American Meteorological Society Oral History Project
Irwin Abrams Oral History
Date of Interview: May 21, 1999
Location: Unknown
Length of Interview: 00:45:24
Interviewer: LC – Laura Cochrane
Transcriber: NCC

Laura Cochrane: This is Laura Cochrane interviewing Irwin Abrams at his home in Acton, Massachusetts. The date is May 20th, 1999 and we will be discussing his career as a meteorologist. Okay. When we last spoke, the last interview, we stopped in Shreveport, Louisiana. It's only where you were stationed after your work in Shreveport.

Irwin Abrams: Well, from Shreveport, I was assigned to Nakhon Phanom in Thailand. We moved cherry up to the state of Washington, where her parents lived. I went on to Nakhon Phanom, which is in the northeast corner of Thailand, where the Mekong River bulges into Laos. I could view Laos right across the river from the location of my BOQ room, bachelor officers' quarters room. That part of Laos, of course, was in the hands of the communist forces, and we were actually an artillery range. There was an unwritten arrangement between the red forces and our people that if they didn't shell us, we wouldn't attack them. We had tremendous firepower, air firepower, at any rate, and apparently that was adequate. We never had an incident in the year I was there. They did come across the river somewhere south of us and linked up with some Thai insurgents who were located some 40 kilometers to the southwest of the base. There were some incidents thought that didn't involve us. The most dangerous thing that actually happened was right before I got there, one of the commercial busses on the way into town was blown up. But it turned out it was blown up by a rival bus company. The town of Nakhon Phanom was the place where Ho Chi Minh lived during his exile from Vietnam. He had donated a standing clock to the town. So, in the town square was, in effect, a memorial to Ho Chi Minh. He hadn't died as yet, but it was a marker. When he did die, I believe the next year was the after I left, the town was in mourning. So, you would see there were some tensions. There occasionally were incidents on the streets of Nakhon Phanom where the mercenaries that protected our base, the Thai mercenaries, would get into fights with the Thai Army. Since they were armed, sometimes degenerated into gun fights on the dirt streets of Nakhon Phanom. It was best, of course, if you weren't there at the time because these guys were using M16 rifles rather than handguns. It could get messy. But the base was in the jungle, and the native population there were animists, very primitive. The more advanced locations had a single light bulb in the hut. Of course, there were many very sophisticated Thais there as well. It was a very interesting place. I did have the opportunity to study Buddhism while I was there with one of the local chaplains. Since Thailand is a Buddhist state, it was a very appropriate study.

LC: What kinds of military operations were you supporting at this space?

IA: Well, we were supporting Igloo White, which was an electronic line along the Ho Chi Minh Trail, microphones, other listening devices, so we could judge the activity on the trail. Microphones were very sensitive. I mean, one of the recordings they had was of someone climbing up a tree trying to get one of the devices that they saw, and falling out of the tree, and you could hear the entire action. The Puff, The Mighty Dragon, which was a C-47 with a Gatling gun mounted in the doorway, was flown out of there. As well as what was known as (Nitnoi?) airways. Nitnoi, I believe, is actually a Korean term meaning small. But these were our largest choppers. They were CH-53s which were super Jolly Green Giants. They were capable of carrying – we would carry, probably twenty-five people. But when they evacuated villages, they would get fifty people on these, including their animals. Some of these were equipped with a Gatling gun on the rear ramp and could be mighty ferocious weapons. We also had A-6s, which is a single engine plane, which is actually used as a bomber. I believe at this

point, there is no secret that the CIA operated out of that base as well. There were many strange airplanes, many strange things going on. We did support certain Laos insurgents or bandits, depending on how whose side you were on. Occasionally, one of their leaders would come down, and we'd host him in our headquarters. But made sure he didn't come through any of the classified portions of the headquarters. There were many strange things going on there. I mean, we knew that there were sympathizers with the other side on our base, and that the other side knew quite a bit about what was going on. One of the operations that was hosted out of there – I was away at the time – was the attempted rescue of a number of our prisoners from a prison camp in Vietnam, which turned out to be empty at the time. I probably would not have been involved in that, but I was involved in many of the other classified operations. We supported Task Force Alpha, which operated Igloo White, amongst other things. Also, the 56th Commando Wing, which is the group that flew the A sixes. There were also some very light aircraft that were flown over Laos at high altitude to relay radio signals. These were intended to be drone. But because of certain problems, they actually carried a pilot. In one of the cases, one of the pilots was injured by enemy fire. Those were the major operations that were going on from that [inaudible] on.

LC: Was doing meteorological work in that part of the world very different from working with [inaudible]?

