naval Academy, and the Superintendent told us that only 15 percent of today's graduating high school seniors have sufficient math and science to enter an engineering school. So their recruiting pool for those degrees is now very, very small.

Bill Dunn: What year was Roger Staubach?

Ed Brady: He was class of 1964. If you're interested in football, you should have gone to Annapolis when I went to school! [Laughter] There was a guy named Joe Bellino from New

England, and I believe that he ended up playing with the Patriots for three years. The first two years I was there, he was the quarterback; and the second two years I was there, Roger Staubach was the quarterback. They both won the Heisman trophy. We had great football years. We never lost to Army. [Laughter] And if you know how the Academies work that's a big deal, especially for a Plebe.

Bob Sheldon: Talk about your other experiences at the Naval Academy. How was the curriculum?

Ed Brady: I was in the first class that could take electives. Everything before that was mandatory, and they were just beginning feeling their way along with a number of changes. The way it worked initially was if you wanted to be in that program, you picked first year subjects you thought you could pass, and took the final exam at the end of Plebe Summer. If you passed them, you started with the second year courses in those subjects. When you finished all the required courses, you took electives to fill your required course load. I think that I passed three or four exams.

By chance, one of the initial electives was something called Operations Research. I think I was in my second year when that was first offered as an option. I signed up with a very small group of other people who qualified to take electives. We had a copy of a Morse and Kimball book that was in draft form, and hadn't been published yet. And that's what they taught from. Many of the instructors were naval officers themselves and hadn't trained to be Operations Research and Systems Analysis (ORSA) people. We'd go to class and we'd work on some problem for anti-submarine warfare (ASW) or something, work out the formulas and think we had the answers. Frequently, the next week we'd come in and they'd say, "Well, we're sorry, but in the editing of that chapter we found that formula is wrong." [Laughter] We'd have to go back and somehow unlearn it so that we could remember the right one!

It was a pretty interesting experience, and that was my basic introduction to ORSA. At the same time, the Naval Academy itself was becoming very systems engineering/systems theory/control theory oriented. We had lots of classes rooted in systems theory, which once

I left the Army has formed the basis of my professional career.

Bob Sheldon: Do you recall any of your professors' names from the Naval Academy?

Ed Brady: No, actually I don't. When I retire soon I'll have to research all those things I have forgotten. There's one thing I'd like to add though. Going back to the MIT-Amherst thing, you can see that I was schizophrenic already. When I went to the Naval Academy and they added electives, I thought, "Well, the whole curriculum is engineering because that's required and you get an engineering degree. I should take enough electives in economics, history, and political theory, and get my own equivalent to a BA/BS. So that's what I did. I graduated with a BS in engineering with a major in social studies.

Bill Dunn: Was that common?

Ed Brady: Not at all! There were maybe five people. Now, of course, all that's different and many graduates don't have engineering degrees at all.

Bob Sheldon: After graduating in 1963, what was your first assignment?

Ed Brady: We have to go back a little bit in time first. The third year I was in the Naval Academy, my roommate was a guy named Frank Wroblewski, and he was from Buffalo. His father was in the Border Patrol, and he'd lived on the Texas border and the Canadian border. He went to Canisius College in Buffalo for a year, and then he decided he wanted to go to a military academy. His congressman told him that he didn't have an opening for West Point, which was where Frank wanted to go, but he had one for the Naval Academy. Frank took it because he knew that upon graduation one could switch services.

In those days in the Naval Academy, about half the class had already gone to college for at least one year. I had another roommate who went to Texas A&M for two years before he came to the Naval Academy. That resulted in a number of interesting things.

I went to the Naval Academy two-and-a-half weeks after I graduated from high school. I was one of the youngest, I was the least educated, and they could go drink legally years before I could. They could rent cars and I couldn't, so those were the guys I hung out

with because of the obvious advantages. Frank and I did a lot of things together. He always planned to go in the Army because that's why he'd started out with the appointment to the Naval Academy. They told him he could switch when he graduated.

During the summer between our third year and fourth year was the first year the Army offered the Naval Academy an opportunity to send one platoon to jump school at Fort Benning, Georgia. Frank was going to sign up, and I didn't have much to do so I signed up with him. We spent four weeks in August at Fort Benning during what would have been our summer leave, and got parachute-qualified. After that, I thought I'd go into the Marine Corps. I knew the Marines had a hard time in their Recon units getting quotas to go to jump school, so I thought that would give me an advantage.

During the senior year, you make service selections and pick whether you're going to fly, or go on surface boats or submarines, or whatever you're going to do. I went to see the senior Marine colonel who was liaison at the Academy. I told him I wanted to go in the Marine Corps for three years, and go initially into a Recon Unit and hopefully go into combat; because in 1963 we pretty much already figured we were going to go to war.

Then I wanted to go to graduate school and I wanted to study such-and-such, and then I wanted to do this, and then I wanted to do that. He said, "Where do you stand in your class?" And I told him. He said, "Well, that's pretty high, so you'll be in the artillery." I said, "But, I don't want to go in the artillery." He said, "I didn't ask you, did I?" [Laughter]

He said, "There's one thing you gotta get straight right now – that's how the Marine Corps functions. When you graduate from here, you get commissioned in the Marine Corps and you give us your soul, and 30 years later you can get out and we'll give it back, and in between we tell you what we want you to do." [Chuckle]

I thought "Well, this is never going to work for me." As I exited his office, it turned out the senior Army liaison office was right across the hallway. When I came out, I saw it and I thought, "Well, I wonder if I went in there and told him the same thing, what he'd say?" It

had never occurred to me to go in the Army before that.

I went in and told him I'd been to jump school and where I stood in the class and everything, and he said, "Well, what do you want to do?" I said, "Well, I want to go to either the 82nd Airborne Division or the 101st Airborne Division [designated Airmobile in 1968 and Air Assault in 1974] because I'm already jump-qualified, and I want to stay in a combat unit for three years, and then I want to go to graduate school, and then after that I don't know." He said, "Well, how about if you did that, you went to graduate school, then you went to West Point and taught?" I said, "Sure, that works for me!" We laid out 20 years of what I would do, and I went in the Army. Then it ended up that I never did any of it except the 82nd Airborne and combat part, since I ended up going to Vietnam and staying there for nine years. *[Laughter]*

In the end, on the other hand, Frank was denied transfer to the Army, and spent about three years in Navy amphibious ships before they finally gave in and let him transfer to the Army.

The reason that I did what I did is that in the early 1960s, there were a lot of things going on in the civilian schools and in society in general about Che Guevara and Mao Tse-tung. Guerrilla warfare and resistance in general were idolized by the peace movement. The way I am, I need to have first-hand knowledge so I read everything they wrote. I read every book from Régis Debray, Che Guevara and Mao Tse-tung. I read Fidel Castro's works. I read T.E. Lawrence's (*Lawrence of Arabia*) *Seven Pillars of Wisdom*. I read all the books written by Bernard Fall, who was a famous French war correspondent and historian of the Indochinese wars. And I read *The Ugly American* by William Lederer, which was quite influential at the time.

I read all these books and things were pretty clear to me. What was going to happen fairly soon was that we were going to fight on the land, and we were going to fight with small formations in the villages. (Just like Iraq and Afghanistan now.) Therefore, I really couldn't see the point of being on a carrier throwing airplanes at it, and other ships would not get in the action. I wanted to be in the center of the action, so that's mainly what drove me to the Army and why I wanted to go in a combat unit.

I went into the Infantry (to fight in small formations) and to the 82nd Airborne Division as a condition of joining the Army. I went to the Infantry Officer Basic Course (where I was in the very top of the class) and then to Ranger School. I got to the 82nd in January 1964, and had a variety of platoon commands.

My brigade was the lead unit in the 1965 invasion of Santa Domingo. Since I had the lead reconnaissance platoon in Santo Domingo, I led the 82nd Airborne Division from San Isidro Air Base to link up with Marines who had been inserted by helicopter into the Embassy grounds to create the International Corridor. US nationals there could be convoyed to San Isidro Air Base where they could be air-evacuated.

Unfortunately, there was some confusion in the dark, and we got into a firefight with the Marines. So that was my first combat experience—being fired upon by the Marines! Of course, before we were through there I was fired upon many other times.

I had received orders to Vietnam before we deployed to Santo Domingo. In fact, I received a waiver from the Division Commander to deploy at all since being on orders meant that I was "non-deployable." When things quieted down in San Domingo, I returned to Fort Bragg to deploy to Vietnam. Somewhat ironically I arrived there already a Combat Infantryman. As I said earlier, once I got there I stayed nine years.

Bob Sheldon: Nine years continuous or off-and-on?

Ed Brady: Continuous. I only left once for a week in Kuala Lumpur and once for a week in Bangkok, and twice I got sent to the Pentagon for a week.

Bob Sheldon: Were you there for Ia Drang?

Ed Brady: I was with the 22nd Vietnamese Ranger Battalion that turned back the North Vietnamese attack on Plei Me Special Forces camp, which preceded and resulted in the Ia Drang Valley campaign.

Bob Sheldon: Can you talk a little bit about that?

Ed Brady: Being in the 82nd Airborne Division and figuring I was going to get sent to Vietnam soon anyway, I wanted to pick where I was going to go. I spent a lot of time talking to the Pentagon on the phone trying to get an

assignment to a Vietnamese Ranger unit which I eventually got.

The 22nd Vietnamese Ranger Battalion that I was assigned to was based in Pleiku with the Vietnamese II Corps Headquarters, in the highlands near the Laotian border. In both the I Corps and the II Corps areas, battles were becoming larger. As a result, the Vietnamese were forming the Corps' three Vietnamese Ranger Battalions into a mobile group strike force. When the regular divisions got into trouble, the Corps would send the Ranger groups in to fight the battle in advance of them. When operating through an area, we would usually operate as separate battalions.

Also, in maybe late 1964 or early 1965, the US Special Forces started creating Special Forces Camps down through the mountains in I Corps and II Corps, mostly along the Laotian border. These were populated with militia from the Montagnard tribes in the area.

Our Ranger units were deployed all the time, and took a lot of casualties. War in those days wasn't like the wars of today. It was very normal to be deployed into an operation at least two times a month, maybe three, and if it was bad four times; we'd have 400-500 killed in action (KIA) or wounded in action (WIA) in a week. There was a constant turnover in the units to replace the troops, and a lot of the US advisors got killed or wounded. I spent nearly two years in that job and never got scratched.

Everybody I ever worked for was medically evacuated. When the Special Forces camps started to get attacked, we pretty much knew that it was North Vietnamese regiments. And to this day, I guess because of the way the Intelligence Agencies work, with triple confirmation and independent sources and all that, the United States was not admitting there were any North Vietnamese Army (NVA) units in the country.

