RUTGERS, THE STATE UNIVERSITY OF NEW JERSEY

NEW BRUNSWICK

AN INTERVIEW WITH ALFRED NISONOFF

FOR THE

RUTGERS ORAL HISTORY ARCHIVES OF WORLD WAR II

INTERVIEW CONDUCTED BY

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WALTHAM, MASSACHUSETTS
AUGUST 1, 1994

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Kurt Piehler: This begins an interview with Alfred Nisonoff on August 1, 1994, at Brandeis University in Waltham, Massachusetts with Kurt Piehler. And I guess I'd like to begin by talking a little bit about your parents, starting with your father.

Alfred Nisonoff: Okay. Well, both my parents were immigrants. And, they both came to this country when they were roughly fifteen years old. My mother came from Czechoslovakia, a large family--twelve siblings in the family. My father came from Russia and there were seven or eight children in his family.

KP: Did your father come over with his family?

AN: Well, he came over separately. I think he was one of the last of the group to come.

KP: So, one brother came over.

AN: Well, I think, in his case, his father and mother came over, whereas my mother's father and mother never did. They stayed in Czechoslovakia, what is now Czechoslovakia. Whereas ... my father's father and mother came over with some of the kids and he came over later, which was a little unusual. I think he was hurt by ... that fact. I don't know why that happened.

KP: He stayed with other family members back in Russia?

AN: I'm not sure who he stayed with. He must have.

KP: But, he didn't come over with the family?

AN: No, he came over a little later. Not much later. Maybe a year later.

KP: Do you know why the family immigrated?

AN: Well, I think the reasons were those of virtually all immigrants; poverty and, in the case of Jews, there was often discrimination that they were hoping to improve on.

KP: Was your father a victim of any of the pogroms, that you know of? Did he ever talk about it?

AN: I don't think so. He never talked about it.

KP: He didn't talk much about Russia and his experiences.

AN: No, I never really went into it in great detail with him. His father was a butcher and I know, and he was quite expert at that.

KP: Your mother came over without her family.

AN: That's right. But, in her case, the sisters came over one at a time. One would come over and get established and then send for another and ...

KP: She was part of that pattern.

AN: Pattern, right. All but two of the brothers and sisters came over. Two were left behind and died during the war. So, they had a tough life. They never had any money till the war began. And they always worked very hard at the butcher shop and grocery.

KP: So, how did your parents meet?

AN: I honestly don't know. They were both living in New York at that time. And, I'm not sure how they got together. Well, let's see. The chances are that my father's father ... established himself in Spotswood, actually, then later moved to South River. And, one of my mother's sisters lived in South River. So, that may be the way it happened.

KP: So, your father's father had the butcher shop, a grocery combination.

AN: I don't know if he had a butcher shop. ... I think it was more of a slaughtering operation, I'm not sure. I think he sold meat to the butcher shop, but I'm not quite clear on how that worked. But, most of my father's brothers became butchers. All but one or two.

KP: So, your family settled in South River and Spotswood area. How did that come about? Do you know why they picked this part of New Jersey?

AN: Well, I think that's because my grandfather settled in Spotswood. I don't know why he ended up in Spotswood. But, he would need a rural area for what he wanted to do. He needed some space.

KP: And for some reason he picked Spotswood?

AN: I'm not sure how he ended up in Spotswood, of all places.

KP: When your father came of age, did he come to own a grocery store?

AN: His first stores were butcher shops. He had the kosher butcher shop in South River, and that goes all the way back to when I was five or so. Yeah, I was born in Corona, Long Island, but, then, when I was a couple of years old, they moved to South River and he opened that kosher butcher shop there.

KP: So, he opened it without his grandfather.

AN: That's right.

KP: It was his own operation.

AN. It was his own operation. Yes.

KP: And, what happened to the store during the Great Depression?
AN: Well, the kosher butcher shop eventually failed. And, he then opened up a non-kosher butcher shop on the same street. So, he just transformed it into a non-kosher butcher shop and that failed also, eventually. And, then around 1938--'37, '38--he had an opportunity to buy a store in Spotswood that was being abandoned by Mr., I think his name was Applebee. And, Applebee was kind of the owner, but he didn't actually run the store, and I had the impression that his employees were robbing him blind, (laughter) and so he wanted to get rid of it, and he wanted 500 dollars. I don't recall whether it was 500 dollars plus inventory or 500 dollars including inventory. But, my father couldn't come up with the 500 dollars and his father refused to sign a note for him. And, eventually my aunt, my mother's sister, signed the note. Her husband had some money. He got the 500 bucks and that's how he got the store in Spotswood.

KP: And, that was a grocery store?

AN: Grocery, butcher combination. That was '38. Then, when the war started, it became a fairly prosperous operation.

KP: Your father had two failed butcher shops, first kosher and then non-kosher. How much do you think the Great Depression had to do with that failure?

AN: Oh, it was terrible. There would be, there were at least two or three butcher shops on Ferry Street. And, then we'd put up these big signs, you know, "Kielbasa, Twelve Cents a Pound," then somebody else would put up a big sign, "Kielbasa, Eleven Cents a Pound," and it was like a war going on on Ferry Street.

KP: This was in South River.

AN: South River. Ferry Street is one of the two main business streets in South River.

KP: And, your mother worked helping in the stores.

AN: She helped a lot. All the time. She always helped. She worked very hard.

KP: You went to school in South River.

AN: I went to South River High School and the grammar schools.

KP: How soon did you know you wanted to be a scientist or a chemist?

AN: Well, probably it was near my senior year when I decided. Because, there was a fellow in my high school class named Matty Kozlowski who had his own lab. And, he was a very smart guy, never went to college. But, he was very bright. And he let me come over and play in his

laboratory a few times and I was fascinated by it. And, also chemistry seemed like you might be able to get a job, you know, as a practical occupation.

KP: As opposed to say majoring in English or a similar discipline.

AN: (laughter) Oh, I mean, if you were in English at that time, it would have been just suicidal.

KP: South River, what kind of community was it, when you were growing up?

