

**Transcription: Chuck Zemach Grand Canyon Historical Society Oral History**

**Interviewee:** Chuck Zemach (CZ)  
**Interviewer:** Tom Martin (TM)  
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**Keys: Grand Canyon River Rafting, SALT 1, SALT 2, Explorer Post 20, Quartzite Falls**

TM: Today is January 13, 2015, and with me on the phone today is Charles "Chuck" Zemach. We're interviewing Chuck today about his experiences in Grand Canyon. Chuck, what year were you born?

CZ: I was born 1930. That makes me 84 currently.

TM: Okay, where were you born?

CZ: I was born in Los Angeles. My family moved to New York City when I was three years old and I grew up there.

TM: What did your parents do?

CZ: My parents both came from Russia. They were in a theatrical troupe, which was founded by my father in Moscow in the turbulent times during the Bolshevik Revolution. In the 1920s, they had permission from the Soviet government to tour throughout Europe. When they got to Paris, they decided not to go back. They eventually made their way to America.

TM: Wow.

CZ: I remember one story told by my mother. My father had written to a friend in Moscow. This was from Paris in 1926. He asked, "How are things going in Russia?" and would the friend advise them to return? The friend wrote back, "If you think it's a good idea to go to Hell to light a cigarette, then, by all means, come back."

TM: Wow.

CZ: Those were turbulent times. My father spent time in jail. This was a Hebrew theater group emphasizing the Hebrew language, and that wasn't politically correct in the early days of the Soviet regime. Fortunately for me, my parents succeeded in leaving and came to America.

TM: So you grew up in New York City, then?

CZ: I grew up in New York City and went to Stuyvesant high school. I went to Harvard College in 1947, in Cambridge, Mass. and never came back to New York.

TM: Ok. Did you do any outing activities away from the city when you were growing up?

CZ: Yes. New York City is an urban area and one can wonder whether one has any wilderness experiences or natural environment experiences. But, in fact, people who could would go off for a vacation of some sort. I went to summer camp in the Catskills in lower New York. Also, I had asthma when I was a child, and for rehabilitation, I was parked on a farm in the Catskill mountains for several years, in 1936-1937. The Catskills are pretty tame compared to western mountains. There are rolling hills and beautiful country. I had a buddy of my own age; we were about 6 to 7 at the time. We used to run around and enjoy the wild countryside. It wasn't wild, but it was countryside. We had a favorite sport, namely, tree climbing. In the area around the farmhouse where we lived, we knew all the trees that were climbable. I returned to New York City in 1938. My father died in 1939 when I was 9. In my high-school years, my mother and I would go to Lake Placid in northern New York state, a mountainous area, for summers. She would leave me at Lake Placid when she would have to return home for work. There was Lake Placid, and Mirror Lake, and canoeing, and the Adirondack Mountains. I climbed Mt. McIntyre, the second-highest mountain in New York State, and still remember the experience. This was a one-day trip, and Mt. McIntyre is 5,112 feet high, not too much by western standards, but pretty good for a kid.

TM: Did you swim? Did you learn how to swim there on Lake Placid?

CZ: I learned how to swim in the Catskills at the summer camp. I spent an awful lot of time in the water in Lake Placid and in Mirror Lake. The daily activity was going to Mirror Lake; it was a better lake for swimming, and we'd swim there almost every day. We stayed at a guest house on the shore of Lake Placid itself, which offered canoes to the guests, so I did a lot of canoeing on the lake.

TM: Nice. So, could I say that water was not something to fear, but water was fun?

CZ: Yes, Water was fun.

TM: Ok

CZ: And, even from the urban depths of New York City, one gets out into the Adirondacks; that's beautiful country. So, I learned a little bit about nature. Eventually, I joined the faculty of the University of California, Berkeley, in the physics department, and there was all that nature in California to learn about.

TM: Ok, so slow down a minute. Back up. You went to college in 1947; that was before you got to California, is that right?

CZ: That's right. '47 to '51 for college.

TM: What did you study? What was your degree in? Your undergrad?

CZ: I majored in physics and then I got a PhD at Harvard in theoretical physics. I was in elementary-particle physics. After graduation from college, I spent a year bumming around Europe. I got a so-called travelling fellowship, which I spent on my own in Europe, visiting as many countries as I could, including some of north Africa.

TM: What year was that?

CZ: Summer of 1951 to summer of 1952.

TM: Ok

CZ: And, just to continue the biography, I spent an academic year, Fall 1956 to Spring 1957 at the University of Pennsylvania as an instructor. In those days, they still had that lowly rank. The summer before Pennsylvania, I drove across the country to California with a friend from Cambridge. This friend had done his undergraduate training at Cal Tech and he really knew the west. He served as a guide to western national parks. I remember, in particular, Arches, Bryce, Zion, the Tetons, Yosemite, and a quick look at the north rim of the Grand Canyon. My friend was a mountain climber and had climbed the Grand Teton. He gave me a climbing lesson once, but I never followed that up.