We would get into battles and see them, see their uniforms, capture their bodies, lots of accoutrements, and things. They were obviously NVA, and the US Military Assistance Command Vietnam (MACV) in Saigon would tell us, "No, they weren't." As a result, the Vietnamese often got into battles in which they were significantly outnumbered. We might be a battalion out there operating where there had been

a report of a couple of enemy platoons in the area, and it would turn out to be an enemy regiment. There were a lot of pitched battles like that.

The NVA regiments, as part of their training I think, and to create local propaganda and a feeling of insecurity, started attacking the Special Forces Camps down through II Corps.

Over several days Plei Me camp came under severe attack. The Ranger Mobile Group was deployed and we routed at least an NVA Regiment, although we took pretty heavy casualties. One battalion deployed by road and was ambushed, which caused us to think that there were several NVA Regiments operating there. The movie "*We Were Soldiers, Once... And Young*" opens, and they're pursuing the NVA across the Ia Drang Valley. This is the retreat of the NVA regiments from the Plei Me Camp.

After the Vietnamese Ranger Group broke the siege at Plei Me camp and drove the NVA back, it was decided that it would be a good opportunity to introduce the 1st Cavalry Division (Airmobile), commonly referred to as the 1st Air Cavalry Division, to a battle; so they used the 1st Air Cavalry in their helicopters to pursue the fleeing NVA. Because I'd been on the ground almost a year and I'd been in the camp itself, and had fought against these particular NVA already, someone in the Headquarters had me fly in the escort gunship for the 1st Air Cavalry Division commander over the battle, and give him advice. I was there above the fighting on the ground (shown in the movie) through the whole thing.

Bob Sheldon: Was Lieutenant Colonel Moore there at the time?

Ed Brady: Yes. He was the battalion commander on the ground, and I was with Major General Kinnard in the air. Unfortunately, several of my West Point friends were with Moore on the ground as company and platoon leaders, and I heard them die on the radio.

Bob Sheldon: The book "*We Were Soldiers Once... And Young*" by LTG (Ret.) Harold Moore and Joseph Galloway gives a very elaborate description of that fight. Anything you saw that wasn't covered in the book?

Ed Brady: They don't talk about the Vietnamese role preceding the battle, at all. I mean there were several hundred South Vietnamese

killed, and they had broken the siege and caused the NVA to be fleeing. We estimated over a thousand North Vietnamese were killed before the 1st Air Cavalry even started fighting. I know there is a limit to what can be put into a movie, but it is generally true of most of the US military history on the Pleiku Campaign, as the US called it. At best, they give a short paragraph or a sentence as to what precipitated the battle in the first place. This inattention to the Vietnamese role in the war often causes a misconception of how the war was really fought.

Bill Dunn: You were a lieutenant during this period?

Ed Brady: Yes.

Bob Sheldon: Where were you during the 1968 Tet Offensive?

Ed Brady: Well, before I get to that it will be easier to understand if I discuss the period from 1966 to 1968 first.

After operating almost two full years with the Vietnamese Rangers, the II Corps Commander (US) insisted that I leave a combat unit. They didn't believe in independent probabilities as I do. They thought about being in combat as though it was a series of cumulative, conditional probabilities. They said "You can't keep doing this and not get killed." I said, "Well, that's not true because each battle is an independent event, and there's no reason that this one would be any different than the other ones—I'll take a chance!"

But, the senior officers didn't agree with me. Eventually I had to give in to the general.

Thus I first went to a beautiful mountain town called Da Lat, and was a province advisor working with the Vietnamese Provincial Government. I was the operations advisor to the Vietnamese Province Chief commanding the regional forces/popular forces (RF/PF) that they used to man the local military units there, very similar to our National Guard. I was with them on a number of serious military engagements.

I was there for about a year, and during that time the US Agency for International Development (USAID) supported the National Police Training Center there. They were building a training camp there for what they came to call the Vietnamese Police Field Forces—these were based on units the British had formed in Malaya

during the communist insurgency in the 1950s. The US had hired a small group of Australians (Brigadier Sarong [who wrote a very interesting book about this period], a group of warrant officers, and a couple of majors) to build this jungle training camp and train the police.

Because I went to the Center often to observe the training, I got to be friendly with Sarong. I had dinner with him and some of his staff every night at his villa. We talked about the war and everything. He had been a guerrilla commander in WW II behind the lines in Borneo, and he had been in the Desert Rats in North Africa, so we had a lot of stories to swap. Also, he and others who visited there with him had had key roles in the British administration in Malaya. They were very focused on the role of the Communist Party in the insurgency and not just the guerrilla units. I learned a lot from that group!

One night there was a civilian visiting there for dinner. He asked me if I would come out to the training center the next day, and could they show me something? I went out there, and he said they were forming this unit. But this was not going to be a police unit; rather it was to be a mercenary unit for the United States. All of the officers in the unit were Vietnamese Special Forces, and all the troops were either Hmongs or Rhade Montagnards. So in a single platoon, they spoke three different languages with very few able to understand the other languages at all!

The trainers said, "We're having a lot of trouble trying to figure out exactly how we're going to train them, and maybe you'd like to take that job." I said, "Well, I don't mind the job, but what are these guys going to do?" They said, "Oh, they're going to be sort of like Rangers, you know, do recon things." I said, "Well, I know a lot about that. Okay."

So I was loaned by the United States to the Australians at the Field Police training school to train this unit for several months. In their graduation exercise, they went out in the jungle with me as an observer, and set up successful ambushes and killed some local tax collectors and others.

In the course of this period, I came to understand from the American civilian visitors, that they were all in the Central Intelligence Agency (CIA). And that what they were targeting was the civilian Communist Party cadre, rather than the military. That was why they were interested

in communist tax collectors, and shadow mayors and village chiefs that lived out in the jungle and really controlled the villages.

At the graduation for these people, they were given the name of Provincial Reconnaissance Units—PRU. In the end, every province had several PRU units. They all worked for the CIA province representative, and he controlled them.

When I left Da Lat, I went to Saigon and worked in the US liaison group in the Operational Command Center for the Vietnamese Joint General Staff. This was a part of the MACV Command Center that was co-located with the Vietnamese Joint General Staff. This assignment came about because twice I had been asked to be General Westmoreland's briefing officer from the US Command Center, and had refused. Also, I had been asked to be General Stillwell's aide in Thailand, and had refused that also. They were looking for a combat veteran for these jobs, but I felt, "Why work for a general, when you can be in the field doing the real thing."

General Vinh, who commanded the Vietnamese Armed Forces, did not like to rely on word of mouth and the chain of command to send him information about what was happening during battles in the field. He had two colonels on his personal staff. Early every morning when the nightly reports were collated about where the fighting was, General Vinh decided where he wanted to send them. That is, to which battles, and I went with one of them almost every day. We traveled as the Chief of General Staff's personal representatives. As a result, I came to know all the regimental and division commanders in the Vietnamese Army.

Then my old CIA buddies contacted me and said, "We hear a lot about you, and you seem to now know an awful lot of senior people. Also, you socialize, live and work full time with Vietnamese. So there must be things you could tell us that we'd be interested in." I said, "Well, I don't know what you'd be interested in and I can't just repeat everything." They said, "We'll give you a list of questions."

Also, they said that they wanted me to become the Special Assistant to the Director of a new program being formed. Initially, I was confused about how as a captain in the Army I

could be assigned by them to their program. But I agreed that it sounded interesting. A little later, I learned that it was to be called the Phoenix Program and I was to work for William Colby who went on to head the CIA. My assignment was personally arranged between General Abrams and Mr. Colby.

I was still working in the Joint General Staff Command Center at the beginning of the Tet Offensive. This period of attacks was actually pretty long since the first attacks which were featured so prominently on US TV were followed shortly after by a second series of additional attacks—thus, it came to be known as an "offensive." I lived on the local economy out by the Phu Tho race track in Cholon. Due to the success the North Vietnamese initially had attacking Tan Son Nhut Air Base, the Phu Tho section of town was cut off and we were actually behind the lines.

For three days, I was on the wrong side of the battle. A Vietnamese colonel, who I knew and lived in the same block as I, kept having civilian neighbors go and check on whether we could get through the lines. One day he came to my house about 6 in the morning. He said, "I think there's a way through the lines, and we're going to go together." He and I went, and we got back on the right side of the lines. Then I went to the Vietnamese Joint Chiefs of Staff (JCS) command center, and worked there and slept there for several weeks.

The second series of attacks is not too well known to people. It was about a month-and-a-half, two months after the first one, and it was smaller in scope and intensity since the communists had taken so many casualties in the initial attacks. Around Saigon, the attacks mostly got bogged down in Cholon, which was the Chinese part of Saigon. During the First Tet Offensive, there'd been a lot of political issues in Vietnam because the Chinese merchants had a lot of destruction of their property in stores; they claimed that the Vietnamese commanders used unnecessary force and destroyed their property on purpose.

During the Second Tet attacks when it became clear that most of the fighting was going to be in Cholon and the fighting was building to building, block by block, General Vinh was

worried about the Chinese perspective. He sent one of his colonels and me down to the front lines to ensure avoidance of as much property destruction as possible. We had to supervise the use of artillery and indirect weapons, and actually approve "requests for fires" from helicopters or aircraft before they were allowed to carry them out. We were a half-block from the front lines through the whole thing, day and night, doing all this.

You might remember the picture of the Vietnamese police chief shooting the Viet Cong (VC) in the head. I was about 10 feet away from them when that happened. People never understood that the VC had just admitted killing General Loan's wife and children, and so Loan had good cause. Some days later, a US helicopter misfired a missile when I was with General Loan and he lost a leg. Some Vietnamese claimed that the CIA did it on purpose, and that I had directed it. But obviously we didn't do that.

There is a lot of suspicion and even paranoia in these countries, and there are a lot of assumptions about what Americans know and don't know, and what we do and don't do that goes way beyond any capability we really have to know things or do things. But that's what they think because they're always so suspicious. (Not so different as much of the speculation over the Bin Laden killing in Pakistan). Not too different than some American views of our own government.

Once the street fighting in Cholon started to die down, I moved on to my new position as Special Assistant to the Phoenix Program. The Vietnamese leadership for this program came from the National Police Special Branch, which is where my office was. We really don't have a good analogue for this in the United States. The Special Police were sort of a cross between Britain's Scotland Yard, which is primarily law enforcement oriented, and France's Deuxieme Bureau which is more focused on domestic and political intelligence. The Phoenix Program, if people do not know, had a mission of eliminating the Communist Party leadership in South Vietnam. Since being a member of the Communist Party was banned by an amendment to the Vietnamese constitution, this was a totally legal police action. However, the program became quite controversial in the United States.

Also, I was asked to take on covert intelligence collection. So I had a day job and another "job." After a couple of months of my sending in reports, the CIA Chief of Station asked to meet with me. During the discussion, he said, "We think that you really need to be trained in "tradecraft." We're going to fly in two senior guys from Hong Kong and give you a month's training here in Saigon because we can't let you leave; we don't have time for you to be gone." So there we were doing one-on-one surveillance and dead drop training on the streets of Saigon!