AN: Oh, ... it was a working class community, for the most part. There were a few people with some money who lived, "up the hill." And, they were the more Waspish types. But, there were a lot of second generation and first generation people in South River. Poles, Russians, Hungarians. There was an area called the Russian alley which was considered very forbidding. You didn't want to go up the Russian alley at night. (laughter) That was Whitehead Avenue.

KP: Did you ever witness any Klan activity around your community?

AN: I wasn't aware of any.

KP: Because Ray Taub mentioned in Sommerville, there was very active Klan activity.

AN: Is that right?

KP: Very active Klan activity.

AN: ... Perhaps the community ... didn't lend itself to that because so many of the people that were immigrants, they didn't know about the Klan.

KP: But, the Klan never sort of walked through as a show of defiance?

AN: Well, I wasn't aware of it.

KP: Yes. In your high school, was there an expectation that a large percentage would go to college?

AN: No. A very small percentage, actually, went to college. We had a high school 50th reunion and they put together a book. It turned out that only a small percentage of the class went to college.

KP: So, you were, in a sense, exceptional from this community for going to college?

AN: Well, I wouldn't say terribly exceptional, but a minority.

KP: How did you come to Rutgers?

AN: Well, I didn't have enough money to go anywhere. But, I got a state scholarship to Rutgers. I can't recall whether it specified Rutgers. It probably did. In any case, it was the only place I could commute to. I didn't have enough money to live someplace else.

KP: So, if it hadn't been for the state scholarship and Rutgers being close by you might not have gone to college.

AN: I don't know what I would have done. There was no way I could have come up with any tuition. Even at Rutgers, which was "state-supported," I don't know how much state support they got. I think the tuition was a couple of hundred dollars a year. And, it might as well have been 10,000. ... I was thinking in terms of ten dollars, you know. Once I needed 25 dollars for books and couldn't come up with it. My aunt, same aunt, helped me out.

KP: So the state scholarship was crucial and it was always tight financially?

AN: Oh, yeah, I used to spend a dollar a week for a ride into Rutgers from South River. And, I would hitchhike home. And, I would buy lunch for 25 cents, a vegetable plate, because I wouldn't eat the meat. So, I'd have a vegetable plate for 25 cents and a glass of milk was a nickel. ... Then I might blow ten cents a week on bowling or something like that.

KP: That was the big splurge, right?

AN: Well, I guess I went to the movies occassionally, so I must have had a dime for that, too. (laughter)

KP: So, you never lived on campus at Rutgers?

AN: No, I was commuting. I think the last year or two, I, my father had an extra vehicle, so I was able to drive then.

KP: But before that, you hitched.

AN: Well, I hitched home. I had a ride, I gave somebody a buck each week to pick me up in the morning.

KP: And, you were not alone in hitching.

AN: Hitching was very common in those days. And, it was relatively easy. People picked up hitchhikers. I never waited very long for a ride. I did have to walk across town. In other words, you couldn't hitchhike from Rutgers. You had to walk past Livingston Avenue and then hitchhike. So, what is that, about a mile?

KP: You knew you wanted to be chemist even before you got to Rutgers.

AN: ... Well, I immediately started in chemistry.

KP: You had mentioned that Professor Riemann was one of your favorite professors.

AN: Yes, I think ... he was quantitative and he was kind of up-to-date. A couple of the professors were hopelessly out-of-date.

KP: Really?

AN: We had somebody teaching us qualitative analysis, I won't mention his name, why immortalize it. (laughter) But, he was teaching right out of the 1920s.

KP: So some of the professors had not kept up.

AN: Yes, some had not and some were fairly up-to-date.

KP: And, did you realize it at the time, or did you realize this when you got to graduate school?

AN: Well, I fully realized it afterwards, when I went to Johns Hopkins.

KP: But, you had some suspicions before Hopkins.

AN: Yeah, I knew that qualitative analysis was a pretty lousy course.

KP: And, you took electives mainly in the sciences?

AN: Only in the sciences, I think.

KP: Did you know you wanted to go to graduate school at the time?

AN: No, no I didn't. I didn't have that much vision or ambition or ... that sort of thing was so far out of the realm of possibility.

KP: Just getting your college degree was central.

AN: Also, when I started college, I was only 15, and I was short, so I was like a little kid. I wasn't thinking in larger terms.

KP: So, you went through high school fairly quickly?

AN: Well, ... I was in the first grade in South River and we had this temporary principal, Mr. Bolland. I remember his name. And, he put me in the third grade. So, one day, I was sitting in the first grade and the next day, I was sitting in the third grade.

KP: And, was that because you were more advanced than other students?

AN: Well, he thought I was.

KP: So you skipped two years?

AN: Yeah, I was sitting there in the third grade when I was only six years old.

KP: Had you known how to read and write before the first grade?

AN: I doubt it, I doubt it. Nobody ever taught me anything. (laughter) I don't know if I owned a book. My parents didn't read books.

KP: What did your parents think of college? Did they push you to go to college?

AN: Oh, they were happy that I was going, of course. But ...

KP: But, they didn't expect you, necessarily, to go to college?

AN: I don't know. I don't think we ever talked about it. I was 15 and I'd graduated from high school and it wasn't quite clear what I was going to do. And, then this notice of a scholarship came through during the summer, I think. So, I went to college. (laughter) I'm really not clear as to what I would have done if I hadn't gotten that scholarship. I suppose, eventually, I would have figured something out. But, at the age of fifteen, I wasn't figuring anything out.

KP: Most people who enter college were seventeen, eighteen, and nineteen.

AN: Yeah. And, I wasn't--I grew in college, so I was really small, you know. That's probably why Sam Blum thought I was smart, because I was so small. (laughter)

KP: Were you in ROTC at 15?

AN: Gee, I can't remember that.

KP: Because, it was usually freshmen and sophomores. I mean, that was the standard required duty.

AN: Yeah, I'm blanking out on ROTC. I can't remember the gun and the uniform. I don't think I ever had a uniform. Did they have uniforms?

KP: I don't even know that fully for sure.

AN: It may have been an elective. But, I'm not sure.

KP: It was required for the first two years, but I was just wondering, in terms of age, if you were required to go.

AN: Well, I just don't recall what we did. I know I never had a uniform. And, I'm quite sure I didn't have a gun.

KP: You elected not to continue.