TM: I'm curious to go back to the year that you spent in Europe, all the way down to northern Africa. Traveling on your own, I'm assuming you stayed in hostels? Or, what was, back in the early '50s?

CZ: Oh, things were cheaper in those days.

TM: Ok

CZ: I had a \$2,500 scholarship, called a Shaw travelling fellowship from Harvard College, because I did pretty well at Harvard. I lived a year on that, averaging about a dollar per night for a hotel and a dollar for dinner. The consulates in America of the European countries were quite interested in tourists and would supply rather complete price-lists for hotels and restaurants. In 1951-52, Europe had not fully recovered from the World War, and there was a black market in many currencies. For example, the official exchange rates for one dollar were 350 francs in France, 15 schillings in Austria, 4 lire in Turkey, etc., assuming my memory today is reasonably accurate. My travel bible in those days, "Fielding's Travel Guide to Europe" cited a New York bank which gave 500 francs, 26 schillings, 12 lire per dollar. Locals constantly approached travelers to offer a good deal. In Paris, there was Monsieur Max at the Café Le Tresor, a legend among American travelers. A wonderful time for people like me to be young and free and American, even if poor.

TM: What did you take away from that year travelling?

CZ: I spent an intense amount of time trying to learn languages. I also spoke to as many people as possible, in whatever language was available, to get their views on their country and current affairs. This included visiting offices of newspapers, student organizations, and political parties, and spending evenings in local cafés. In 1951-52, Naziism, Fascism, Communism and the War were on everyone's minds.

TM: Ok

CZ: The language I had taken in college was German. That had given me an excellent reading ability. I had something like 4,000 word cards, so I had a vocabulary of at least 4,000 words. Then I got to Germany and found that I couldn't speak the common words. I had bought a small (100 cc) motorcycle for \$400 in Germany, and was confronted with words like tires, brakes, carburetor, spark plugs, driver's license, steering wheel, gas station, highway, road map. After some months, with a pocket dictionary,

reading a newspaper every day, and viewing a movie almost every day, I could, in short conversations, pass myself off as German.

TM: Nice.

CZ: And then I spent another intense period on Italian and French.

TM: Ok

CZ: Later on, I spent a number of years in Italy, so I got to be pretty good at Italian, half-way good at French, and quarter-way at Spanish. I did learn to count to 100 in the language of each country that I visited, now, mostly forgotten.

TM: So, how did that experience in Europe, now it's 1956-ish and you're in California. You're touring, you're in Yosemite, the Tetons, did you see any similarities there, or was it just, 'this is the American west and I've never seen anything like it.' And, I guess I'm trying to see if there's a tie over here, knowing that now you live in Santa Fe, which I should have mentioned at the start of this interview. So, it does seem as though, eventually, having travelled a good chunk of the world here, you've settled in the American west.

CZ: Yes, the Rockies and the Sierras are beautiful mountains. There's nothing to beat the Alps, though. I spent a lot of time on my motorcycle back and forth on the small Austrian roads in the Austrian Alps and taking all the cable cars to the tops of the mountains. That's gorgeous stuff. The Tetons are the closest things in this country that look like Alps.

TM: Yes. And so, to the Tetons, that was, and Yosemite, your first introduction. What year was that? Was that 1955?

CZ: That would be the summer of 1956, when my friend and I drove west. We had both been post-docs at MIT the preceding year. In California, we were visiting the Stanford physics department.

TM: And did you see the Grand Canyon on that national parks tour?

CZ: We toured the north rim of the Grand Canyon. We hiked down perhaps a few miles, not much.

TM: Ok. From the north rim?

CZ: Yes, from the north rim.

TM: Ok, 1956. And so then where did you go?

CZ: After Stanford, I flew back to Philadelphia, where I had an instructor position in the physics department of the University of Pennsylvania. But I had fallen in love with the west, and was determined not to stay in dismal Philadelphia too long. I obtained a post-doc at the University of California, Berkeley, in theoretical physics. The next summer, 1957, I returned to California, and with my wife Mary remained until 1970.

TM: Ok

CZ: This was the first of three times that I had a job with tenure, or an assurance of tenure, that I walked away from. I was offered an assistant professorship at Pennsylvania with a promise of eventual associate and full professorship, but I turned that down for a post-doc at UC Berkeley because I decided that Berkeley was really the land of enchantment. I always remembered the advice of Paul Schubert, the principal speaker at my high school graduation. Mr. Schubert was an earlier graduate of my high school and had become a well-known naval authority. He said "In your future lives, you will have opportunities to choose between security and opportunity. You should choose opportunity."