I did this for a number of years, and ended up having about 30 or so senior Vietnamese, several Korean generals, and several high ranking Thais who I collected information from. The way an overseas CIA station worked then is that all reports from field agents come in, and then the Station staff analyzes them. They give them ratings as to their credibility and importance. Then they decide which ones they're going to send back to the United States. The ones that were sent were called "disseminations." I was told that for a period of about two-and-a-half years of fairly intense political turmoil, half of all disseminations from the Saigon station came from me.

I knew an awful lot of Vietnamese officials and what they were doing. As it turned out, guys that I had started with in the Vietnamese Rangers, and guys I'd been with in Da Lat, were among people who were planning many of the potential coups. The Embassy asked me to assist them in preventing coups and stabilizing the country by befriending, working with, and discouraging people who make coups. Most of the Vietnamese officers that I worked with spoke no English, and they were also anti-French. They were among the disaffected in the military. They were not especially anti-American, but they were nationalist and anti-President Thieu.

Bill Dunn: Did you speak Vietnamese?

Ed Brady: Yes.

Bill Dunn: Did you take a language course before you deployed?

Ed Brady: No. I learned it there direct from the Vietnamese soldiers.

I was Special Assistant to the Director of the Phoenix Program for its entire duration, about five years. Bill Colby, who became the head of

the CIA, was the first director I worked for. The second director was the guy who had led the Che Guevara hunt and capture in South America. And the third one, I never did find out what he did, but he obviously did something to be in that circle of people.

Bob Sheldon: Would you talk about the Phoenix Program from your perspective?

Ed Brady: I'll tell you the same thing that I responded when they asked me while I was taking my orals at Georgetown Foreign Service School in 1976. One of the Panel members (who was a senior aide to Senator Church) asked me "Now that you're much better educated and older, what would you have done different about the Phoenix Program?" I told them that "I would have started a hell of a lot earlier, and killed them a hell of a lot higher up in the Communist Party."

It's what you have to do in these countries. The insurgent leadership has to take amnesty, be arrested, or be killed. It's what we finally started doing in Iraq and Afghanistan.

Bill Dunn: The term we use nowadays is "building partner capacity." Do you have any lessons learned on building these capacities?

Ed Brady: Without building up the regional forces and the popular forces, and the Vietnamese Army, and especially the police forces, we would have never been able to extricate ourselves from Vietnam. I don't agree with how we did it in the end. I think it was overly precipitous and it caused the fall of the country, but in the middle of Watergate nobody had the stomach to stay in Vietnam.

That's the same lesson those involved learn over and over in every one of these countries. Until the local police force, and in some cases the Army, can provide basic security and stability to a society, you can't have a democracy.

Unfortunately, we almost always over-emphasize the military and continue to do so. To make matters worse, we don't have any real and experienced apparatus in our country under the State Department to have the necessary civilian and police advisors in the field, in the villages, and in the districts to work with local civilian authority, and that's what's needed.

Additionally, it is very important to confront and eliminate corruption. There can be

no trust and acceptance of a government as legitimate if it is corrupt. In most of the countries we end up intervening in, there is little legitimate taxation to pay for adequate salaries. So "informal taxation" is practiced down to the lowest levels of government, including the police and military. This is something that almost every revolt, insurgency, or guerilla force promises to change in order to get the support of the people.

Bob Sheldon: Before our interview, you mentioned that you did an oral history interview with a person from Harvard. Could you comment about that?

Ed Brady: It's a book by Al Santoli and it's called *To Bear Any Burden: The Vietnam War and Its Aftermath in the Words of Americans and Southeast Asians*. It's an oral history that interviews mostly South Vietnamese officers and North Vietnamese officers, some US officers, a couple of Australians, and some Laotians. It tells the stories of people in the battles, the politics, and the situation throughout the war from different perspectives of all the different sides. There is also a book on the Phoenix program called *The Phoenix Program* by Douglas Valentine. It is fairly critical but it is not untrue, and received a lot of good press.

Bob Sheldon: I'm surprised you were there in country for nine years, because one of the common critiques of the Vietnam War is lack of continuity for the military forces, that is, they were rotating every year and there wasn't much overlap between them. Since you were there nine years, how did you view that lack of overlap or lack of continuity?

Ed Brady: I agree that rotation was a huge problem, and it is in Iraq and Afghanistan in my view. There should have been many more people like me. I mean, I only was there that long by personally resisting the system. I'd probably been there three years and was a junior captain when the Infantry Branch told me if I didn't go to the next Infantry Officer Advanced Course, they were going to throw me out of the Infantry. *[Chuckle]*

I had the opportunity to come back on business and I went to see the head of the Infantry Branch, and I said, "I'm 26 years old, and I have 3 years in combat, all in Infantry Units. I have 27 medals. I have 6 medals for valor. I'd like

you to explain to me why you think I'm not an Infantry Officer." [Chuckle]

He said, "Well, you haven't had a Reserve Officers Training Corps (ROTC) assignment. You haven't been on rifle training ranges. You haven't been a headquarters commandant." I said, "I'm not interested in any of that." He said, "That's why we don't want you. I don't know what the hell you are, but you're not a career Infantry Officer." [Chuckle] So as a result, I went back to Saigon and resigned from the Army.

I wrote a very long letter about all the things I didn't agree with about how they ran the Army, how they ran the war, how they ran the country. And their answer was that I was "involuntarily retained in the Infantry for the good of the nation," and they would review my situation every six months and there was no need for me to ever contact them. They would let me know when the situation changed. So, in essence, they guaranteed me what I had wanted.

I was in that status for two-and-a-half more years, which suited me fine. The good part was, as a result, I picked every job I ever had. I interviewed who I was going to work for and decided whether I liked it or not. And when they said, "You can't do that," I said, "Well, what are you going to do? Keep me in the Army and send me to Vietnam?" [Laughter]

There's nothing they could do to me except throw me in jail, and they weren't going to do that. So I had great jobs. I worked for great people. I had great experiences. I got out of the Army in 1972 when they were demilitarizing Vietnam; they called it "Vietnamization" which was a part of the Paris Peace Accords. Bill Colby and General Creighton Abrams had dinner one night and Colby came to see me the next day. He said, "You were the subject at dinner last night."

I said, "Well, I don't know why guys like you waste your time at dinner on people like me." He said, "Well, because the Army says they have to send everybody out, and General Abrams doesn't want you to leave and I don't want you to leave. The only way you can stay is to be a civilian, and we have arranged that. All you have to do is go to the Military Personnel Office at Tan Son Nhut Air Base tomorrow morning at 9:00. You sign out, you go across the hall, and you ask for so-and-so. We'll sign

you in, and you just stay right here in the same job. So that's what I did.

Bill Dunn: Stay right here as a –

Ed Brady: Advisor in Phoenix. So my first civilian job was the same job I had in the military.

Bob Sheldon: That was in 1972?

Ed Brady: I think that it was 1970.

Bill Dunn: Is that a government position?

Ed Brady: Yes. Actually, I suppose you'd call it a cover position. I was hired as a GS-13 Naval Intelligence Officer, so I was back to the Navy.

Bill Dunn: During those nine years, when you were in combat, did you ever use any of your ORSA skills?

Ed Brady: No. Not in combat really. Mostly I stuck to commanding small units, operating with small units, ranger-type of operations, special operations. I worked with the Special Forces a lot. I was in Special Ops. I worked in Intelligence. All small units.

One of the things that happened in 1972 when almost all the military had been withdrawn (the agreement reached allowed 10,000 military to stay for some restricted tasks), the US structure within Vietnam was reorganized. The position that I was then put into was in the Office of the Special Ambassador for Field Operations. There was a computerized evaluation system developed in Vietnam called "The Hamlet Evaluation System." All the advisors had to input to that from all over the country to determine basic local situations about education, health, security, etc., of the population and how much control the government had in every area.

When the military was leaving, that was turned over to the Office of the Special Ambassador. I managed that system and all the analysts who went with it. We analyzed percentage of territorial control, percentage of population control, percentage of villages that had police in them, and things like that. We did a lot of quantitative analysis based on the Hamlet Evaluation Report statistics, and we did a lot of statistical examination of the reports.

When Kissinger was negotiating the Paris Peace Talks, I headed the Special Analysis Unit in Saigon that backstopped the peace negotiations (there was another unit in Washington). The way the peace negotiations worked, once they settled what kind of table they were going

to have, they met for four hours. One side spoke, and then they adjourned for two days. That was for participants to break, analyze what had been said, consult one another and their own governments, and prepare a response usually in the form of a rebuttal.

At one point, there was a funny incident. The North Vietnamese had claimed that they controlled 90% of South Vietnam. Everyone knew that this was untrue, but what was the right way to respond? We decided to use big geographical plots we could get on CalComp plotters fed by the data in the Hamlet Evaluation System, and overlay our estimates of population control. Then I realized that about 30% of South Vietnam was uninhabitable so that should be taken out of the calculation. I decided that we should color the different areas: white for uninhabitable, blue for South Vietnamese/US control, and red for North Vietnamese control.

We were making multiple runs of these plots to get them correct, and it was very slow. Late into the night, I decided to tear up the multiple copies on top of my desk so that I didn't get them confused with the final ones that were to be flown to Paris early in the morning. I went out for a cigar, and when I came back I asked where the final plots were? They said "Well, we laid them on the pile on your desk." Then, I realized that I had torn them up! We had to take all the pieces down to the courtyard, and piece them together like a puzzle. When we finally got the right ones together, we taped the tears down the back with masking tape and shipped them off to Paris.

The next day the ambassador called me saying that he had a cable from Kissinger thanking whoever had the great idea of doing the maps this way, but what was the tape for? Years later I met Kissinger, and told him that I had made the maps. He looked at me and said "What was the tape for?"

There was another interesting incident with that system, when we were getting ready to turn it over to the Vietnamese Ministry of the Interior. The United States wanted to see if we could reduce the cost of the system, because the Vietnamese couldn't afford what the US Government had been affording. I did a regression analysis on 10 years of data and found a

95% correlation with historical results, if you only answered nine questions instead of the 128 the United States had been using.

The Ambassador decided that he wouldn't be able to easily explain in a readily graspable way to the journalists why there was a 5% error around it, even though it had always been there. He didn't want to take the risk of a public relations problem if he went from the 128 questions to the nine questions and claimed the outcome was the same. So they wouldn't implement our recommendation.

Another time, they had a group of professors come over from West Point in the summer, and they were doing these regression analyses. For one of them, they ended up sending it to me to read it over because people were bothered by it, and they didn't know why. One of the most salient findings was that village security was highly correlated to the presence of national police in the village. As result, the study was recommending a large increase in US funding for the police. While the correlation seems to be intuitive, the numbers were so high people doubted it. The reason it comes out that way had nothing to do with the math. There was a law that said you could not assign a police officer to the village until it was declared secure. So, there was always a high correlation. *[Chuckle]*

The results were highly correlated, and it wasn't meaningful. Because I knew a lot about the country, I ended up working on a number of problems like that.