AN: Oh, I'm sure of that, yeah.

KP: Did you attend chapel?

AN: No, I didn't.

KP: Did you have a hard time getting excused from chapel?

AN: Was that on Sunday?

KP: No, there was a chapel during the week.

AN: I don't recall, but I'm quite sure--you know, it could be that I'm forgetting it. ... But ... I don't recall going to chapel.

KP: Did you have any experiences with Dean Metzger?

AN: Dean Metzger? Uh, no. Was he the Dean of the college at the time?

KP: Yeah, he was the Dean of Students. People have told me he was a stern Calvinist. Especially at chapel. Some have remarked how surprised they were that someone who was so young, could be so amazingly stern, Calvinistic.

AN: I don't remember him, no.

KP: What did you think were some of the divisions at Rutgers at the time?

AN: Divisions?

KP: Yeah, between the students.

AN: You mean the classes of students?

KP: Classes of students.

AN: Well, I didn't pay much attention to it, but I knew that there were some guys that belonged to fraternities. I had the impression that some of them actually had cars and girlfriends and that sort of thing. ... My impression is the guys in the fraternities were sort of the socially elite, because they had a little money and background and so forth. So, they had some flexibility, whereas a lot of the students had zero.

KP: Yeah, that was fairly clear in the interviews to date.

AN: There were categories of kids who had a little money and they had kids who were so totally broke that they couldn't even ...

KP: Did you expect war at any point when you were going to college?

AN: Well, December, 1941 did I anticipate the war? No, I don't think I was really up on current events very much. I doubt if I read newspapers carefully or knew what was going on.

KP: So in many ways, Pearl Harbor came as sort of a bolt of lightning?

AN: I think so. I remember I was taking a course-- oh, I did take a liberal arts course, it was a course in public speaking. And, I remember the guy ... who taught the course after Pearl Harbor. He said, "Well, I don't know what you're going to do, but I'll tell you what I would do if I were your age. I would enlist right this minute."

KP: And, you did not do that right away?

AN: No, no I didn't. But, we'll come to that.

KP: You were really concentrating on sciences and politics and current events were very distant.

AN: I didn't know much about what was going on.

KP: You didn't enlist right away. Probably you were very young when you finished.

AN: Well, when I finished college, I had this urge to make a little money, because I never had any and I wanted to start a career, and I was only nineteen, at that time they weren't drafting nineteen year olds. So, ... I was looking for a job, and I ended up with U.S. Rubber Company in Detroit because they paid me 40 bucks a week. (later Uniroyal)

KP: And, you were saying that you had several other offers but other ones didn't pay as well.

AN: I had a couple of offers at 25 or 30 dollars a week. And, that seemed like a fairly large company. And, I don't know, it seemed like an opportunity. So, my father bought me a Model A Ford for 25 bucks. And, I took it through Pennsylvania and I had to start braking halfway down the hills because the brakes weren't very good. (laughter)

KP: Had you travelled?

AN: Never.

KP: So, you really had not left the New York/New Jersey area?

AN: I hadn't left the New Jersey area. I'd been up in the Catskills with my aunt once, and we used to go into New York City once or twice a year.

KP: But, otherwise this trip to Pennsylvania was unique.

AN: Oh that was the first time I was more than 50 miles from home, probably.

KP: And, what was that like? Traveling out to Detroit?

AN: Well, I remember, I averaged 35 miles an hour and the turnpike wasn't, either it wasn't built or I didn't know about. I don't think it was quite built in ... 1942. Maybe it did exist by then.

KP: Yeah, it did, but it it's not a very good turnpike even today.

AN: Well, it may not be the direct way to Detroit, either. Anyway, I didn't take the turnpike and I just struggled along. I don't remember where I stayed, whether I stayed someplace overnight. I must have.

KP: And, you went to Detroit and worked for U.S. Rubber Company. How innovative was your work? Would you talk a little bit about the work you did?

AN: Well, ... it was very routine, but, on the other hand, it was significant. I worked for a guy--they called him a compounder. Rubber has a lot of ingredients in it. And, he would vary ingredients in latex, and then see what happened to the cords when they were passed through that latex. Whether the latex would stick and whether they would then bind to rubber on a tire. So, it was just a routine job of testing things.

KP: There was a severe shortage of rubber at this time.

AN: That's right. And, we would try various kinds of latex, too. ... I don't know if they had synthetic rubber latexes at that point, yeah, I guess they did. And, we would try various latexes and various rubber compounds and see whether they would stick. Actually, I made a discovery, which lead to them giving me a job after I got my Ph.D Degree. It was very primitive. ... I was testing various things. ... And, one of the problems I had was getting nylon to adhere to ... rubber. They wanted to use nylon cord, because they had to use it for planes that were going to land on aircraft carriers, on account of the impact. Nylon is much stronger than cotton. The problem was that nylon didn't want to stick to rubber with their conventional latexes. And, one day I was walking through the plant and they were making these self-sealing gasoline tanks and they were made out of rubber, and they had cord in them to strengthen them, to give them rigidity, just like a tire does. And it was nylon cord. And they were using this adhesive, this bakelite type adhesive, and it was done with solvents, though. And, they would dip the nylon cord into this resin and then it would stick to the rubber when they heated it all together. So, ... I got some of that resin and I emulsified it with casein and then I used that as a dip. Then the nylon stuck to the rubber. Now, other companies were using solvents for coating their cords, but

U.S. Rubber was all set up for latex, and they couldn't very well--it would be very expensive to change it, because it's an entirely different process.

KP: Plus, just the shortages of material.

AN: Well, other companies were doing it, with organic solvents. But, U.S. Rubber was doing it with water-based latexes. The factory would use, it might be an eight foot width of cord going through a big dip of latex and then over drying drums. And, it would have been very difficult to change that to something that handled benzene or other solvents, so they really wanted to do it with a water-based latex. So, when I emulsified ... that resin with casein, it would then dissolve in water, and they would use that as a dip. And, it actually worked. So, that's the way U.S. Rubber started to make their nylon tires. But, there was no science in it. It was just an accidental observation.

KP: You were just walking through the plant.

AN: Yeah, I saw some nylon and I saw some rubber. It doesn't take a rocket scientist to figure it out.