IA: Oh, yes. It's tropical meteorology. I mean, it's a different form of forecasting. We did have satellite readout, which is one of the reasons I was sent to that base because of my expertise in satellites. We did have radar as well. Again, I have a background in radar meteorology. We were one of the unclassified things that was carried out. There was the Mekong River study. With the radar, we were attempting to follow rainfall and compare it to gages that were actually in the country along the Mekong River. I don't know where the results of this were published, but it was available.

LC: Were you using very different forecasting techniques at this time?

IA: Yeah. In the temperate zones where we live, most of the weather is air mass weather with warm fronts and cold fronts. In the tropics, you track cyclonic and anti-cyclonic storms or weather patterns. You attempt to forecast where they're going to go on the basis of what they've been doing up to that point. It's related but quite different from temperate zone forecasting. Terminal forecasting, the heavy rains were monsoon. Depending on which coast you're forecasting for, certain months would be the wet months, and certain months would be the dry. During the wet months, the storms were very intense and almost work with clockwork precision at such and such a time the skies opened up and it rained for 20 minutes. Then everything was dry because the ground was laterite and incapable of holding moisture, very thin, covered. That's not uncommon in a jungle.

LC: Were you the only meteorologist stationed at this space?

IA: No. I had a group of about thirty. I was the commander. Well, thirty people there were, I believe, about a half a dozen meteorologists of different ranks. The other people were observers, pilot balloon operators, radar technicians. We observe the winds aloft using something called a

pilot balloon, where you'd release a balloon and follow it with a theodolite. Same as a surveyor users, and you determine the wind as far as you could follow it. During the dry seasons, we could follow those balloons 10,000 feet or more. During the night, you attached candles to them, actually, battery operated lights, and you track those. Now, occasionally, the balloons would get shot at sometimes by our own Thai guards. The balloons were filled with hydrogen, and they'd explode dramatically. We generally launched them from a tower near the operation center, near the runway, which is also where we were located. But eventually a large tower was built closer to the perimeter. I worked with higher headquarters to get them to agree not to have us use that tower. I was concerned about my people's safety because they'd be up there by themselves in easy range from the perimeter. I felt it was too dangerous.

LC: Were there any particular operations or events during your year there that are especially memorable?

IA: Well, Rolling Thunder was an ongoing operation of the B-52s. Now you have to understand, we were probably more than 50 miles from Vietnam, where most of the bombs were falling. We could actually hear them at times. These raids were so intense. One of the lighter aspects of my stay there was we were viewing the movie Patton, with its battle scenes. Suddenly, there was machine gun fire, not in the movie. It turned out that the Thai guards were practicing on our perimeter. As I say, they attempted the rescue of some prisoners from the base. Most of the operations, of course, were classified at the time. Some of the incursions into Cambodia, the air incursions, took place from Nakhon Phanom.

LC: Did you learn a lot about the culture in that area?

IA: Oh, yeah. I learned quite a bit about Thailand itself and the culture.

LC: It's been interesting to live in that part of the world.

IA: Yes, interesting and sometimes disturbing. I mean, I got to know one of the Thai guards rather well. He was coming under the impression that everything that was American was good and everything that was Thai was bad, which is a very bad situation for a person that was destined to live in Thailand for his life. He was fairly well educated. His English was excellent. But this is the type of thing that often happens when cultures meet under a situation like that. It would be difficult for him. It was difficult for some of the Thai officers that were stationed with us. One of the Thai weather officers, upon hearing he was being transferred from Bangkok to Nakhon Phanom, shot himself in the foot. They sent him anyway. It was considered by the Bangkok Thai a very remote base. But while we were there, it was once visited by the king Bhumibol, I believe is his name. We got to see the extreme respect that the Thai people feel towards their king and queen. The King is looked on as almost a divinity. Since the king's face appears on the currency, a number of instances occurred where people were sent to jail for stamping on the currency. The foot, incidentally, is the most profane part of the body in Buddhism. The head is sacred. In fact, in polite company, you're not supposed to show the soles of your feet. So, while we were there, a group of Mormon missionaries got themselves into very serious trouble by climbing on a Buddha. One of them stepped on the head of the Buddha, which is a very profane act. They wound up in jail. Thai jails are not up to U.S. standards. So,

it was a very serious incident. Eventually, after the news quieted down, they slipped him out of the country.