When I was in the Command Center, just before the 1968 Tet attack, there was an arrangement whereby in order to incentivize the Vietnamese Army to conduct operations overnight, which they were frequently loath to do, we would subsidize them more. One time they had to renew the budget for this, and they were putting together the statistics. It came out to be much higher in dollars than they thought it should be.

This action paper was working its way around the J-staff and the section of the Operation Center that I worked for was run by a colonel. I was still a captain, and we got along very well. Our section worked for the major general who was the MACV J-3 who was supposed to sign off on the action. The colonel sent it to me

and said, "See if you see anything wrong with this." I thought about it for a couple of hours, and then I went back and told him it was wrong by an order of at least a factor of four—it couldn't possibly be that number. But I didn't know why because the calculations weren't explained. There was no math in the paper.

He said, "Well, what should we do?" I said, "Well, you have to non-concur in this." He said, "I know you haven't been at headquarters long and you don't know much about bureaucracy, but you see this piece of paper on the front? Seven major generals have concurred in this, and you want me as a colonel to non-concur in it?" I said, "Yes Sir, that's the right thing to do." He said, "Okay. Get your hat. We're going over to see the major general." I think his name was Armstrong, who was the J-3 at the time.

We went in, and the colonel said "Tell him your story, Captain." I told him and he said, "Well, why don't you know what's wrong with it?" I said, "Well, the math's not here, and if I could see the math, then I could probably figure out what's wrong with it." He said, "I didn't like it either, but I signed it. Let's figure out who or where this originated."

It turned out it was in the J-4, and we went down there and the general insisted these two lieutenant colonels go up on the blackboard and write out how they had calculated all this. They were really pissed doing this for a junior captain. They got down to about the middle and I said, "Right there. That number right there—that's not right. It can't be right. It has to be wrong." This number was supposed to represent the average number of Infantry units overnight in the field throughout the Army.

A part of my day job was to submit all the operation reports every day for the entire Vietnamese Army, so I just intuitively knew this number couldn't be right because I've been living with this data for a year. I said, "where'd you get that number?" And they went back to their records and said, "Well, we got this from Major So-and-So." Well, he sat next to me in the Operation Center.

I said, "Well, what did you ask him?" They said, "We asked him the number of nights that the Vietnamese battalions are out overnight." I said, "But the number we compile is battalion

equivalents, and the number the law requires for this budget is an entire battalion. They are vastly different things, and you asked the wrong question." They figured it out. We went back, got the right number, and put it in. The budget was reduced to a quarter of the original. Seven generals hated me. *[Laughter]*

Years later I was at a pool party in Georgetown, and this four-star general came over and said, "You're Ed Brady, aren't you?" I said, "Yes, do I know you?" He said, "Yeah, I was the brigadier general in J-4 that you yelled at about the numbers in the report!" *[Laughter]*

Then he said, "I knew they were wrong, but I didn't know why, and we couldn't find anybody who knew why!" They had circulated this whole thing, everybody thinking it has to be wrong, hoping it was going to cross over somebody's desk that would non-concur. And of course, once you start that process, nobody wants to non-concur.

That's kind of what I did—statistical analyses and things like that. It was pretty limited. And it was just kind of incidental to other tasks I had.

The biggest lesson to me from all this was that to do good analysis, analysts need to well understand the operational context of the question and fully understand what the data itself means.

Bob Sheldon: Let's pick up your last couple years in Vietnam as a civilian there. What kinds of guys did you work with? You said you led a team of analysts?

Ed Brady: Some of those were ORSA people. Some were political analysts from the State Department. Some were economic people from USAID, and we were all grouped together. I managed the group.

Bob Sheldon: How many were there altogether?

Ed Brady: Maybe 10-12.

Bill Dunn: Where did the ORSA people come from?

Ed Brady: Mostly they were graduates of the Navy Postgraduate School. They were mixed Navy and Army. I don't remember any Air Force people being there.

Bill Dunn: Military or civilian?

Ed Brady: They were military people who had gotten out.

Bob Sheldon: Did you get involved in the Hearts and Minds Campaign?

Ed Brady: Well, technically these programs I have been discussing fell under what was called the Pacification Program.

Bob Sheldon: Do you have any observations on that?

Ed Brady: I think it's the right thing to be doing. It's very difficult and it's got to be tailored to each locality, but done well it is much more effective than just military operations. I mean, the military operations are good against organized military units. You have to have some identifiable enemy, and he has to be in a place where you can fight, but if you want to deal with scattered guerilla movements and things like that, it's more like fighting against the mob in a large US city.

Many insurgents are more like gangsters than they are like soldiers, and the best advisors that I ever met in Vietnam for that kind of thing were with the police. They had a Public Safety Office, organized under USAID, and they'd send advisors there. Most of them were ex-state troopers whose biggest thrill had been to chase somebody down at 120 miles per hour and give them a ticket. Well, that isn't really what we needed but they were the kind of people who volunteered to go, so there were a lot of them there.

But there were a few people there who came from big city prosecutor offices and worked against the mob, and they are used to collecting intelligence, collating it, figuring out who's who, figuring out what their activities are, how you can get to them, things like that. It's the same way we figured out the Communist Party structure in the Phoenix Program.

If you have that kind of background and go overseas for any extended period of time, it is not career-enhancing. So there's very few of them who are overseas. I think that's what they are trying to address these days when they put FBI offices overseas, so that they're not transferred out of their own organization, so to speak. They don't go from the FBI, a prosecutor's office, or the Justice Department to USAID. They're still in their own agency and they're placed overseas, and they form teams out of them. This seems to be a fairly common way now in counter-terrorism work. I haven't been

on the ground in years and I haven't seen these teams in action, but I would imagine that this works better.

But you need all kinds of experts. You need agricultural experts. You need educational experts. You need legal experts. You need all this on the ground to build effective local governments and improve the life of local citizens. But it's hard for them to be out and effective if they are not secure. In my office in the Phoenix Program there was myself as a Special Assistant, and two State Department people whose background was in constitutional law. The legal aspects of how you conduct a campaign like that are very important because if you are interested in what they call the hearts and minds of people, you need them to be allied with you. They need to see that you are making common cause with them in something that they want, and that means it has to be legal. You're no better than the other side if you allow corruption, or commit illegal acts.

Bob Sheldon: One of the big buzz words now is "interagency." How well did the interagency work in your instance?

Ed Brady: It had problems. They always will. You know, if you work in a company or you work in some part of the Department of Defense (DoD), the inter-organizational boundaries are important, and sometimes they get to be insurmountable if you have the wrong personalities involved. Interagency activities are even more difficult because you don't even have a basic organizational bond between people. We all see this every night on TV crime shows when multiple agencies need to cooperate on a case.

The fundamental structure, today, is no different overseas than it was in the 1960s in what were called "country teams." The Ambassador is technically in charge. The military is underneath him, and there are a multitude of agency and interagency groups also reporting to the Ambassador. In fact, I did talk to Ambassador Eikenberry about how well this works in Afghanistan a couple of years ago when he was still a general. If the military presence is large enough relative to the country and the other resources, then the military starts to dominate the interagency process. A typical general is not well-trained to deal with interagency issues, or even to understand anybody else's

issues and constraints. They want to be in charge. They want to run it. They want an objective. They want to finish their mission, and they want to leave. And that's not what the rest of the agency actions are about.

Training young officers to have a better understanding of these nuances and needs in these lower intensity, longer duration wars is very important. And it certainly has not been the normal training of an infantry officer in the Army or the Marine Corps.

The Navy is starting an initiative in this at their Academy. They had 200 midshipmen last summer that were sent overseas for up to 6 weeks. They were sent to the Ukraine, Jordan, and the French Foreign Legion School in Africa, among other places. They gain more international perspective and more cultural exposure very early in their careers. I assume West Point now has a similar program, but I have no idea how large or long it is. Modern officers have to understand these concepts to be effective. It's been hard enough for us in the military to do "jointness," let alone interagency, but it is now essential.

Bob Sheldon: Let's talk about the closure of the Vietnam War. Were you there for the evacuation of the US forces?

Ed Brady: No, I left around a year before that in 1974. The last thing I did was to write a paper predicting the collapse of South Vietnam and I went through the country north to south, division by division, regiment by regiment. I made an assessment of whether I thought officers and units would stand and fight or flee, whether the commanders had money overseas or not, and whether they were likely to flee the country by themselves and leave their units, or whether they would retreat and continue the battle.

After it was all over, I was wrong on about 6 people out of 250. Unfortunately, it is a terrible way to confirm that you understand something fairly well.

Bill Dunn: With your analysis group, who did your advice go to – at what level?

Ed Brady: It went directly to the Special Assistant to the Ambassador for Field Operations, and then to the Ambassador himself and to whoever was the Senior Military Commander at the time. It also went back to the United States to most of the Agencies involved, and on most

subjects to the White House National Security Council.

Bill Dunn: How did they react to your advice?

Ed Brady: When I was an officer there is no good way of saying to most generals, "Well, I've been here four years and you've been here two weeks, so I might know more about it than you do." All he sees is a lieutenant or captain. General Westmoreland understood this and before he left he called me in. He said "Captain Brady, we'd like you to not wear your uniform anymore." Well, I was pretty proud of my uniform, so I didn't get it. I kept badgering him about it, "Why would I do that, what sense does that make? He said, "Well, we just think that if you let your hair grow a little longer and you wore civilian clothes, it'd be a little easier for the senior military leadership to take your advice at face value and not discount it because they know you're a captain." So I never wore my uniform again. From when I was a junior captain to when I mustered out as a junior major two years later, I never had a uniform on. Some officers are very open and interested and want to learn, but a lot don't want to hear it, especially from a very junior officer. Even when I left Vietnam, I was only 31. Working with the State Department and CIA people was easier because they expected different people to be experts at different things. So they tended to listen more, weigh what you had said, and drew their own conclusions.

Bill Dunn: Did you leave as your choice, or were you somehow forced out?

Ed Brady: No, I knew that when North Vietnam attacked, then South Vietnam was going to collapse without US air power. We had lots of intelligence that a major offensive would be launched, and I wanted to leave. I didn't want to be there at the end. I didn't know when it would be, but I thought certainly it would be a matter of some months.

Bill Dunn: Have you been back since?

Ed Brady: No. I talk to a lot of people about it. I talk to a lot of Vietnamese who have been back. I talk to a lot of Americans who have been back. But one of the salient things in my mind is what several CIA people who I worked with in the early days there told me. They had been with Bush when he went back to China, and

they had been previously in China. They were what they used to call in the agency, "Old China Hands." They were selected to go back with Bush when he opened the Consulate there, and almost every one of them hated it and left within six months. I was biased by their stories. When you go back someplace that's so dramatically changed, and not necessarily for the better, then you don't have the same attachment to it. In fact, you most often dislike it. It's not like going someplace you have never been or didn't have so much invested in. So I have never gone but I still think about it and wonder.