KP: Now, were you involved in production when you were at U.S. Rubber.

AN: No, no, I wasn't. This was just a recent development.

KP: By walking through the plant.

AN: Yeah, right.

KP: So, you were involved with research from the beginning at U.S. Rubber?

AN: Well, if you call that research. It was primitive stuff. It was very mindless sort of thing. I don't know if this is a true story or not, but my boss, who was about 40 years old, ... he was pissed off because he had discovered that, if you used a lot of zinc oxide in the formula, you could improve reclaimed rubber. That was a major source of rubber at the time, tires that had been collected and the rubber reclaimed. And, the factory--his boss wouldn't let him use it, because it was too valuable. And they had to share everything with other companies at that time. The government had stepped in and said they had to share all their knowledge. So, rather than let it become public knowledge, they squelched it. He was pissed off when he told me about it.

KP: That they were really basically keeping a lid on this.

AN: Yes, which was incredible.

KP: Well, especially given that there is a war on. This is an important discovery.

AN: Yeah, and what are they going to do with the G-d damned reclaimed rubber, you know? It was weird. But, maybe not surprising. (laughter)

KP: Where did you live when you were in Detroit?

AN: I lived with a Jewish family in the Northwest part of Detroit, which was a Jewish section. Because, I was still eating non ...

KP: Still keeping kosher?

AN: Kosher meat, yeah.

KP: And, how did you hook up with this family?

AN: An ad in the paper, probably. I don't recall.

KP: So, you were basically a boarder in Detroit.

AN: Yeah, I was a boarder. And, I commuted by bus down to Belle Isle, by the river-- which is where the rubber plant was. And, I didn't know it until later, but when I was leaving, my landlady told me, "Well at least your closet won't stink anymore." I would bring home this rubber smell with me. And, I was so accustomed to it. I didn't even know it. (laughter)

KP: What did you think of Detroit as a city?

AN: I knew nothing, very little about the city. I mean ...

KP: So, you basically went to work every day.

AN: Yeah, although I was dating then. I had a car, and ... yeah, I always had a car, it was a Model A. And, later on, my father had a little money and he sent me a used Dodge. He wanted to keep me from enlisting, because I was talking about enlisting.

KP: So, your father did not want you to go off to war?

AN: No, he didn't.

KP: What about your mother? How did she feel?

AN: I don't recall her talking about it very much.

KP: But, your father was very adamant that you should stay out.

AN: Well, he didn't talk about a lot, but he--he tried to get me, he did say he wanted me to stay in Detroit. I had a deferment by that point. In other words, I enlisted around the middle of 1943,

and signed up for a midshipmen's school because I had a bachelor's degree. And, I was just feeling very guilty by that point.

KP: You felt that you didn't want to be a slacker?

AN: Well, you know all the other guys ... I was the only guy left and I had this Dodge (laughter) and the guilt feelings just built up.

KP: So, you really felt that it was your turn to go.

AN: Yeah, yeah, so I enlisted in the Navy.

KP: Detroit had one of the worse race riots during World War II.

AN: Yeah, let's see, did that happen when I was there or was that later?

KP: I think it might have been later. But, did you notice any tension between the black and white communities.

AN: No, because I didn't know working class people, really. I hardly ever talked to them. And, they were the ones who were upset because blacks were coming in and taking jobs.

KP: So, you were really in the white collar work area. Most of the people you worked with were white collar.

AN: Well, I was in contact with blue collar guys, but I don't think I ever had any social contact with them, never spoke to them. About the only contact I really remember was when I first started to work. ... All these things we developed had to go through testing. And, in order to acquaint the researchers with the testing, they made me spend one or two weeks doing the testing, so you knew what it was all about, hands on. And, there were these ... simple-minded machines, like a tear machine. You would tear the rubber; put samples in a machine and then the machine would pull it apart and measure the tension, so you know how much tear resistance there was. And there was a tensle strength machine where you'd make a rubber slab and the machine would pull it apart until it broke, and you'd record the reading when it broke. That's the nature of these machines. You'd just put it in the machine and record some reading. After a day or so, I got pretty good at it. And I began to run samples quickly. Then one of the union leaders or stewards or whatever he was came over to me and told me I was killing the job. (laughter) So, I slowed down.

KP: In your plant, was the union an affiliate of the CIO? Do you remember?

AN: Probably, I think so. I don't recall. I doubt if it was AFL.

KP: Is there anything else you remember about Detroit that struck you at the time, or struck you looking back?

AN: I had nothing to compare it with. It was the first city I'd ever lived in. And the only city I'd ever seen, except New York City. And I had no powers of analysis, nothing to compare it with. ... It was nice--the northwest part of Detroit where I lived was very nice. The houses were neatly manicured, taken care of, there were a lot of trees and so forth. And, later on, I had occasion to go back there and the whole area had been turned into slums, more or less. That same area that had been a nice section, twenty years later it had declined.

KP: You met your former wife in Detroit.

AN: In Detroit. I met her in the Jewish community center. And, I started to date her. And, then we corresponded during the war and then got married ... immediately after the war.

KP: So, if you had not lived in Detroit, you probably would not have met her.

AN: I wouldn't have met her.

KP: You enlisted in the Navy, although you had a deferment so you did not need to go.

AN: That's right. As a matter of fact, one of the reasons I enlisted was because the company used to lie. They would exaggerate ... your contribution--because they didn't want to lose people, so they probably had guys whose job was to doctor up these letters to the draft boards, and they'd make it sound as though you were absolutely vital to the war effort.

KP: Yeah, Sam Blum had an experience where his first job was in production to set up a new plant, but he was basically a high paid lab line worker. They hired all these bachelor's in chemistry and other sciences with the notion it would be easier to get draft deferments for them, even though they were line workers.

AN: Well, in my case, there was a little bit of legitimacy to it because, presumably, my technical knowledge helped. But, still, they would exaggerate.

KP: And you chose the Navy. Why the Navy as opposed to the Army or Army Air Corps?

AN: Well, I guess I liked the idea of the Navy being clean, you know, rather than slogging around in the mud. But, it may also have been that I read about this midshipman program. I don't know if the Army had an equivalent program, they probably did.