LC: Did you visit many of the villages around where you were stationed,

IA: Just Nakhon Phanom. As I say, the local people were pretty primitive, and we were not encouraged to visit them. You could get a taste of Thai life downtown. It was important to know which places you could eat and could not eat. One of the problems we had was that any medication, any drug, was available over the counter, not controlled in any way. That offered temptations to our troops. As is true in many of the primitive parts of world, prostitution was rife. It was another problem, the associated diseases. The problem of these relatively young men – and most of the people there were male – getting into a relationship with some of these women. My clerk who was in his mid-thirties, actually married one. They were eventually trying to arrange so she and her kids could come back into the States. One of my men did get mixed up with one of these women did have a long term relationship. One day, I asked him how he was doing, and he almost broke down in tears. So, we had a long conference. It turned out he was coming to the end of his tour, and he was engaged to an American woman. He felt that he had to break off this relationship. He had to find some way of cleansing himself. Working with the chaplain and the authorities, we managed to get him transferred to another base, have his tour extended for, I believe it was six months, and he was able to straighten himself out, and he got out of his depression. Very difficult type of situation, but not at all atypical of a remote location. There are always tremendous strains on people. They work very hard. Our typical day was ten hours, six days a week.

LC: Did your officer who married –

IA: That wasn't an officer –

LC: Oh, I'm sorry.

IA: He was a sergeant.

LC: Did they come back to the United States?

IA: They were still there when I left. He kept getting extensions.

LC: So, you were there for one year.

IA: Exactly a year.

LC: What year was that?

IA: It was the year 1970. I arrived and departed in February. I was just there, January, February of [19]71.

LC: After you came back to the United States, did you remain in the military?

IA: Oh, yes. I asked the Air Force – we were supposed to have, you know, a choice coming back from a combat area. I asked for an assignment, either to Germany or the east coast or the west coast. I was sent to Utah.

LC: It was close. [laughter]

IA: Well, it was the shore of the Great Lake, the Great Salt Lake. It was another very interesting assignment, quite different. Again, I was the commander of the weather station there. Again, about thirty people only there. I had an American female secretary, civilian, which made my life a lot easier. I mean, I did a lot less typing. You have all these reports that you have to turn out. It was a very interesting assignment. Amongst the things that were going on there was the flight testing of the F4 when they fought major maintenance on it. One of the things they tested was the emergency fuel system. In order to test it properly, they flew until the aircraft was out of fuel. Now, jets go over to an emergency, a small emergency tank, and they're going to land. I mean, the engine is going to quit. They get the warning and they have to land immediately. It's pretty hairy, but that's one of the things they tested. My radiosonde operation was on the other shore of the lake. So, I'd occasionally have to fly by helicopter to the other shore to visit my installation. A radiosonde operation is similar to the pilot balloon, only it's done by radio. You can track that up to 50,000 or 100,000 feet. Instead of a theodolite, you track it by radio signals, a radio theodolite. It sends back information. It sends back the temperature. It sends back the humidity and the pressure. So, there's stations like this throughout the United States, in fact, throughout the world.

LC: How long were you in Utah?

IA: Close to three years.

LC: Where did you end up after that?

IA: I went to Washington, D.C., to the Environmental Technical Application Center, which was an organization that attempted to use climatology to study the history of weather for various applications to help the Air Force. It was there that I suddenly discovered that I was in charge of some computer operations, never having had anything to do with computers, because they really hardly existed. It was very interesting. I learned quite a bit about computers. We were on what has been called the ARPA or ARPANET, the Advanced Research Projects Agency Network, which was the forerunner to the internet. We communicated via that net with other computers around the country. In fact, we would run programs on, say, a computer in Illinois, which was much more powerful than what we had. We'd share time. We'd exchange the use of our climatological data for what is called CPU time, central processing unit time, the heart of the computer. It was a very interesting situation.

LC: Was the use of computers in the study of weather something that had just started about this time?

IA: No. The importance of computers in weather was really recognized in the 1950s. In fact,

while I was in the Azores, the first computer maps were disseminated via the facsimile system. But the computers increased in power. The most powerful computers are almost always used for weather studies, because of the global nature. The amounts of information is tremendous. The only things that required larger computers would be atomic studies, bombs, and things like that. But weather was one of the first major applications of the computers. It's just that I'd never had any access to them. Over the facsimile, you get a map, and this was what the computer said was going to happen. I had to learn much more about computers there.

LC: So, you said this was for supporting Air Force.

IA: Well, actually, really, we supported the Defense Department and, in fact, the Central Intelligence Agency as well from there. ETAC was a named agency, which meant that it supported the Defense Department, and whatever the Defense Department needed, it could come directly to ETAC. My group was a scientific development group. We developed forecast techniques based on climatology. We developed the program to simulate a flight through a climatological database, which was actually used in the development of the A-10, which is an airplane that's still flying. The question arose whether what sort of icing the A-10 would encounter. By simulating three years of missions through our climatological database, the Air Force was able to decide what sort of icing equipment the A-10 would have to have during the design phase. Which, of course, is much cheaper than taking an airplane, building an airplane, and then finding you've got problems. So, this actually was a pretty historic situation. It was my group that designed the database, and later designed the programs, the first programs to use it. So, again, I had to learn quite a bit about computers. I was fortunate enough to be given some time to attend the Defense Computer Institute, which was also located there.