TM: Was it Berkeley or was it the school because of theoretical physics?

CZ: It was all of it including romantic California.

TM: There was a lot going on in Berkeley at the time.

CZ: Yes, I was in love with California at that time. And I got married about the same time.

TM: Where did you meet Mary, your wife?

CZ: In Philadelphia.

TM: Ok

CZ: We met in Philadelphia toward the end of May or so of '57. I went off to my new job and she followed me a few months later, and we married in California.

TM: And that would be 1958-ish.

CZ: Yes

TM: What was Mary doing in Philadelphia at the time?

CZ: She was a technician in a medical lab, doing medical research.

TM: Ok

CZ: She was actually a vivisectionist. They did experiments on mice and dogs. She got to be pretty good as an animal surgeon. When we came out to Berkeley, she found a similar job in the Donner Laboratory, a part of the University. She became part of a medical research team, studying how the liver works.

TM: Ok. How long did you guys end up staying there in Berkeley?

CZ: We stayed thirteen years, leaving in the summer of 1970.

TM: Ok

CZ: By that time, I was a full professor at Berkeley, well established, and in the beginning, I thought that my life's course had come close to the ideal. But then came the Goldwater-Johnson election campaign of 1968. University authorities imposed unwise limitations on student political activity, purportedly to expedite traffic on campus, provoking a vigorous student reaction, provoking, in turn, overreaction by the authorities, and concurrently, exposing other ills within the University community. Then arose a student revolution which convulsed the University, and the town, and eventually spread to other universities across the country. That's a long subject in itself that I don't think is an appropriate topic here.

TM: Yea, that's a whole another interview.

CZ: That's a whole other topic. But there was a great deal of unpleasantness. Hippies and drug addicts across the country got the word that Berkeley was the place to be. They started infesting it, Berkeley became the bad-check cashing capital of the United States, street crime including murders proliferated, the public schools deteriorated, there was a decline in the quality of life.

TM: In those thirteen years that you were at Berkeley, did you spend time in the Sierras?

CZ: Very often. Especially, Yosemite for hiking and camping (much less crowded and more accessible than today). Our first try at western river running was at Grand Teton National Park. At the Jenny Lake campground (which doesn't exist anymore, alas), we met some people from Salt Lake City, one of whom had bought fifty fold-boats from a Japanese supplier, and was selling them. We bought two \$50 fold-boats from him. Do you know what a fold-boat is?

TM: Yes, absolutely.

CZ: Ours were 2-man paddle boats something like fragile kayaks, with wooden frames tightly enclosed within canvas covers. Each boat folded into a compact suitcase of about thirty pounds. Good enough for class-2 water, and more for an intrepid boater.

TM: And you bought two of these?

CZ: We bought two because by that time we had two children.

TM: And what year was this?

CZ: This was in 1967.

TM: Ok. And so in '67 you had a lot of canoeing experience. And a fold-boat...

CZ: Ours were 2-person boats with double-ended paddles.

TM: Not too dissimilar.

CZ: I went down the Snake River past the Tetons, in a fold-boat with one of these Salt Lake City folks.

TM: Did Mary have any canoeing or swimming experience as a child?

CZ: Yes, she was always an outdoor person. She was born and grew up in Honolulu, Hawaii and her father was a botany professor. Her father took his students and some members of the family on botany collecting trips on weekends. So she did a lot of hiking, but no canoeing in Hawaii. She would hike barefoot because she didn't start wearing shoes until she got to high school. A lot of kids in Hawaii were like that.

TM: And did she swim?

CZ: Oh, she corrected me. She says she didn't start wearing shoes 'til the eighth grade.

TM: Ok. Ok, And did she swim in the ocean a lot?

CZ: Oh yes. There was a lot of ocean swimming. Their favorite beach was Makapu'u, which had enormous waves.

TM: Wow

CZ: Waikiki beach was considered pretty tame by those people.

TM: Ok, so you bought these two fold-boats, you went down the Snake River by the Tetons there in '67. And then where did you go from there with those boats?

CZ: We brought them back to California. We and our kids boated on California lakes and a few times off the Pacific shore. Another fold-boat river trip down the Snake past the Tetons in 1970. We spent a summer in Aspen, Colorado, with many scenic lakes nearby. The idea of river-running as a recreation of preference, or the development of river-running skills, did not really occur to us until later. From California, we moved to Washington, D.C. in 1970. Older son Art, at age 12, joined a Boy Scout Troop which aimed at doing a wilderness trip every weekend, and I often went along. One of them was a trip, in rental canoes, down the Cacapon River, which you may not have heard of.

TM: No

CZ: In West Virginia, a two-day trip with class-two rapids, and an occasional class-three.

TM: And did you take the fold boats for that?