KP: But, the Navy, the idea of being on a clean ship with clean sheets had appeal.

AN: Yeah, it was nice ... and I had a shower almost every day of the war. (laughter) My cousin in the Philippines got malaria, you know, slogging around in the mud, although I didn't know that at the time.

KP: But, after you talked to him, you compared notes about your experiences.

AN: And I realized the Navy was relatively clean.

KP: You ended up going to Plattsburg for training.

AN: Right, right. It had been an air force base, I believe. They had one midshipmen's class there. And, they did it precisely, in retrospect, because they needed people for the amphibious forces. The Navy despised the amphibs. They didn't think they were really Navy. They figured anyplace would be okay for training midshipmen in amphibious warfare. That was really a farce, because we were learning gunnery and there were no guns. (laughter) Learning about all these parts in a gun, you know, and didn't have a gun to play with. We did learn a little navigation. We were called 90-Day wonders.

KP: But, where did you navigate? Did you navigate on the local lake there?

AN: No, you could learn navigation without ...

KP: So, you were really being trained for the Navy, but near, really no water.

AN: No, no we didn't use the water. The only thing they used Lake Champlain for was passing the swimming test. You had to swim 50 yards. And, that was in May, I think, in Plattsburg. And boy, that was cold. (laughter)

KP: So, you were definitely not, you had very little contact with regular Navy at this training?

AN: Oh, yeah. I think they ... needed people with college degrees because running a ship requires certain skills. You have to be able to read and write, and do some navigation. That required a little bit of arithmetic. And, then, principles of gunnery, I don't know. ... It was useful, I think, that officers had ...

KP: Had a science background.

AN: Well, a degree. A college degree. They didn't have to be scientists.

KP: How effective was your training when you actually got to your ship?

AN: I don't know ...

KP: How much did you have to learn on the job?

AN: Well, the job didn't really require much knowledge. It turned out to be a real small ship and the guys, the most important guys on the ship were the few enlisted men and one officer who knew mechanics and electricity. And we had several of those guys, and they were the ones who were critical to the ship. The officers were important for navigating, for knowing the rules of the

road, for ordering equipment, for ordering things. Most of my time in the Navy I spent sitting on my rear end reading. (laughter)

KP: Did you expect to go amphibious when you enlisted?

AN: No, I didn't have a clue what ...

KP: You did not know what the Navy would do to you?

AN: No, but practically our whole class went into the amphibious forces. Everybody was trying to get out of it, to do something else. The submariners came around and I think they recruited maybe three or four people out of the whole class. Everybody was volunteering for everything they could think of to get out of the ...

KP: And, you were trying to get out of it, too?

AN: Not too much. Yes, I think I did try for the submarines. .. They told me my bite wasn't very good. I don't know what the hell you have to bite on a submarine. (laughter)

KP: Where were most of the men from?

AN: At midshipmen's school?

KP: Yeah.

AN: I don't know if it was nationwide, but they were certainly from all over the place.

KP: So, you met a lot of different people from a lot of different regions of the country.

AN: Yeah, they were scattered all over. One of the guys I talked to a lot was from Texas, so they funneled the men from various places.

KP: After you left Plattsburg, where were you sent?

AN: They sent us to holding area at Fort Pierce, Florida. Was that the first place they sent us? Yeah, I think it was. ... Or was it Little Creek? Well, it doesn't matter. It was just a matter of a few months. I mean, most of that time, we spent in Fort Pierce, Florida. They sent us down there just because they didn't know what to do with us, I think. And, we lived in tents on the beach, right on the ocean. The water was warm enough and I used to go swimming all the time. And I learned how to stay afloat in the ocean. And that was useful because, since then, I've always felt comfortable in water. ... I'm not a good swimmer, but I can stay afloat indefinitely. I spent a lot of time swimming at Fort Pierce. Once they evacuated us because of a hurricane. We had to march into town and occupy one of the schools. ...

KP: But, otherwise, you slept in tents and lived on the beach?

AN: Yes.

KP: In some ways, was not a bad deal?

AN: Not bad.

KP: What did you think of the South?

AN: ... You couldn't talk about that as being the South or any other place. ... But what I do remember, though, was the train ride down there. That was hellish. It was mid-summer. Going through the South, and the train had very little water on it. You could hardly wash. And, it went on for about three days. They were constantly ... shuttling us off the track, you know, to let somebody else through. And, it was just hot as hell and, boy, it was a nightmare, that train ride. We had these big poker games going on, 24 hours.

KP: Did you play?

AN: I don't think I played poker on that trip.

KP: So, when you were in Florida, you mainly just sat and swam.

AN: Swam. Yeah, I don't think they taught us anything. ... They were just waiting to assign us.

KP: You said you kept kosher in Detroit. Were you able to keep kosher in the Navy?

AN: Oh, no. Once I got into the Navy, all bets were off--no thought of it.

KP: Really!

AN: Yeah. Well, there'd be no way to do it. Totally out of the question. I got to like things like steak and shrimp. (laughter)

KP: After you were in Florida, where were you assigned?

AN: Well, then they assigned me to the boat. To the LCS 130. Which was being built in Quincy, Massachusetts. So, they sent us up here to Boston. We lived in Boston and commuted down to Quincy. Lived in a boarding house of some kind. It wasn't a real hotel; commuted down to Quincy. Sort of supervised or looked at the building of the boat and we got to meet our crew. And then we took possession of the boat on January 1, 1945. I spent New Year's Eve on the boat.

KP: You came to the boat, you had not been up to New England. What did you think of New England?

AN: Again, we didn't see much. We used to go down to the shipyard every day, I think. Seven days a week.

KP: So, at that point, you were very busy?

AN: Well, I don't know that what we were doing that was useful, but we had to be there.

KP: And, you met your crew before they became the crew. How big was the crew?

AN: There were 70 aboard. The boat was only 140 or 150 feet long. I don't remember how many tons it was. It had a flat bottom so that you could go up on a beach. It was very crowded. The enlisted men really were crowded together and the officers had two rooms. And, there were four of us in one room, two double bunks, and the bunks were about that far apart. And, the Captain and the Executive Officer had another room about the same size, single beds.