LC: How long were you in D.C. then?

IA: Just a year.

LC: Okay. Where were you after that?

IA: I retired from the Air Force.

LC: Okay. What were the circumstances surrounding that decision?

IA: I'd been in the Air Force for twenty years. I felt I had a full career. The next rank I'd have to go for was full colonel, and I didn't really find that particularly desirable. Your life changes somewhat as you go up in ranks, as you do in civilian life as well. But I decided I'd had a full career, and I did not want to participate in anything like Vietnam again. So, I felt it was my time to get out.

LC: What did you expect in terms of jobs after leaving the military in the private sector?

IA: Well, I actually took a course on the transition while I was there. I didn't exactly have an offer, but I was under consideration for a job with the NOAA's satellite group. Fortunately, however, I also started going after a civilian job. Because the day I filed my retirement

paperwork was the day that then President Nixon announced a freeze on hiring for the government. So, my satellite job would not be available. I was fortunate – this was 1974, we were in a recession. I managed to get one job interview and a job offer, which took me to Concord, Massachusetts. I began work as a civilian air quality meteorologist.

LC: Where were you working in Concord?

IA: I was working right near Hanscom, but it had no connection with Hanscom. I was working with a company environmental research and technology that was specializing in monitoring air quality around plants or areas that needed to monitor the quality. My major client was American Electric Power, which had power companies throughout the Midwest, mostly coal burning. We also worked with Dow Chemical in Midland, Michigan. They had a plant that the first plant that co-generated electricity and steam. It used the steam from its generating facilities for its chemical processes. It also sold electricity back to, I believe it was Detroit Edison the excess of their production. The plant was so large that it produced enough electricity for a fairly substantial city. The fuel was delivered in train loads of coal, train loads a day, or via a pipeline oil and gas. Some of the furnaces were capable of burning coal, oil, or gas. What we were experimenting with was keeping them within the air quality guidelines by forecasting the weather condition at their plant. Obviously, if there was a great deal of mixing, they could use coal, which produces quite a few pollutants. The pollutant would be diluted and disseminated. Under the worst conditions, they had to burn gas, which produces almost no pollutants, a little nitrate of the nitrous oxides, nitrogen oxides rather.

LC: But to finish up, you were measuring for environmental problems or looking for pollution then?

IA: Yes. Well, we were advising companies on whether or not they had pollution problems with our monitoring network. American Electric Power was so big. I believe we had nine networks operating for them. They were so big that the EPA came to them for information on the environment because their monitoring network was so large. They had more data than the EPA. Just as the state of Michigan used Dow Chemical's data because it had much more data than the state of Michigan, the state of Michigan had a small budget. It could afford one entry level meteorologist, while Dow Chemical could hire an entire company of meteorologists,

LC: How long did you work for that company?

IA: I think it was seven years.

LC: What were the circumstances then that brought you to where you are now working at the AMS?

IA: I went to a couple of other companies in between. But I've been a member of the AMS since 1954. I was out of work between jobs, as they say. One of my friends noticed the ad in the AMS' job bulletin. They needed a technical editor. I applied and was fortunate enough to get the job. That brought me to AMS about nine years ago.

LC: Are you planning to stay there a while longer?

IA: Oh, yes. Well, I am gradually entering my retirement. I've cut back. I'm only working four days a week. I'm actually telecommuting today. I was on the computer before you came. I'm working remotely at AMS. I bring homework. So, I work at home two days a week. I work in the office two days a week. So, I work now a total of four days a week. Eventually, we'll probably cut back to three days a week, and then we'll see. As long as I'm able, I probably will continue to work there.

LC: Do you do your own research as well?

IA: Not really, no. I'm a technical editor. That's what I'm focused on.

LC: Do you focus on a certain type of literature in satellites and radar?

IA: Yes. Well, I'm the technical editor for the Journal of Climatology. I've just given up weather and forecasting. I was also the technical editor for that. I was the technical editor for the bulletin of the AMS. But part of my cutback is that I now only handle the peer review system for the bulletin. I handle the eternal climate, which has grown to the point where we're going to have two issues every month. Historically, it's only been one a month. It's a fairly large journal.

LC: Actually, I think we're just at the end of the tape.

IA: Great.

LC: So, probably a good time to stop.

[end of transcript]