Bob Sheldon: Coming back, what kind of a job did you come to?

Ed Brady: I actually came back to go to graduate school. I had decided if I was going to leave I had postponed school long enough. I arranged to take the Graduate Record Examination (GRE) in the US Embassy in Saigon, and I went to the Embassy and took the GRE.

I had a Foreign Service officer say, "I don't know why I have to stand and watch you for five hours while this is done, but that's what the instructions say to do. And I don't know why you are taking exams for college in Saigon. But they told me you could, so I have to do this."

I took the exam and then applied to a number of schools, which was another interesting thing. By then, there was a lot of anti-Vietnam sentiment in the United States. And somebody who stayed there nine years voluntarily was frowned upon in many parts of the country as well as in many institutions since many of them had been centers of anti-war sentiment.

I applied to Princeton, and they told me that they had enough government people in their formal program with the government at the Woodrow Wilson School. They said that they didn't need to add to that by taking somebody on the "so-called civilian side" that was really military. I was not accepted there.

Harvard had a similar story. Georgetown was pretty eager for me to go there, and gave me a half-tuition scholarship. But my father was getting fairly ill then and presumably was going to die soon. Since I'd only seen my family twice in ten years, I thought, well, maybe I ought to go to school in Florida where they live.

The University of Miami in those days already had a pretty good international program

mainly focused on Latin America, but they also had a Sino-Soviet Center. The Director at the time was Leon Goure, some of whose work I had read. I applied there for Russian and Chinese studies, and was accepted and given a full scholarship. I was planning to go there, when the Director of the Foreign Service School in Georgetown called me and wanted to know why I had declined their scholarship. I told him that I had a full scholarship in Miami and only a half-scholarship in Georgetown. And even with the GI bill it was too expensive to live in DC. I just couldn't see the point of it.

He said, "We're in the center of things and they're not. They're a long way away from Washington. We can get speakers here who just take two hours out of their day to be with us. They drive over here and speak for an hour-and-a-half, and go back to their office. For the University of Miami to get people like that to speak, they have to give up a whole day! It's just practical, you get more exposure to the government, higher level people, and more insight into things here than you would there." I said, "Well, I understand that, but money is important to me at this point." He said, "Well, give us 24 hours and I'll call you back." I said, "OK."

He called me up later and said, "I have a double offer to make to you. Georgetown University will double their scholarship and pay all your tuition, and I've lined up an interview at Computer Sciences Corporation (CSC) for a job." I said, "Well, that sounds interesting." I drove up from Florida, and went over to CSC which was in Falls Church, Virginia at the time. I went to the Office of the Director of Field Operations, and I thought, "Well, that sounds familiar to me. I know what field operations are. But what's this in a company?" At the time I didn't know anything about Research and Development, or systems, or how the defense industry was organized, or anything like that.

All the overseas jobs that CSC had were organized under this part of the company—Field Operations—and the deal they had to offer me was I could go to Georgetown for two years. Although it was in the Foreign Service School, it was a quantitatively-based program. For the two years, I could work half-time at CSC.

It turned out that there was a group of Iranian officers who were going to be trained

at Fort Leavenworth, Kansas and at the Navy Postgraduate School in OR. The United States was worried about the Soviets invading through Iran to get to the ocean. The Iranians were going to use a US wargame and take out the US/Soviet database and re-load with Iranian/Soviet data. At CSC, I was going to work part-time with these guys for the two years, then go full time and go back to Iran with them. Then I would stay over there for a couple of years helping them run this wargame in their own country.

After I joined CSC and had worked two or three months, there was unrest in Iran, and the Shah was having political problems. Unbeknownst to me, but perfectly logically, all these guys were on the Shah's side so they didn't go home! [Chuckle] CSC never got the contract, and the rest of what happened in Iran is history.

I got bored working at CSC editing reports and proposals because no one wanted to give a significant job to a part-time graduate student. So I went looking around for something else to do. Remember in 1974, we had a gas crisis. Being on a limited budget, how much gas I used up was important to me. I had rented an apartment at Peach Tree on Route 7 in Falls Church, Virginia. I didn't want to drive out of the way somewhere and use gas that I couldn't afford. That meant I had to find a job at Tyson's Corner or on Route 123. In those days, there wasn't much in that area. One Saturday afternoon I drove all around, and they had these directories outside the little office parks that were there then. I copied down the name and address of every company that had "system" in their name or sounded like it might be related to a system. I sent them all letters, like 20 of them or so, and I got about seven or eight replies.

All of them offered me full-time jobs, and I kept telling them, "I can't work full-time. I'm in school full-time. I need flexible hours. I need this. I need that." And they responded, "We can't do that."

There was a company called The MITRE Corporation, and at the interview there the guy said, "Gee, I don't know why we can't work that out." I thought, perfect! I ended up getting hired by them, and it turned out unknown to me at the time that the person that I was interviewing with, Bill Tidwell, was retired from the CIA.

He had been Chairman of the Overhead Reconnaissance Requirements Committee and ran the whole requirements process for satellite photography. He had been on active duty from the CIA as the Deputy J-2 for Reconnaissance in Vietnam. When he read my resume, he thought "There's something that's not really said here." Ambassador Bob Komer, who had been at the Office of the Ambassador for a while in Saigon and had worked in the White House, was teaching at George Mason University. Tidwell called Komer and said, "Did you ever hear of a guy named Ed Brady?" He said, "Yes. Why are you calling me about him?" He said, "Well, he's looking for a job and he told me he's been turned down all over town and nobody's interested in a veteran or they can't work around his schedule." Reportedly what Bob said, and he was called "Blow-Torch Bob" for a reason, was, "Hire the son-of-a-bitch and get him off the street. We can't afford to have him out there!" [Laughter] I got hired at MITRE, against the wishes of many of the senior people, in fact, I found out later. It seems to be the story of my life, right?

MITRE was starting an Internal Research and Development (IR&D) project in targeting and intelligence with the Army. The reason many senior people didn't want me hired was that at that time many of the managers thought that an IR&D project should be like a sabbatical for somebody who had worked a number of hard years for the company and needed a year off. They didn't see it as something productive that was used to grow business. And so they resented someone being hired off the street to immediately start on an IR&D project.

I started off with a number of people not liking the arrangement I had and what I was doing, as well as how I got hired. I thought that I didn't care what they thought since I was only going to work there part-time for two years, and leave. I worked there part-time on several interesting and very visible projects for two years while I finished the two-year program at Georgetown. By then, I wanted to go to the mathematical/developmental economics doctorate program there. I talked to my Division Director at MITRE and he said, "Well, here's what we'll do. We want to promote you to be

a manager, but if you do that you have to work full-time. And we will pay for your tuition." I said, "Well, as luck would have it, the doctorate program is not a day program like the Foreign Service School. You can take classes at night and in the afternoon." So I accepted.

I decided to go to work full-time and go to school full-time. Seven years later, I was the General Manager at MITRE, and all the senior managers who initially didn't like me worked for me, as they always kept reminding me! [Laughter]

It was kind of funny. One time I was flying across the country with a guy who was my deputy, and he asked me if I remembered him interviewing me. I said, "Well, not really." He said, "Gee, it sticks in my mind just like it was yesterday. I remember all the reasons I didn't want to hire you! [Laughter] Now I work for you!" I said, "Well, I guess you should be happy I don't remember it!"

When I became a Department Head, I headed a Systems Analysis Department that was dedicated to the Army. Later, when I headed the new Navy Division, I also formed a Cost Analysis Center. It was working at MITRE that resulted in my becoming involved with MORS.

Bob Sheldon: Let me backtrack. What did you study at Georgetown?

Ed Brady: A lot of macro and micro economic theory. Finance and banking. There was a lot of econometrics, modeling, and dynamic and linear programming, parametric analysis. I did a lot in analysis of uncertainty because I was interested in developing economies where data is not as rich as in developed economies. Also a new area, now mostly called behavioral economics, and which now has been applied in many areas.

Bob Sheldon: OR kinds of courses?

Ed Brady: Yes, except we called them economic courses since that is where these techniques originated.

Bill Dunn: Do you remember any professors there at the college?

Ed Brady: Father Poirier was one I had. He taught dynamic linear programs. The Jesuit fathers were very good at math.

Bob Sheldon: Did you finish that program?

Ed Brady: I never wrote the dissertation.

Bob Sheldon: So you're ABD (all but dissertation)?

Ed Brady: Yes. Because by the time I was ready to write the dissertation, I was managing a division at MITRE and had 300 people working for me, half of whom were overseas, and I went overseas a week every month.

It was just impossible to take enough time to write a decent dissertation and work. Twice MITRE agreed to let me take a leave of absence, and I started working on my dissertation. Within a week they told me they had a crisis and they needed me to come back. So I gave up. And my professors were all saying they didn't understand why I wanted to get a degree since I already had a better job than they did! [Laughter]

Bob Sheldon: Let's get to your involvement in MORS. How did you get started in MORS?

Ed Brady: It turned out that the IR&D project which was my initial job at MITRE was an analysis of targeting and the use of intelligence for targeting. In those days, the intelligence people and the artillery people were very organizationally separate functions, and half the intelligence people were in what used to be called the Army Security Agency out at Vint Hill Farms in Virginia. Those guys were even more separated from targeting than the normal tactical military intelligence guys. Some in the Army wanted to put together a system that used what we now call all-source intelligence to improve targeting. I led that study.

The Army had set up an office at Army Materiel Command (AMC) on Eisenhower Avenue in Alexandria, VA called the Office of Systems Integration. I think this was General Max Thurman and somebody else's idea. The Office was led by Major General Ira Hunt, and he reported simultaneously to the heads of AMC and Army Training and Doctrine Command (TRADOC). Key in his role was to bridge the requirements and systems development communities, and do architecture and systems analysis. He had seven hand-picked colonels (one for each functional area) and four hand-picked Senior Executive Service (SES) Army civilians, and a major as an aide— that was his entire staff, plus contract help.

MITRE and a couple of other companies like System Development Corporation (SDC),

and R&D Associates were supporting them. I had these big ink blotter pads because when you wrote with ink you could use the paper to blot it. Using colored pencils, I drew a sketch on the blotter pad of all the different places that generated information and the channels by which it went somewhere. I had all the intelligence sources in one color, and all the tactical front line unit reports in another color, and all the Field Artillery Observers reports in another color. I drew the whole thing, and showed how crazy it was to organize this way if the goal was to attack targets. The targeting process was very inefficient and time-consuming. Intelligence was bound to be late getting to the guns, etc., so we should re-cast it all. I reorganized it into the way I thought it should be as a system, and I titled this report "Intelligence, Surveillance, and Target Acquisition." When they sent the report to the printers, they shortened that title to the acronym ISTA, and that's where the term came from.