KP: But, the enlisted men were, on the other hand cramped.

AN: Oh, man, they were ...

----------END OF SIDE ONE, TAPE ONE----------

KP: ... I guess, picking up from the boat, when you took possession of the boat, and I wanted to talk a little bit more about your Captain, your Exec Officer and the other officers.

AN: Well, let's see. Three or four of us were novices, I think. It may have been our first assignment on a ship.

KP: Until you took possession of this boat, you really had not been on a boat, had you?

AN: No.

KP: The Navy--all your training had been in a classroom.

AN: Yeah, just classroom stuff. Because, there were no boats in Plattsburg. There were no boats in Little Creek. So, there we were on this boat. Well, our skipper was a two-striped officer, a lieutenant. He had been in the Navy for a while. I can't recall just what he'd done previously, but he wasn't a novice.

KP: Was he regular Navy?

AN: No, he was reserve.

KP: He was reserve?

AN: Right. The most valuable guy on the boat, by far, was the engineering officer. ... He was an ensign, like me. But, the reason he was only an ensign was because he had just been promoted from warrant officer. He had worked his way all the way up through the enlisted ranks. And, he'd actually been in the real Navy for six or seven years. He was a slightly older guy. And, he'd also seen some action, vaguely having to do with trans Atlantic crossing and ...

KP: So, he knew the ways of the Navy?

AN: He knew about the Navy. And, not only that, he knew how the boat worked. He was very good, mechanically, and he loved to go down there and fix the engines. We had these diesel engines in the boat and he was constantly down there playing around with them. I don't know how they did it. Especially when it was hot, you know, later on. Because, it was horrendous down there. It stank of diesel fumes. It was hot as hell below decks. There was no air conditioning. And, ... sometimes we'd be out at sea bouncing around. And, how those engineering guys managed to work down there was beyond me. They had iron stomachs. Anyway, this fellow not only knew how the engines worked, he knew about the plumbing and the electricity on the boat. He was the only guy who could really handle a wiring diagram, see where everything was. Without him, and maybe one of the other motor machinist mates, we would have been helpless. (laughter) We had a couple of electronics mates who supposedly knew something about how the guns worked, fire control mechanisms.

KP: Anyway, as an officer you felt fairly ignorant about much of the ship.

AN: Yeah, I knew a little bit about the theory of gunnery, you know ...

KP: But, you never used ...

AN: Where did we fire our first gun? I guess on our ship. We would go out and do exercises with the guns.

KP: So, your initial shakedown crew was in the New England waters?

AN: No, they sent us down to the Chesapeake, Solomons, and there was a base down there where they specifically trained the crew. They had an experienced crew to do the training. Our LCS was number 130. They only built 130 of them. They had guys who had experience on these LCS's who were stationed there permanently and they would go out with us and teach us the ropes. I don't recall how long we were there, probably a few weeks, maybe three or four weeks, or something like that. They also liked to play practical jokes on the crews coming through. One of the things they did was to put something like tear gas in a solid form into one of the lamps so when you turned on the lamp, pretty soon the room would be filled with it. (laughter) And, we couldn't figure out where it came from. Eventually our captain got real mad, the two striper, and he went to the officers club and found the guy who was the head of the training crew. He told him to immediately come and take that stuff out of there. (laughter) He was going to report him to the captain of the base or something. (laughter)

KP: So, you would turn on this light and you would ...

AN: Well, somebody would turn on this light when they went into the room. They didn't know what ...

KP: And, then you would get the tear gas.

AN: Right, the heat of the light would evaporate the tear gas. I don't recall what other jokes they played on us. Oh, I do remember one thing they did. They came around one night and convinced the guard--we always had a guard with a gun on duty to keep people off the boat. They came around and they said that they had to repair the steering wheel. They walked off the boat with the steering wheel. (laughter) Anyway, ... they knew all about the LCS's.

KP: And, what about your crew? Where did they come from?

AN: Oh, they were mostly pretty poorly educated guys.

KP: Which part of the country were they from?

AN: There were a lot of them from the South. I bet half of them were from the South. ... But, there were a couple of guys who were skilled. The Navy was pretty smart about putting at least one or two skilled ... people on each boat. Otherwise, it would have been hopeless. I remember we had a boatswain's mate, first class. I don't know where he came from. But, the boatswain's mate knows all ... about ropes and, I don't know, various mechanical things about the [boat]. ...

KP: So, even though the Navy, this was the stepchild of the Navy, the amphibious, it strikes me from your ship's officers that they used this as a place for skilled enlisted sailors to move, make them officers.

AN: Yeah, I don't know how common that was. We only had one example of that on our ship, and that was our engineering officer, Phil Young. And ... then they did give us a first-class boatswain's mate and a couple of good motor machinist's mates. They knew that they had to have a certain amount of talent on the ship or it wouldn't function.

KP: But, your captain was a reservist.

AN: He was a reservist, yeah. He couldn't fix anything. (laughter) Neither could I.

KP: And, what about your executive officer?

AN: Bohlander. He, I don't remember much about his background. I'm trying to recall whether he was an ensign or JG at the time. ... My impression is that he wasn't experienced either. And, our first lieutenant, who was supposed to take care of all the external parts of the ship, he was fresh out of the midshipman's school, just like I was. ... Our communications officer, he was an interesting guy. He had been booted off a battleship. He was a very bright guy. I think he had

been at Harvard. His father was a retired officer, but he was kind of a wimp. And, anyway, he had this bright idea for improving navigation. According to him--and this would work--you would watch the sun as it reached its zenith, keep taking altitudes of the sun. Then you'd find out exactly what time it reached the highest point. And, that would tell you your longitude. Because, your longitude determined when the sun would pass over you, obviously. And, he wrote to somebody in Washington, some officer he was corresponding with, and told him about this idea. And, the guy wrote back and said that he wasn't interested. In retrospect, it's a very trivial idea. I'm sure the Navy knew about that, anybody could pick it up. Well, he became upset by being brushed off, because he thought that he was going to help to win the war, and here they were in Washington ...

KP: They were ignoring him.

AN: They were ignoring him, right. And, he got angry, and he wrote an angry letter to this guy who was a four stripe captain. Within weeks, he was in the ... amphibious forces. (laughter)

KP: So, he really got demoted.