CZ: No, we had canoes for that. Which we had rented from somewhere.

TM: Ok. And what were you doing in D.C. then?

CZ: I had decided that I was fed up with Berkeley. That was the second time I had tenure and walked away from it. I spent a year, 1969-70, as a guest physicist, at the Stanford Linear Accelerator (SLAC). The Deputy Director was Sidney Drell, who was also a member of the President's Scientific Advisory Committee (PSAC), at the time. He was aware that the U.S. government was about to commence the Strategic Arms Limitation Talks (SALT) with the Soviet Union, aimed at controlling the nuclear arms competition between the two countries. Under Sid Drell's advice and recommendation, I joined the Arms Control and Disarmament Agency (ACDA), part of the US State Department complex. I was involved in

the SALT negotiations until 1976, first in the Arms Control Agency and then on the Policy Planning Staff of the State Department, which is a select group in the State Department. That was an enjoyable experience.

TM: What years were you working there?

CZ: From June, 1970 to July, 1974 in ACDA; 1974 to September, 1976 on the Policy Planning staff. This was under Kissinger and Nixon, and we lived through Watergate, and then President Ford as the successor to Nixon. In this period, the SALT 1 negotiations were concluded and then the SALT 2 negotiations were begun. I came to Los Alamos to work at the Los Alamos laboratory in 1976. By that time, I was a bit disenchanted with good old Washington politics. I wanted to get back to physics, and took up an earlier offer from Los Alamos.

TM: Can you just recap for me SALT 1 and SALT 2?

CZ: The negotiations between the US and the USSR on SALT 1 extended from 1969 to 1972. The follow-on negotiations on SALT 2 continued to 1979. SALT 1 consisted of two agreements. First, the Anti-Ballistic Missile (ABM) Treaty, which settled the question of whether the two rivals, the U.S. and the U.S.S.R., would continue building anti-ballistic missile facilities to counter the nuclear ballistic missiles. Accompanying that, was the so-called Interim Agreement on offensive missiles, which was a preliminary agreement with an understanding that after SALT 1, comprehensive limitations on offensive nuclear weapons would be negotiated. There were three components to that: land-based intercontinental ballistic missiles, submarine-based ballistic missiles, bombs carried by intercontinental bombers. SALT 1 came to an incompletely successful end in 1972, and the agreements were signed about August, 1972. The SALT 2 process began after that, and wasn't completed until the Carter administration had replaced the Ford administration.

SALT was successful in several ways. It set limits on both sides to the nuclear arms race, and the attendant costs. It encouraged many of the oncoming generation of Soviet diplomats to look upon the US with less hostility. It prepared the way for the more far-reaching arms reductions of the 1980's. It may have facilitated, but certainly did not retard, the reforms of Gorbachev. On the other hand, there were all sorts of blocks and hang-ups, primitive intransigence on the Soviet side due to their heritage of a secretive and closed society, and enough blunders on our side to make an American diplomat cringe. Those were the years when Kissinger was running U.S. foreign policy.

TM: Ok. So, there's a whole other interview right there.

CZ: Oh, yes.

TM. So, in this time period, from leaving Berkeley in 1970 and then working through, well, into the Carter administration in '76-ish.

CZ: I left in September, 1976. Carter was elected November 1976 and took office in 1977.

TM: I'm assuming, in that six-year period, a lot of international travel, negotiations.

CZ: Yes, I was on the SALT delegation, first of all, in Helsinki, and quite a bit of time in Geneva, where SALT 2 negotiations took place. In one six-month period, I had my family with me. We had three children by that time. Lots of skiing in France on weekends, from Geneva. We traveled a lot and our kids got a



good dose of the Swiss and French mountains. Our two older kids were in a Swiss school that catered to foreign students and they learned a fair bit of French. This led our daughter Dorothy to major in French in college.

TM: I'm assuming, correct me out here, please, that in that six-year period, 1970, 1976, you weren't doing a lot of fold-boat work, not a lot of canoeing or river running. More international.

CZ: My oldest son, Art, and I did this canoe trip on the Cacapon in West Virginia. Later, Art, with his scout troop, did a 1-week canoe trip down the Alagash, in Maine. My wife, on the other hand, was running a Girl Scout troop, and she organized quite an expedition. She got her Girl Scout troop together, and the parents cooperated, and she had rented a bus and a bus driver. During school vacation, the bus made a trip out west, to the Tetons and Ten Sleep, Wyoming and back, seeing many sites. There were 47 teenage girl scouts...

TM: 47?

CZ: Girls scouts, yes, on this bus.

TM: That's huge! That's a lot of kids.

CZ: This was a three-week camping trip. The Girl Scout organization had restrictive regulations, so they had to stay at approved campgrounds, approved churches, a synagogue, state parks, national parks, but they had a three-week outing. And also, while she was running this Girl Scout troop, they too rented canoes and had canoe outings from Washington, D.C.