After that, I did another study on reconnaissance, and ISTA became RISTA. I remember Lt Gen Glenn Kent (Air Force) was around in those days, and we were at this Defense Intelligence Agency (DIA)-hosted Intel conference at MITRE in Bedford, Massachusetts. People were still fighting about how to organize and how to send information. They had a dinner the second night of the meeting, and in the middle of dinner Kent went up to the chair of the meeting and he said, "I'd like to speak to the group." The chair said, "Well, that's fine, Sir, we'll add you to the agenda at the end." Kent said, "No, I want to speak to them now before I lose my train of thought." They were in the middle of serving the entrees, and General Kent can be a pretty insistent guy.

So they gave into him. He said, "This won't take long, but you know, I've been sitting here for two days and I've been trying to understand what "Intelligence" means? What does "Surveillance" mean? And what does "Reconnaissance" mean? And I think I finally have it figured out so I want to tell everybody." [Chuckle]

By then, the room is quiet. He said, "Reconnaissance is when you go out, you look around, you come back. Surveillance is when you go out, you look around for a long time and you come

back. And Intelligence is when you take all that information and keep it so goddamn long, nobody can use it for anything!" [Laughter] And he went and sat down.

All the Intel people got the message, and that's when they started working on how do you break down the green door, and how do you merge things into all-source intelligence, and the DIA began setting up a system called the Department of Defense Intelligence Information System (DODIIS) to speed the production and tactical use of intelligence.

When we were doing the targeting study, we wanted to demonstrate in a model how you could improve the accuracy and rates of fire and effectiveness of the artillery if you rapidly disseminate actionable intelligence and made it targeting data.

Robert Finkelstein was at MITRE then, and he was pretty good at modeling and knew a lot about artillery. He and I teamed up and built this model, and the general liked it a lot and made a lot of decisions based on it. Finkelstein came to me one day and said, "We should go to MORS and present this." I said, "I don't even know what MORS is—what are you talking about?" He said, there's a meeting in West Point four months from now, and it's a three-day, classified meeting. We can go there and we can give a briefing. We can explain how this model works and how we're supporting the general's decision-making with it. That's what the audience there likes to talk about and hear."

I said, "Well, when is it? I'll have to check my school schedule." It turned out I didn't have anything critical going on at the time—no exams or anything—and I said, "I can go. How do I—how do we sign up?" He said, "Oh, I already did all that. I was just trying to talk you into going!"

We went to West Point; it was 1979. We presented our paper, and because the whole flow of work we did over the next three or four years was all systems analysis of this type, we gave a paper at every 6-month meeting (Editors Note: MORS symposia were semiannual at that time.) on our status, results to date, and the next part of the work we were doing.

This work led to another analysis we did for people who worried about what was called "The Second Echelon Attack from the Soviet

Forces," and how could you interrupt these with long-range artillery, missiles, and aircraft? The problem became that the Soviets had a lot of air defense systems, and they were networked. The big analytical question became, "How do you get rid of, or suppress, the enemy networked air defense systems?"

Bob and I started to expand the model to include networks and enemy air defense, and we spent a lot of time finding out about ZSU-23s, SA-8s, the new SA-10s, and other enemy threat systems. We spent a lot of time with the technical intelligence community trying to figure out, "What does the threat information mean in terms of system performance because technical intelligence doesn't always tell you about performance; how to translate what data they do have into performance estimates and how to model it." That study became known as The Suppression of Enemy Air Defenses, which is where the acronym SEAD came from.

For about six years, we were doing this kind of cutting-edge analysis work and the Army was making up mission words out of the titles of the work we were doing. That got us into architecting divisions and brigades, and I ended up doing the architecture for what was called Division 86 in conjunction with Fort Leavenworth people. It was all pretty innovative and exciting, and there was a lot of collaboration between civilian analysts, and the Army user and development communities.

Many in the different communities hated this Integration Office, because from their perspective we were outsiders who were always getting in their knickers and combining things in new ways, and recommending re-organizing things in ways they didn't like. So they lobbied Congress to zero out its budget and get rid of it. The systems analysis part went to Fort Monmouth and became their Systems Division, and the rest went to Fort Leavenworth and became what eventually grew into the National Simulation Center. This meant this type of work was now institutionalized, which was good, but in two different communities, which was not.

These also were the early Army efforts to better understand and organize architecture and integration. Once these efforts became institutionalized, there were often good managers and good people populating the organizations,

but they, once again, were separated organizationally and that separation became very hard to bridge. The requirements community got more separated from the systems design community, and we were basically back where we started from. The Army seems to go through this type of thing cyclically, but it was a good effort.

Bob Sheldon: What was your impression of the first MORS symposium you attended?

Ed Brady: Well, I thought it was very interesting because, when I started at MITRE I basically came directly from the combat side of the military. I thought a system was something you went to the supply room and asked for, and they gave it to you or said they didn't have one. Learning about all this infrastructure of the Defense Department and defense companies was new to me, and I never knew there was any intellectual forum like MORS where you could talk to other people who were doing similar work, in an organized format and forum. Up until then, I'd only been talking to people I ran into, or found while working on other studies for the same general. I thought the Symposium was pretty exciting and interesting, and the idea that there were a lot of other people who were doing interesting work around the country at the time was pretty amazing to me. And it is the only forum that I know of that has the features of allowing classified discussions and bringing people from the different services together into a common place. Over the years, Air Force participation, or Army participation, or Navy participation would wax and wane; but they were all there some of the time, and some of them a lot of the time.

I became more involved in chairing working groups, then symposiums, and then on the Board for a long time. We focused on growing bonds between people who were doing similar work or complementary work, or using the same methods and techniques but with a different kind of application. One person might be doing it for the Air Force for satellites, and somebody else doing it for the Army for targeting, but you had these different common things. It was a place you could get together and talk about your work and progress and issues, and things that were holding you back, and get

some advice from other people. So it was a really, really good forum.

Bill Dunn: And you were obviously hooked because you kept going back to MORS.

Ed Brady: Yes, I was pretty active for about 20 years. I was doing that type work. It was a good forum. It was one of the few places I knew of where you could talk about classified work and in a peer-to-peer kind of discussion, which is not what you get in a normal briefing of your work.

Bob Sheldon: How did you get recruited into a leadership role in the MORS Board of Directors?

Ed Brady: As I mentioned earlier, over a number of years I had chaired quite a few working group sessions, and had several roles in organizing the Symposiums themselves. I'm not sure I remember exactly how it happened that I ran for the Board, except that there were several people and myself who had a common feeling at the time that MORS was not all it should be. Jim Bexfield was in this group, and Dick Garvey and me, and a couple of others.

I have forgotten the exact sequence of who held what Vice Presidencies. We sought to populate the Finance committee, the Management committee, and the Symposium committee amongst us.

We worked out a scheme between us and several other people to gain momentum. People like Lanny Elderkin and several others joined this effort. We led more and more Board committees, and we worked out a plan to have strategic emphasis and continuity.

Initially, I chaired the Symposium committee, when Garvey was President. Then after two years, I became the President. You can't put something strategic into place in one term. It took having a small group of people who were all in basic agreement about the changes we wanted to make. Then, written down as objectives so everybody could see and comment on them, get the Board to agree in general to them, and then populate the positions that implemented them. It really was quite a bit of work over a sustained period.

You had to have the budget guys lined up with the management guys, lined up with the symposium guys. And we deliberately went about that. I think Jim Bexfield was the President

for two years, and then the general idea was I would run for President and replace him and continue this. I ran against Hork Dimon, who was not really part of this movement, and Hork won. Of course, we had to apply the famous Dimon algorithm to the vote count to decide this and that to me was a little suspicious, you know? *[Laughter]*

But there was nothing wrong with it, of course. It was just funny and ironic that his algorithm for breaking a tie had to be used in the case of his own election. Hork and I got along well, so that worked out fine. Skid Masterson came into the group (and became President after Hork), and of course on the Sponsor side I worked most closely with Walt Hollis.

We often had problems with the Navy for some reason. They were not as staunch a supporter, even though they pioneered many OR applications in WW II. Secretary Lehman didn't believe much in systems analysis, and even abolished OP 96, their systems analysis office. All this, of course, impacted MORS.

By accident, I had been at a meeting at the Hudson Institute and Lehman was the after-dinner speaker and it was rumored he was going to be nominated to be the Secretary of the Navy. He gave this speech on the 600-ship Navy, and afterward I asked him what analysis they had done to arrive at 600. He said, "You don't need to do an analysis to arrive at 600. You know the Navy's too small and 600 is a good number, and we can get the money for it, so what do you want an analysis for?" The following week when it was announced he was the Secretary of the Navy, I knew we were in trouble. We weren't likely to get strong support from the Navy on things like MORS and analysis and, sure enough, that's what happened. It was caused as much by his personality and attitude about analysis as anything else.

That's when we invented workshops. It was kind of a fill-in for the meetings that weren't happening anymore because we went from semi-annual to annual Symposiums. After about a year, we figured out that with special focus, smaller workshops could be a good approach, and we went to Walt Hollis and asked for his support. "What if we just held smaller focus meetings on some particular topic that was of concern to the sponsors and we didn't have

a big full symposium? It would be cheaper and more focused, and give a better product back to the government.”

He was interested because it would be more responsive to near term issues, and he got the Air Force to agree and then the Navy. I think the Air Force proponent at the time was Rosie Rosenberg (Major General Robert Rosenberg, a Naval Academy graduate) who was running Air Force Studies and Analysis. Navy support was much less throughout this period, but there always was some important support from the Navy.

In those days, we also had a lot of arms control people active in MORS. The State Department Arms Control and Disarmament Agency had a group of analysts who were very active using game theoretic analysis—Sydell Gold and people like that. They added a very interesting dimension to analysis because they used a lot of interesting techniques different than the standard military simulation approach based in Lanchester equations. It was always interesting hearing what they were doing, and comparing that to what we were doing for the military.

Now, I feel like things have deteriorated in a way. In the beginning, systems analysis and ORSA methods were innovative, and were used to make a lot of fundamental changes in operations and in systems design and acquisition. Analysts and their techniques were either relied on by decision makers in a lot of different ways, or ignored. Now, most everybody uses them, but it's not always an improvement. Our tools and statistics are easy to manipulate in order to obtain an answer you want to hear.

So now it's harder to figure out who is doing good analysis and who isn't. Before, you knew that there was a camp that wouldn't listen to the briefing, so you knew they weren't using any analysis. Now they all use it even if they're using it wrongly to get the outcomes that they want. That's a problem in that once methods and approaches become incorporated and institutionalized, it's easy for everyone to use them even when it's inappropriate given the problem or objective. It also becomes harder to innovate to meet the real dimensions of the problem.

I was also on the Army Science Board. Walt Hollis had a standing panel in the Science Board on analysis and test issues, and I chaired that for

a good number of years. He often gave us assignments through the Science Board that impacted attitudes and views of MORS. For example, one time he had us look at how could the Army improve its use of analysis. Specifically what he wanted us to do was to talk to the Air Force and talk to the Navy and see what differences there were. The Air Force Studies and Analyses Agency was mainly doing what we on the Science Board named “advocacy analysis.”