AN: Well, he didn't get demoted, but he got kicked off ...

KP: Did he ever feel bitter about being sent from a battleship to the amphibious forces?

AN: Oh, he wasn't happy about it ...

KP: So, he felt exiled?

AN: Well, he didn't talk about it that much. But, he did mention it, so he must have--he must have felt exiled, sure. We were the dregs of the Navy.

KP: And, so, do you have any other dealings with other Navy personnel? It sounds like you felt like you were not part of the rest of the Navy?

AN: Well, ... occasionally you'd hear things, you know. But, ... I really didn't have really hard feelings.

KP: People who have been on smaller ships have said they, have used the term, for example, dungaree Navy. Did you wear your uniform when you were aboard?

AN: We had to wear something called a uniform which was nothing more than a pair of grey slacks and a grey shirt with a bar on it. And, that was a uniform. And, I guess we wore shoes all the time rather than sneakers. So, in a sense, we were in uniform all the time. But, it was just like wearing a sportshirt or something like that.

KP: On bigger ships, there is a real chasm between Captain and the officers and the crew. What about your ship?

AN: We didn't socialize with the crew at all. I started to tell you about their primitive conditions. Of the 70 guys, probably 40 or 50 lived in one central area, which also was their dining room. The bunks were stacked all over the place. And, practically all night long, there'd be a poker game going on there, or some kind of card game. So, if somebody wanted to sleep, he was at a disadvantage. (laughter) And, the officers stayed clear of that area. We'd never dream of going down there at night.

KP: Really. That was just their territory.

AN: That was the enlisted men's private area, so to speak. I mean, nothing could prevent you from going in there, but ...

KP: But, as a rule, you did not go down there?

AN: No, you never went down there. You'd hear about what was going on. (laughter)

KP: There were days you would go down, for inspection?

AN: Well, to look around ... although the condition of some of those bunks was horrendous. Some of these guys were pigs. They didn't enforce that very much. I'm sure on a battleship somebody would come around to make sure the bunks were all made up and so forth, but we didn't enforce that.

KP: You were not very spit and polish.

AN: At least the enlisted men weren't. ... I think the officers' areas were fairly neat-moderately.

KP: Technically, from what I have been told, the gambling was against Navy regs, but that that was one of the things you quickly learned was not enforced.

AN: Well, we'd never go in there. ... I started to tell you about the composition of the crew. ... Our our steward's mate was black. At that time, the only positions that blacks had on most ships, nearly all ships, was steward's mate, period. The officers' servant, so to speak.

KP: So you had one steward's mate?

AN: We had one steward's mate. He would bring us our meals.

KP: And, where did he stay on the ship?

AN: He was in the enlisted area. He really was unhappy, because he was a high school graduate from Asbury Park, so he was better educated than most of the crew. And, he was ... in there with all these redneck southerners. You can imagine his life wasn't all that happy. And, our skipper was also from West Virginia. So, he was a little bit patronizing, but he was polite to the guy. I

never saw him mistreat him. But, he ended up in a prison. What happened was there had been one of these beer parties. We were out in the Pacific area. We would carry beer aboard the ship, but they weren't allowed to drink it on the ship. That was enforced and it was locked up. But, occasionally, we were near an island, we were anchored near an island. They would, they would go in and have a beer party, take the beer with them. And, as I understand it, there would be some guys who would really want a lot of beer, and they would buy beer from people who didn't care that much about it and sell it at a pretty good price, I suppose. So, there would always be a few guys that got drunk. And once, Baker managed to get high the black guy. They came back from this beer party, and Baker was kind of high, and he ... served us ... our dinner and he had to walk up a stairwell from the galley, along the deck and then down a stairwell to the wardroom, where we ate. The wardroom was about this big. And, almost always, Captain File would ask him for an additional bowl of ice cream. And, of course, that meant he would have to make this extra trip with this bowl of ice cream. But, that was a routine thing. He was always bringing File that extra bowl of ice cream. I think that was one of the few privileges the Captain exercised. I would never ask for a second bowl of ice cream. After this beer party, the Captain asked him for his second bowl of ice cream. He said, "I'm not going to bring you another bowl." (laughter) So, File says to him, "That's an order, Baker." You go get me a second bowl of ice cream." He said, "No, I'm not going to get you another bowl of ice cream." And then he started up the stairs and he was chanting real loud, you could hear him all over the place. "Fuck all the officers! Fuck all the officers!" (laughter) He was just chanting it like a song, you know. So, there was no choice but to court martial him. And, he was sentenced to a couple of months in prison, and, of course, a dishonorable discharge. Poor bastard. Well, he was bitter, you know. He just couldn't take it any more, I suppose. Not that the officers mistreated him, but the enlisted men did.

KP: Being the only black in a mostly southern ship.

AN: Right. And, once they tried to drown him. Again, it was a beer party. Not the same one. These rafts would come around and pick up the crew and take them on shore. That was the way they got ashore. And, coming back, he was on this raft, and they were still in rather shallow water. And, some guys pushed him off the raft and he couldn't swim. And, he had to be rescued by one of the sober guys. That couldn't have made him too happy, either.

KP: Was he replaced after he was court martialed?

AN: You know, I don't remember. I don't recall another black guy coming aboard. I don't remember a second black person, so I don't know how they handled that. Somebody must have done it for him. One of the, one of the mates who, what do they call them? The guys that cook the meals.

KP: Yeah, I cannot think of the name.

AN: But, anyway, that must have been it, because I'm quite sure there wasn't another black person. There were a few ships that were entirely black. I don't remember exactly what they did, but they were involved in servicing other ships.

KP: Did you have any contact with any of those ships?

AN: No.

KP: The crew gambled a lot.

AN: I think so.

KP: And, what else did they do to pass the time?

AN: What else could they do? Not much. There wasn't much recreation aboard. ...

KP: After your initial shakedown crew, where did you go?