TM: Ok. So, still doing, actually, quite a number of outings, either in the Alps or canoeing and exploring.

CZ: Yes, we were always working in vacation trips one way or another.

TM: So, in 1977, in Los Alamos?

CZ: We came to Los Alamos at the end of August, 1976 and had our fold-boats. I had thought of doing rivers with the fold-boats. From Berkeley in 1968, we had spent a summer in Aspen, Colorado, on the Roaring Fork River, which is quite a kayaking stream. I remember telling some kayaker about these fold-boats. He threw up his hands, and said, "What you want to do is go to some of these kayak training sessions and that'll open your eyes to what it's like." I'm glad we didn't launch the fold-boats down the Roaring Fork, which is a serious class-4 river.

TM: So, Los Alamos had a core group of people like James Fretwell, I'm thinking, a number of other people, the Cernicek's, the Madland's, the Yeamans', ...

CZ: That's right, you know a number of the leaders.

TM: Well, just their names, but, there was a big push to explore rivers there. Did you land into that group? How did that work?

CZ: Los Alamos was a hotbed of river running. There was an active core of more than a dozen rafters, kayakers, canoeists, including some women, who aimed to get on a river at every opportunity during the boating season. They were welcoming to beginners like me.

Explorer Post 20 of the Boy Scouts, a river-running club for high-school boys, had been founded by James (Stretch) Fretwell and Bob Emigh, and included, as adult advisors, Forrest Strong, Bill Bernard, Fred and Chris Parker, Merlin Wheeler, Dave Yeamans, who also was important in Grand Canyon activities, and later on, myself. In the '70's and '80's, the Post had about 30 boys. With profits from its concession at the Los Alamos ski-hill café during the ski season, the Post maintained a school bus and had acquired a fleet of fifteen Maravia 12-foot PVC "Elan" rafts. Each summer, the kids and up to a half-dozen advisors would pile into the bus and do a "major" river somewhere in the west, plus frequent weekends on local rivers. My first "major" trip with the Post was on the Main Salmon, Idaho, plus the Snake to Heller Bar, Oregon. That was in early June, 1980, flow of 30,000 cubic feet per second, humongous waves in many rapids, usually flipping a few of the 12' Elans.

In the late 1980's, the Post admitted girls. Within two years, the Chairman of the adult-advisor group was a woman. Since then, the Post's style has evolved: less emphasis on long-distance rafting, more on kayak acrobatics nearby.

TM: That was 1977 then?

CZ: It was not my first river after arrival in New Mexico. Several chance encounters in 1977-1978 guided me toward white-water boating. I was already interested in rivers, but didn't know much about them. And, I didn't have the fold boats anymore because I stored them in my backyard, and one day they got stolen.

TM: Oh

CZ: That wasn't so bad because they weren't appropriate, in any case. They were too flimsy for class III or IV rivers. First, a new friend, Pat Blumm (more about him later), lent me a Tahiti (a small inflatable kayak) to do my first river, the Chama, a tributary of the Rio Grande, from the Monastery to the Adobe ruins.

Second, a Los Alamos neighbor familiar with inflatable kayaks lent me his Sea Eagle catalogue. So, the first boat I bought in Los Alamos was a Sea Eagle 300, a one-person inflatable kayak made out of remarkably strong, lightweight material. A group of friendly boaters introduced me to nearby sections of the Rio Grande, and again to the Chama. In 1980, still in a Sea Eagle, I did the Dolores, which is a serious class III, with them. This was before the Dolores dam tamed the Dolores. There was one raft, one canoe, and two kayaks.

Third, in 1978, I met Jay Sorenson, a veteran river runner, and a political science professor at the University of New Mexico, Albuquerque. He, with his wife and kids when available, and with his Albuquerque buddies, also aimed to get on a river on every feasible weekend. I joined him in a special offer from Campways, a maker of neoprene/hypalon rafts (later renamed Riken). The Campways line included the Hopi (12'), Miwok (14'), and Shoshone (16'). Jay was boating in a Shoshone. The offer was for four Hopi's, at \$600 each, a remarkable bargain. Jay took one for himself, one for his son, and I took one, as did Pat Blumm. Based on my river experience from 1977 to date, I would say that the Hopi is the best-designed small raft, ever.

Prior to that 1980 trip on the Main Salmon, I had, either with buddies from Los Alamos, or Albuquerque, done the Rio Grande (Pilar, White Rock Canyon, Lobatos Bridge to Lee Trail), the Chama, the San Juan (from Pagosa Springs down 8 miles, also Bluff to Clay Hills), the Dolores (Bradford Bridge to Slickrock), Westwater Canyon of the Colorado, and the Arkansas (Ruby Mountain to Hecla Junction) in

the Sea Eagle, also the San Juan (Bluff to Clay Hills), Rio Grande (Taos Box, Pilar) in the Hopi. And then the Hopi on the Salmon.