The leadership knew generally which direction they wanted to go in, and they had the analysis done to support that. I had a lot of problems with this approach initially, but my co-chair was a lawyer, Larry Storch. Larry said, “Gee, Ed, I don't know why you have any problem with that—that's the way the whole legal system works.” There are two advocates, one for the prosecutor and one for the defense. They both do analysis and they both present their advocacy and that's how we make decisions. So why would you believe that's not the same as “independent” analysis?

Nonetheless, the Army has never come to view the Air Force's analysis approach as “independent analysis,” the way the Army views it. There are some very interesting and sharp differences between the services even today on analysis and test approaches, methods, and results.

Another thing that I was very active in when we started the workshops was (and, this was partly because of Walt Hollis and his unique role in the Army) bringing the testing community much more into MORS and being involved with the analytical community. In the test agencies, they don't have “analysts.” They have “evaluators.” And, therefore, they didn't believe they belonged in a professional group with analysts. Of course, we all know it's the same thing. Walt, being from the testing community originally, felt very strongly about having closer relationships between the two communities. I started to push for a number of workshops focused on similar test and analytical issues, and we had four or five of them over a number of years that deliberately brought the test agencies in and invited them to give papers. We got a lot of test people like Marion Williams and others from Air Force Operational Test and

Evaluation Center (AFOTEC), and Marion Bryson from the Army Combat Developments Experimentation Command (CDEC) at Fort Ord, CA to join with us. As a result, MORS even ended up doing a number of events jointly with the International Test and Evaluation Association (ITEA). These efforts were quite successful.

In order to bring the communities together, we held joint MORS and ITEA meetings and got people to cross-fertilize much more in a common form of professionalism. A lot of test planning and set-up should be done with more of a mind towards scenarios, numbers of runs, and data collection and things like that should be grounded in the statistical soundness of outcomes. A lot of it isn't any more. A lot of events today are demonstrations and experiments properly described. They're not analyses. They're not tests. And they can't be replicated.

The same is true, I believe, of human-in-the-loop (HITL) simulations. They give us great insight into organizational behavior and systems, great insight into human problem-solving, but they're not the same as an analysis that can be replicated. Therefore it is not unusual for recommendations based on them to be inaccurate. When you use HITL as part of the test program, it can get perverted if you're not careful about how you judge the outcome of the HITL simulation compared to the tests. There is a common tendency to talk about these different types of activities today as though they're equivalent, and they're not.

Bob Sheldon: Let's backtrack to your leadership of MORS. You were elected to the MORS Board of Directors in 1982 and Vice President for Symposium Operations in 1986. You left the Board in 1987 and then you came back on the Board in 1988 and were elected President shortly thereafter in 1989. Can you talk about that?

Ed Brady: This has happened to me in three or four different societies. I told you awhile ago that I ran and lost to Hork Dimon. I figured, well that's it, I tried and this is the outcome. I'm still interested in MORS, but I'll go back and present papers and chair working groups that I am interested in. I've been on the Board long enough. Then, I forgot exactly what the issue was, but it may have been over finances and sponsor

support. The Society was having a lot of trouble with the symposiums and getting all of the services to participate enough. Senior members of the Board came and asked me if I would run for the Board again and I did. I was elected, and then the next year they asked me to run for President even though I was not on the MORS Executive Council.

I therefore had a pretty clear mandate with the Board of what we had to go do, and the support of the Board to do it. We addressed the whole range of problems. I visited all the sponsors, talked to them about their likes and dislikes regarding the Society and our meetings, what things they thought we were doing well, what things they thought we weren't getting right. We put all their issues into an agenda and put them up in front of the Board, rearranged how we did business, and what products we had. The sponsors after a year and a half said, "We kind of like this." We got it fixed and MORS went on.

Bob Sheldon: You were still on the Board as a Past President. According to my records, you were the only MORS Past President who was still a full-serving member of the Board past your tenure.

Ed Brady: [Laughter.] Yes.

Bob Sheldon: And then, I think you served another year beyond that.

Ed Brady: Well, I like to serve and I like to participate with others, and the groups that I've been most active in, such as the American Institute of Aeronautics and Astronautics (AIAA), Institute of Electrical and Electronics Engineers (IEEE), and MORS. I'm a Fellow in all of them. I kind of follow the same pathway in all of them and I've been on the boards of all them. If you have something to give back and there's a need, then that's the way it works. The same thing happened in the Association for Unmanned Vehicle Systems, and I was elected President there in the same way as I was in MORS. I said that if you want me to come in and help you fix these problems, then I'm willing to make the effort, but I need the unanimous agreement of the Board ahead of time. Go off and have an executive session, and tell me what you want. And in all these societies, I have served in varying capacities after being the President of the Board.

Bob Sheldon: What were the one or two top issues that you fixed during your year as President of MORS?

Ed Brady: The biggest thing was relationships with the sponsors, and a focus on themes that the sponsors felt were important. This is necessary in order to have their support. A Society like MORS cannot just focus on what is professionally interesting to its members. This is true in the science and technology aspects of defense as well. It's how we got Science and Technology Objectives (STOs) and Army Technology Objectives (ATOs). They follow themes that the warfighters believe are important or critical to them. If the warfighters have a need for something like persistent surveillance, then the leadership wants to see the various defense groups focus on that. They want to see the group give some kind of product back in terms of improved communications, or descriptions of problems, or solutions.

The thing that is missing from many of these efforts, and it hampers them and makes them more difficult and less productive than they might be, is lack of funding. You can be on the JCS or the Headquarters, Department of Army or Air Force, and you can want more analysis done in certain areas. MORS can propose it and emphasize it—but, if nobody's funding it, it can't happen.

So we in MORS can have discussions and we can have forums and we can increase the emphasis on things, but unless somebody starts to fund it, no real work gets done. What I was always pushing for with the services is, okay, we will have these forums and we'll have these meetings. But once you see something you like, you've got to figure out how you're going to fund it because if we don't couple this with funding, we don't fundamentally change anything. That's the message that I kept carrying to people. Unless you can put money into your analytical organizations and they can let contracts to industry, then we're not going to make progress on this topic other than a discussion.

Bob Sheldon: My first encounter with you was in the mid-1990s at some workshops on Distributed Interactive Simulation (DIS) and Simulation Validation (SIMVAL).

Ed Brady: Yes, I did a series of those.

Bob Sheldon: Any comments about those workshops?

Ed Brady: A good number of our recommendations have been implemented. We have not yet implemented everything we recommended, and not because it is invalid. I see every day more examples that we were correct.

In the MORS workshops, for example, we made a big point in our reports about pre-processing and post-processing tools among other things. We still are bedeviled by a lack of those in all our simulations. You have to have some way to take all the output and arrange it and create briefings from it that can graphically demonstrate to people what the results are. To do that by hand or with spreadsheets is very time consuming, and frequently it doesn't get done well or done thoroughly because there isn't enough funding to cover it. We don't have proper automated tools that do this for us and help us do this rapidly and accurately. Although there are some interesting commercial graphical tools that are sometimes well used for that.

The same thing goes for input data. You need a pre-processor, an automated tool that helps you arrange the data, check the data, make sure the data's got integrity and isn't flawed, that you aren't missing things and all that kind of stuff because today's simulations use a lot of data. And to do this intuitively or painstakingly by going through spreadsheet after spreadsheet, the timelines are way too long to be relevant.

I would say maybe 30% of what we envisioned has been implemented in the 15 years since. We have a long ways to go yet in those areas. I think those workshops plowed some important ground, and parts of them took root and grew.

I led the effort to take the Simulation Interoperability Standards Organization (SISO) DIS principles and convert them into IEEE's commercial standards, and was active in that for 10 years or so to get that done. Also, I was active with DoD in initiating High Level Architectures (HLAs) and federated simulation architectures.

Many different military groups had simulation issues, as simulation became a way to improve system design and test, and to substitute for lack of space and money in training.

People wanted to do geographically distributed simulations without any mind as to what is the time lag that you can afford between different entities. If you're going to send interactive simulation data from one place to another by satellite, are the lags commensurate with your objective or does it not make sense?

In the Air Force training system, for example, to distribute interaction between a wingman and another wingman across the country usually makes no sense. These two entities' interactions are mostly on very short timelines. But to distribute the tanker planning and rendezvous with that of the strike package, we can and do distribute that. So you want the wingmen in the same facility together, linked together with some kind of high-speed local area network. You can't be sending that data over long, unknown linkages with uncertain arrival times. Because in most of these communication links, you don't know what the time lag is and it's not assured time unless you have them collocated. Yet I still hear people saying "Why don't we just distribute that wingman training?"

We went from DIS to HLA and federated systems, and it works really well in the training community and rehearsal community. I think people have figured out mostly where it makes sense to do it and where it doesn't.

But I am a little nervous about it in the test community when you run a HITL distributed simulation and you have one data point. If you were to try to replicate that, you either are going to have different people playing it or you can have the same people play it, but now they're up on the learning curve and you don't have the same data point anymore. It's not like running a stochastic simulation a couple of thousand times and being sure—confident about the outcomes statistically.

You've got to take that into account when you ask is this valid or not valid and what caused the outcome, and a lot of people don't do that well. They say, well that was the outcome so it has to be right. What we have done in a lot of simulations is to place real soldiers and real operators and users in them. We think the results are more valid because they're more an emulation of real military activity than they are a simulation. It is realistic in its way, but that's not necessarily statistically true. It could

be if we were willing to invest enough time and funding into running a valid number of iterations, but we have seldom been willing to do that.

Bob Sheldon: Give us an update. Since the mid-1990s or so, your professional life has transitioned. Can you talk about that?

Ed Brady: I left MITRE in 1991. I was the Group Vice President and General Manager of the Washington operation. That meant I oversaw all the Navy work, Army work, Defense Information Systems Agency (DISA) work, and a number of civilian agencies, such as National Aeronautics and Space Administration (NASA), Internal Revenue Service (IRS) and Federal Aviation Administration (FAA). I decided I was going to be an independent consultant.

My wife, Faye, and I got married and incorporated all at the same time. Only my wife and I are in this corporation, and that's the way I've worked for 20 years now.

When I was at MITRE and I was thinking about leaving, I interviewed with several big defense firms and they said to me, "Well, you have a great record and it's very impressive and everything, but you never did a proposal so we don't know if you are competitive enough." The reason I went to work for Science Applications International Corporation (SAIC) in my first consulting job is because SAIC was reputed to be the most competitive company on the face of the earth. In fact, it could be downright cut-throat. I figured if I could do a couple of proposals with SAIC and succeed, nobody will ever ask me that question again. That's what happened. Bob Beyster, SAIC's CEO, offered to pay a hundred percent of my time the day after I left MITRE, so I had a guaranteed cash flow.