TM: So did Mary and the kids go with you?

CZ: Not on the first trips, but yes, after I had bought the Hopi, and a (2-man) Sea Eagle 340 and a Tahiti. Art was on the Westwater trip, rowing the Hopi, with Jay's two kids as passengers.

TM: What about the Salmon? When you went up to do the Main Salmon?

CZ: No, that was in the days when the Explorer Post was all boys.

TM: Oh, ok.

CZ: That didn't change until the late 1980s.

TM: Did you bring your sons for that?

CZ: My older son, Art, was in high school 1976-1980. He joined the Explorer Post early, and was on their major trips. He learned rafting, and, later on, kayaking. Ken was 11 and daughter Dorothy was 17 in 1980 and both could handle inflatables in class-III water by then, sometimes with Mary, me, and the Sorensens, but not on Post trips.

Perhaps I can briefly mention some other elements of the New Mexico whitewater scene in those days, and persisting to the present time. Already noted was Stretch Fretwell, a river runner, mountain climber, flew his own private plane, did helicopter skiing in Canada. He established the Pilar Mother's Day Races. Pilar is a small town on the Rio Grande, about an hour north of Santa Fe, at the head of a five-mile course of Class III rapids (Class IV in the 1980's high-water years). Rafters, kayakers, and canoeists would gather together at Pilar over the Mother's Day weekend for a series of races, river hijinks, and general merriment. The raft race has waned in popularity, but in the mid-1980's, up to 120 rafts would compete.

TM: It turned into quite a big deal.

CZ: It was a big event; it still is. Another element of the New Mexico river scene for private boaters is the Adobe Whitewater Club (AWC), founded April, 1980 by a group of Albuquerque rafters. When I joined, a few years later, family memberships had grown to 200, later increasing to 300. I was president for 4 years in the 1980's. During this period, the stewardship of the Pilar races was turned over to the Adobe Club. This was an era of rapidly increasing popularity of whitewater boating, and so, increasing effort of the Bureau of Land Management and the National Forest people to regulate river traffic. I, with some AWC colleagues, and some commercial outfitters, spent many hours negotiating with the BLM and the Forest Service on control of river use, and on the competing boating rights of privates and commercials.

TM: That may be another interview here. It's our third interview now of side-tracks.

CZ: Ok, I was trying to explain the ways in which I got introduced to the river. There were the Los Alamos and Albuquerque river communities, there was the Explorer Post, and the AWC. The first time that I attended the Pilar races, May 1977, I met Pat Blumm, one more river character who became a good friend. Pat had just come to New Mexico from a career in advertising in Arizona. His ambition was to run

rivers professionally and the opportunity to do so in New Mexico looked promising. He had bought a fleet of Tahitis, and his Rio Grande Rapid Transit company ran river trips for tourists down Pilar, the Chama, and, after acquiring rafts, the Taos Box of the Rio Grande. He gave me and Art good advice and the three of us did trips together. And we did mutual favors. He used his outfitter status to buy me my first big boat, a 15'9" Maravia Williwaw 2 (my future Grand Canyon boat) and much equipment at the wholesale price. At the start of a later boating season, I was able to return the favor. His store room was robbed of all his boating properties, and commercial loans were available to him only at 20%. I lent him a bundle of money, which he repaid before the end of that season.

TM: Was that, like, '81, '82-ish? Because you'd done the Chama and the Dolores in 1980.

CZ: Yes, in the '80s. Now, you may have heard about Pat Blumm, even though you don't recall the name. He eventually moved his commercial river-running back to Arizona, and was doing the Salt River. It was one of Pat's river guides plus a friend of the guide, knowledgeable about explosives, and six others who were indicted and convicted for dynamiting Quartzite rapid on the SALT. The guide fled the country, and was later found in Australia. Because Pat Blumm was a colorful type of entrepreneur, his New Mexico acquaintances were skeptical about his innocence in the affair.

TM: And, as you say, Pat was never indicted in any of that activity, but...

CZ: That's right. He told people back in New Mexico that he passed a polygraph test with flying colors. He was cleared by the investigation. What the culprits had done illegally was, in my opinion, what the Forest Service should have done many years earlier. They converted Quartzite, which was a killer rapid, and people had died in it, into a Class III+ rapid, saving many a boatman's tedious hour portaging boats and gear up and down the rock slide which abuts the rapid.

TM: That's right. Let's go back to your boating record, which we kind of left off at the Chama, and the Main Salmon, and the Dolores in 1980. Where did you boat from there?

CZ. I was now part of a river community, of which some members were available almost any weekend during the boating season. Some, like myself, were not tied down to 40-hour-per-week work schedules, and were available for extended weekends, and (in moderation) for one-week to four-week trips. Perhaps two or three multi-day trips per year, interspersed with repeated local one-day trips. The latter would include Pilar and the Chama, as noted above, but most often the 16-mile Lower Taos Box of the Rio Grande, a major portion of which is Class IV, and, depending on the flow, up to Class V. The Box is the most exciting stretch of water in New Mexico (except for a Class VI segment of the Rio Grande and for some steep, narrow, streams, not recommended for boaters), convenient to Albuquerque and Los Alamos, and never boring, no matter how often repeated.

My first Box trip was on the Shoshone of Jay Sorenson, and he let me do some of the rowing. My next was with son Art, with Art rowing our Hopi. The Box had risen to 8,000 cfs, enormous flow for that narrow canyon. Art had applied for a guide job with Rio Bravo outfitters, and its leader wanted him to accompany a Rio Bravo commercial trip with a companion, as a job test.

TM: And this was when?

CZ: In 1979. The Box was 8,000 and ferocious. I was in the front compartment, and would get completely covered with water. I kept asking Art, "Are you still there?" Well, he was still there. He got the job, and had a successful season with Rio Bravo. The next several years, returning to Los Alamos from college for

summer breaks, he guided on the Box for Pat Blumm's Rio Grande Rapid Transit. It was slightly illegal in the years when he was under-age for the liability insurance that the commercials had to carry.

Soon, I developed an "ideal" way to enjoy a day on the river, to be repeated often. Arise at 6:30am, drive north about 30 minutes to the Embudo Station restaurant on the Rio Grande to pick up a shuttle driver. Continue to the Box, arriving at the put-in about 8am. With family members, or with friends, as a one-boat trip, or with other boats. If friends had brought children, then with the Williwaw 2 for extra security, otherwise with the Hopi. Launch on the Box about 8:30am, while the shuttle driver returns the car to the Embudo Station restaurant. Continue on the river past the Box take-out, into the Rio Grande Gorge State Park, 7 miles of quiet water with several class II's. Then, the Pilar rapids begin, to be followed with 7 more miles of quiet water, and take-out at Embudo Station. The restaurant proprietor, Preston Cox, greets us on the river bank with a huge plate of nachos while we de-rig the boat or boats. Preston operated a smoke-house, and his restaurant featured smoked spare ribs, smoked trout from the Rio, smoked ham, local wines, local chili beer, and more, and live music on weekends. Nine to ten hours on the river, 35 river miles, a gourmet dinner, and home by dark.

TM: Yes. So, you guys had not done Grand Canyon up to this time?

CZ: No, the first time on the Grand Canyon was 1981.

TM: Ok. And how did that trip come together and who was on it?

CZ: I had known Jim Fuge, having done either Westwater Canyon with him or some other river, with Jay's group.

TM: Is this the Jim that would later fall in Grand Canyon and be helivaced out, or is this his father we're talking about? Is his father named Jim?

CZ: I'm talking about a Jim Fuge who was, I believe, in his twenties in 1979.

TM: That's his son. Ok, got it.

CZ: In the summer of 1981, I received a call from Jim Beard, of Durango, Colorado, whom I had not met previously. He and Jim Fuge were fellow hikers and mountain climbers. Jim Beard had obtained a Park Service permit to lead a private trip down the Grand Canyon in October. He had bought a used Udisco. Udisco rafts were still fairly common in the early 1980's; they were neoprene, cheap, and had the reputation of tearing easily. Jim Beard had never run a river of any kind. Jim Fuge was unable to accompany him, but recommended me, suggesting that I could find other participants. I started looking, and immediately turned up a fellow physicist at the Lab, Dick Slansky. Later, I found Dave and Rosemary in Albuquerque, about whom, more later. And Jim recruited a fellow hiker, Frank Lucero, who had also rowed and hiked the Grand Canyon.

I started preparing. I bought some books, and the Belknap map and other maps. The Explorer Post put me in contact with John Van Vesse, a Post alumnus, and now a Grand Canyon commercial guide, who put stars and double stars on side canyons on my Belknap map, indicating good, and very good hikes. He also offered his subjective interpretations of the river ratings in the Grand Canyon 1 to 10 scale. Frank Lucero gave me and the other prospective boatmen a set of sketches of the major rapids, with recommended routes, obtained from an AZRA commercial guide.

Although Jim Beard was new to boating, he was an experienced Grand Canyon hiker. He had often hiked down from rim to river, then hitched a ride on a commercial boat for a number of river miles,

then more hiking, then mooching another ride on a commercial boat. As a price for their hospitality, the commercials would assign him chores, like washing dishes or attending to the porta-potties. He had hiked all of Nankaweap, for example. Is that right? Can you get down from the rim to the water?