After several years with SAIC and a few other companies, we did about eight years worth of mergers and acquisitions. We supported about 16 or 20 such activities for six or seven different clients, and we brokered several divestitures and several acquisitions ourselves as investment brokers. Then the money dried up in this arena coming into the late 1990s for smaller acquisitions, and there were only really big mergers and acquisitions. It's one thing for Merrill Lynch to do one. It's quite impossible if you're just a couple of people doing one.

We did strategic acquisitions or divestitures of under-a-hundred-million dollar companies. We made a lot of money, had a lot of fun, and met a lot of different people. I started talking to the various senior executives of companies we worked for as to what were their needs. Almost to a person, they said the same thing. It's getting to be an increasingly competitive environment. All we really have in discretionary funds is for bids and proposals. If you really want to help us strategically, help us map out a strategy of penetrating a new market and help us with the proposal. So I started consulting with the same several companies I could not get a job with ten years earlier! We also spent a number of years consulting with the Defense Advanced Research Projects Agency (DARPA) Information Systems Office.

We also did a lot of consulting with the Defense Modeling and Simulation Office (DMSO) when it was first set up and they worked for Anita Jones. Anita had been on my board at MITRE, so she knew a lot about what I did and asked me to come help with the setting up of that office and writing the first simulation master plan for DoD. She had a couple of people in the office who wrote it, and I reviewed and edited it.

We did a big study for DARPA, which I was the executive director of for two years, regarding advanced battle space command and control technology opportunities. That's basically all the stuff that's still being implemented today into systems in the Services' Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance (C4ISR) areas. It was a key component in the now-terminated Army Future Combat Systems (FCS). The core of this work is to enable distributing information and command and control, and pushing it down into lower echelons making the pointed edge of the spear, as we say, empowered with the knowledge they need to carry out their mission. It's similar in some ways to commercial efforts that focus on "computing at the edge."

Bill Dunn: You became involved with FCS, I think right from the outset? Back in 2002 or so, or maybe even before that.

Ed Brady: Right. I was on my second eight year stint on the Army Science Board, and we

did a study at General John Abrams' request. So I came full circle in a way, incidentally, because remember at the beginning I got out of the Army due to General Creighton Abrams' arrangement. General Creighton Abrams is General John Abrams' father. Years later, I'm working for General John Abrams who was a lieutenant at the time in Vietnam, and now he's a 4-star general.

Frank Kendall (currently the Acting Under Secretary of Defense for Acquisition, Technology and Logistics) and I led a study that General John Abrams requested specifically on the survivability of a 20-ton vehicle. When we went to visit him at TRADOC in Fort Monroe, Virginia, he said, "The reason I want this done is because I have 16 feet of papers and studies and things about how maneuverable it would be. I have 17 feet of how capable it would be. And I have a quarter inch of how survivable it would be. I need a survivability study to make me confident about this."

Frank and I led that study, which also had John Gully from SAIC and senior executives from United Defense-Limited Partnership (UDLP) at the time and International Telephone and Telegraph (ITT). We all went to dinner one night, and had this discussion of whether we thought this would ever come to fruition as a system. We thought it should and we agreed that night at dinner that if it did, we would form the nucleus of a team and we would compete for it.

Two years later, John called me up and said, "You know they're going to do this? Come up and talk to me." We met and formed the SAIC team to compete for FCS against Boeing, General Dynamics, and Lockheed Martin as a DARPA program. SAIC was one of three teams selected. You may remember what happened was that the Army decided under General Shinseki to truncate DARPA's Phase 1 effort, and go directly into the System Development and Demonstration (SDD) phase. The teams rearranged themselves at that point, and SAIC and Boeing teamed together.

Then in the competition, I led the technical volume of the proposal for Boeing. I had already been separately a consultant for Boeing as well as SAIC for years, so this was an easy merger for me. We won that competition, and

I was made the Chief Architect and Chief for Technology. Because of the turmoil in the program and the constant financial adjustments of the budget by Congress, company leadership kept having me lead restructurings of the contract. I guess this was because of my old general manager experience.

For the last four or five years of the program, I worked as much with the finance and contract people as I did with the technical teams. A couple of years prior to the Preliminary Design Review (PDR), it was pretty clear there were difficult network design issues that weren't laid flat. Boeing and SAIC put together a special tiger team of about a hundred people with 13 subteams in it to address different aspects of the network. Brad Cohen from Boeing and I led that, and got all those done for the PDR. Then the Army restructured the program and canceled several systems. And now the whole program has been terminated.

The Army got a new competition underway for an Infantry Fighting Vehicle known as the Ground Combat Vehicle. SAIC is leading a multinational team bidding for this, and I am the technical lead for the proposal which has been underway for almost two years already. We'll see what happens. I'll probably continue to work on the program for a few years if they win it. I'm only 70. But I wouldn't mind retiring.

Because of the pace and intensity of that whole last nine years, I really haven't been able to participate in any professional forums. Even vacations, I'd book them and then cancel them, and I'd book them next time and cancel them. I gave up trying to go on vacation. I gave up scheduling weekends with my wife because for the entire eight years, I've traveled 90 percent of the time. I've been with every technical work force around the country that's involved. Faye is very understanding, and if I cannot get home for a while she comes and visits me.

Bill Dunn: Well, it seems that during your whole career, you don't know how to take a vacation.

Ed Brady: No, nor do I know what field of work I'm in. [*Laughter.*] I mean, I lead design teams, I lead financial teams, I lead resolution

of management issues. I work on restructuring the budgets and that all comes naturally to me. It's part of a strategic understanding and a system's way of looking at things, as well as a good grasp of the details. I've just been fortunate to be able to merge the strategic and tactical perspectives together and understand what the linkages are, how you go from strategy to tactics, and how to develop strategies in the first place. I've always been shaped, I think, by education at the Naval Academy and systems theory, and systems ways of looking at things.

Going from systems analysis to systems engineering to design seemed, to me, pretty natural. And on the dozens of proposals that I have worked on, I almost always led the technical sections of the proposal team and worked with a lot of very fine young people. Companies I have worked with were always implementing cutting edge technologies. I know more about today's technologies than I knew about technology 20 years ago when I left MITRE.

Bob Sheldon: Do you have any parting shots to your colleagues in the MORS Community?

Ed Brady: I think what we tried to do in my tenure at MORS is still what people should focus on. MORS has all the constituent parts of being able to be a highly professional forum in a classified setting. In MORS, people can get together from different agencies and services and talk about their work and techniques and how to improve analysis, as well as how to improve their communication with decision makers. There is an art to using analysis and using it correctly, as well as a science of conducting the analysis. If we focus on that and focus on doing that well with relevant topics, other things will take care of themselves.

Bill Dunn: You were honored by MORS and elected as a Fellow. You are also a winner of the Wanner Award. Can you tell us about how you felt about those?

Ed Brady: Fellows were kind of new when I got elected Fellow. That's part of being old—everything that happens is the first or second time it ever happened. It's funny because all my life I considered myself as a very young person working with much older people. One time I was walking into a meeting in Aberdeen

Proving Ground and I don't remember whether it was E.B. Vandiver or somebody like that turned to me and said, "Hey Ed, how you doing? You feel like you're getting old?" I said, "No, I hadn't even thought about it. I am still working with all you old guys." And referring to the building or auditorium we were walking into he said, "This is a memorial to guys you and I used to work with." And I thought, "I've got to think about this. Maybe I'm not as young as I think."

When I became a Fellow, I thought creating the Fellows was a good step for MORS and its professional growth in maturing as an institution. And I think the Fellows are a very useful adjunct for the Board and the Society. I know many of us get involved in other things and we don't necessarily have the time, but there are always some of the Fellows who do have the time. If the Board has issues or concerns they'd like to talk about, or need a sounding board of somebody who's maybe dealt with similar problems before, then they have the Fellows to go talk to. And it is an honor to be recognized in your community.

Other than the one semester of OR I took at the Naval Academy, I never had an OR course. It's just practical application of economic methods, and other forms of analysis and systems thinking. To me, most of what we do in military OR is use techniques that came out of the economics community. Much of OR also is best done in multidiscipline teams. My education by accident turned out to be multidiscipline, and fit well with modeling and simulation. Also, that's a key part of proposals and engineering today as simulation becomes integrated into basic engineering as a method and a technique. It's just been a natural evolution, and I've been fortunate to have worked at many different aspects of this. From a MORS perspective of analysis, I always felt like I accidentally became an analyst and accidentally came on the Board. So for people after a lot of years to say, we're going to make you Fellow and later also give me the Wanner Award and recognize all the work you did, it's pretty overwhelming.

Bill Dunn: In the past Gulf War and also in the current Iraq and Afghan Wars, the military has been using more and more of embedded

combat analysts. You weren't a combat analyst, *per se*, but you were involved in combat.

Ed Brady: I think that's an excellent thing. Military OR is rooted in the analysis of operations. The UK was very operationally oriented in analyzing the air war over England, and the US Navy was equally operationally oriented in analyzing the sea war in WW II. They developed ASW search theory and convoy theory and they were using real operational statistics. All this is reflected in early OR textbooks like Morse and Kimball. In addition, actually being in a combat theater and talking with people in combat provides analysts a much richer understanding of what they are analyzing.

There's two aspects to military OR that I think are crucial. One is multidiscipline and the other is real operational statistics and data to work from. That's always been the nub of it. In times of war, I think we always go back to it, and it's good for the profession that that happens, as well as useful to the outcome of the war. In my view, it brings the profession back to its roots periodically and refreshes the basics. If you don't have that, there's a tendency for some people to get more and more esoteric about the tools they're using. Many end up caring more about the development of the tools, than they do the proper practice of the art.

Using combat analysts and things like that gets us back to the reality of what we're really here to do, who we're serving, and the purpose of what it's about.

It's interesting you bring that up because I was at dinner recently with a group of people, two of whom are eagerly seeking to go to Kandahar as part of the contingent of ORSAs that are deploying to Afghanistan.

Bob Sheldon: Hork Dimon, in his oral history interview, had some glowing praises for you. He said that when he got elected as MORS President, he was kind of surprised that he was elected and had defeated you, and then he realized he needed a lot of help running the symposium coming up. He turned to you for help. He said you did an excellent job. Any comments about that?

Ed Brady: Hork and I worked well together as I mentioned earlier. Symposiums were always my first love in MORS anyway. I understand

about management, I understand about finance, that's what I have to do for a profession too. But, symposiums to me and later the workshops are the heart and soul of the forum of the exchange of peer views. I was very happy to go back and chair a symposium. Because I've always held that belief, I've probably chaired 40 or 50 national level conferences for different

organizations. Being on a Board is interesting and helpful in the sense that you get to make contributions to the direction of the organization. But, organizing and participating in meetings is the soul of the Society.

Hork may have seen it as helping him out. But for me, that's what I love to do. Fortunately, I do it well also.