TM: Via Nankoweap? Well, not easily; it's a long walk, but you can absolutely do it.

CZ: As you recall, the permit application requires that the applicant list previous experience on rivers comparable to the Colorado in Grand Canyon. The Park Service didn't want beginners rowing in the Grand. Well, he had never run any river, but wrote that he had worked as an assistant boatman on commercial Canyon trips. Anyway, he was tough, and did all right. In those days, he worked as a truck driver driving a water-tank truck for the oil and gas companies to supply water to run their wells.

TM: Is he still alive?

CZ: He's still alive. I haven't talked with him for a number of years. Currently, he lives near Monticello in Utah, and has built his own house there. He became my, and Mary's, best river comrade. Most of our Grand Canyon river trips, and Colorado and Utah trips as well, were with him. On this initial trip, there were five rafts: Mary and myself in our Williwaw 2, my Los Alamos lab colleague Dick Slansky, also in a Williwaw 2, with Jim's brother Pete as passenger, Dave and Rosemary, about which more later, Jim in his Udisco with Dave Reidel of Durango as passenger, and Frank Lucero from Arizona in a 14' raft. Frank, Dick, and I had previous whitewater experience. Dave had assured me that he did too, when I recruited him, but we learned, too late, that he had been on a friend's boat, once, down Grey-Desolation. Plus seven other friends of Jim, whom I remember as Tim, Bill, Ginny, Chris, Karen, Linda, and Russ. These seven were part-timers, jolly folk, joining or leaving us at the Tanner Trail, Phantom Ranch, Diamond Creek, or Pearce Ferry. Reidel played his soprano recorder on the river while Jim rowed, with beautiful resonances from the Redwall cliffs. Tim was a former all-Arizona high-school wrestling champ. He would begin each chilly October morning with 50 push-ups, then dive into the chillier Colorado for a swim.

TM: Oh, you took out at Pearce, ok.

CZ: Mary and Dick Slansky took out at Diamond Creek with our two boats; they had commitments to meet. I continued, as a passenger with Frank and Tim, to Pearce Ferry. So did Jim. Ginny had met us at Diamond Creek with an outboard motor for Lake Mead.

Mary and I had a problem at Hance Rapid. This is 1981, before the '83 flood changed Hance. Hance, at about 3000 cfs, was fierce, with no clear route through it. Too rocky at the head of the rapid on river left. There was a prominent rock half way down, on center left. The best entry seemed to be on river right, but leading directly to a huge hole. My plan was to enter on river right, and half-way down, to ferry like mad to river left. If I could ferry left above that rock, then turn downstream, I had clear boating down the rest of the rapid. The plan didn't work. The river, both right and left, was trending strongly toward the huge hole. With enormous effort, I did make the turn around the rock, at which point, I was tired. The river took over, brought us back to the right, above the hole. We entered the hole with no forward momentum, and were stuck.

The boat turned sideways. Mary and I leaned forward toward the downriver side, to prevent the boat from flipping. We were practically standing on the upstream side-tube because the boat was poised against the downstream side of the hole. The rapid kept jostling the boat. It turned us around so that the opposite side was facing downstream. So, we moved to the opposite side. This reversal of sides occurred several times. All the while, water was pouring over us.

Before the trip, I had considered how best to tie the two spare oars to the raft's side tubes so that, in an emergency, they would be promptly accessible. I ran a length of tension cord from the forward D-ring to the aft D-ring on each side-tube, and laid a spare oar horizontally on each side tube. Grasping each tension cord at its center point, I twirled the cord a number of times around the oar shaft, and fixed it to the center D-ring with a swivel snap. Bad idea. Tension cord cannot resist the force of a river. Both spare oars were ripped off and sent downstream. The oar in an oarlock on the upstream side was bent at a right angle.

Then, Mary wasn't in the boat anymore. She had been pulled out of the boat on the upstream side by the turbulence and pulled underneath the boat. Well, she's a calm, non-excitabile person, fortunately. She raised her hands to the underside of the boat and palmed her way downstream and out from under. I sighted her downstream of the hole. At the same time, the boat, nearly filled with water, was released from the hole. I hauled Mary back into the boat. We floated through "son-of-Hance", with one oar, picking up more water, and came to rest in an eddy on the right. One of the lost oars was floating in the same eddy. Then we had to bail.

TM: Couple hundred gallons there, maybe.

CZ: I counted while bailing with our 5-gallon bucket. The boat carried close to 500 gallons, almost two tons of water.

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TM: Ok, sure. And, we just lost the call here with Chuck Zemach. Today is the thirteenth of January, Tuesday morning, 2015. And, so, I'm going to terminate this and we'll call Chuck back.

End of Part I