AN: Well, our destination was the Pacific, so we headed off for San Diego. We stopped at Key West for refueling. And, then we went to Panama, went through the canal. I got in trouble there, the only time I got into trouble. We stopped on the Atlantic side of the canal, which I think is Colon with Panama City on the two ends. And, ... my cousin's husband was stationed at the other end of the zone. So, I thought I would go and see him overnight and come back. And, it was kind of interesting. I took a bus across the isthmus and ... it was around Lent, and big celebrations were going on. The natives were in town celebrating. And, the bus was filled with these people. And, the bus would be going through a totally dark area and then it would stop and somebody would get off and go into the darkness. (laughter) It probably took me an hour or two to get across. Well, I found my cousin and he wasn't very happy, because a lot of the guys were out drinking and they would come back drunk and throwing up all over the place. He was in charge of that barracks.

KP: Was he Army?

AN: He was ... in the Army.

KP: What rank was he?

AN: Some lower ranked sergeant, I think.

KP: Okay, so he was a sergeant in charge of a barracks.

AN: Yes. Anyway, I did get to see him, and then took a train back the next morning, but I got back about a half hour late. And, in the Navy, that's forbidden. You don't get back late. And the Captain chewed me out. ... Also, I think, he thought my story about the cousin was a lie and I was really out ...

KP: Just having a good time.

AN: Out gallivanting with the women. Panama was notorious for having a huge collection of prostitutes. One of the signalmen I used to take watch with, I would stand these four-hour watches all the time, he was constantly talking about the Paneranian Hoowahs. (laughter) So, I'm sure he had a good time when he was down there.

KP: Was this your first, sort of, port of call, Panama? Or, had you stopped elsewhere?

AN: No, we stopped at Key West.

KP: But, any of the islands?

AN: On the way down, no, I don't think so. I think we probably made it from Key West all the way through the Canal. Then ... coming up the West Coast, we refueled at Manzanillo, which was a refueling base at that time on the West Coast of Mexico. ... And, then we made it to San Diego.

... I'll skip a little bit. At the end of the war, we had lost all these good people, because the war ended in August, '45. And, then we headed back towards Little Creek, Virginia, again. And, when we landed in San Diego, or even before at Hawaii, a lot of the guys had enough points and got out. And, that included everybody with any talent, including the engineering officer, the Captain, the bosun's mate. We were left with a third-class motor machinist mate. And, he couldn't fix the engines. So, we started out from San Diego, and the engines had a lot of miles on them by then. And the engines began to fail one after another. And, when we were two days out, all the engines were gone. We were in real danger. If a storm had come up, we'd be dead. And, we now had this new Captain who was that communications guy, the wimp that I was telling you about. And, he didn't put out an emergency call. I was the Executive Officer then. I'd been promoted from gunnery officer to Executive Officer. And, ... he didn't put out an emergency call. We drifted around there for a couple of days. Finally some destroyer came along which happened to be on the way {they didn't go out of their way to do this}, but they were heading north and they took is in tow and dragged us back to San Diego. But, that was one time that we were really in a life threatening situation, I thought.

KP: Because, you were just drifting?

AN: Just drifting, bouncing around, away. The Captain said, "Well, if a storm came up, we can use the anchor buoy, a dragging buoy." ... It's a conical thing and presumably, you could leave that out off the stern. It will tend to face your nose into the wind. But, in a real storm, that would have about the same effect as a bedsheet.

KP: Did you ever experience a storm when you were in the Navy? A typhoon?

AN: ... No. We had plenty of bad weather. Fairly rough weather, but never a real storm.

KP: You never experienced a typhoon, because people who've experienced a typhoon said that was much more frightening in many ways than battles.

AN: Oh, I'm sure. ... We never had a typhoon, but we had a lot of rough weather. And, what you had to do is change course. We had to go into the waves. Because, if you tried to sail in a trough, it would turn over. Especially a flat bottom boat like ours. So, we spent a lot of time going into the waves. The flat bottom is interesting, because it would go into a wave and then go over the wave, and then go plop onto the water. And, that would kind of go on all night. And, there were some guys who lived in the forward part of the ship who heard bang, bang, all night long.

KP: Did you ever get sea sick?

AN: I got sea sick three or four times. Mostly when I'd been out drinking the night before and it was the first day out. Boy, that's a hell of an experience. The standard joke is, "First you are afraid you are going to die, then you are afraid you're not going to die." But, my job allowed me to sort of set my own pattern of behavior. There was nothing to do, except standing watch. And, we stood watch out in the open. We had a little canopy over our head. But, we were basically out in the open on the bridge of the ship. And, there was wind going over your face. That would keep me from getting sick. There were two places where I would be when it was rough. One was in my sack, where I was Okay. And, the other was up on the bridge. But, I had a real tendency toward sea sickness. ... It became my pattern of behavior, to keep from getting sea sick. Still, three or four times, I failed. Actually, they wanted me to be captain of the ship, after File was discharged. Because nobody trusted this guy Flint. He was really a little weird. But, I turned it down because of my tendency towards sea sickness. I felt that in an emergency, I might not be too useful.

KP: That, if it were stronger weather, you, in fact might be sick.

AN: Yeah, I might be out of commission. So, I didn't want to do it.

KP: Did you have any medical personnel aboard ship?

AN: We had a pharmacist's mate on the boat. Once in a while, he would break out the alcohol. (laughter)

KP: Did you have any serious illness or sickness?

AN: Myself, no.

KP: Or, anyone on the crew?

AN: Oh, ... we had to let one guy off because of sea sickness.

KP: Just couldn't do it.

AN: No. But, I can't recall anything else.

KP: After you made it to San Diego, then how did you get to the Pacific?

AN: Well, we made it from there to Hawaii in one stretch. I guess we had enough fuel. I don't think we refueled.

KP: And did you go ashore in Hawaii?

AN: Oh, yeah ...

KP: And, what struck you about Hawaii?

AN: Well, again, it was very restrictive. I didn't see, I didn't get to tour the island or anything like that. I just went to Honolulu and went to a bar or something. But, I didn't get to see Hawaii. We never had enough time, for one thing.

KP: So, once you really left the Virginia area, you were very much on the go. The Navy was moving you around.

AN: ... Yeah, they were trying to get us out to Okinawa. That's what they were trying to do.

KP: And, then, you mentioned you then went from Hawaii to Okinawa.

AN: No, we were going to go to Okinawa. We learned later that we were destined to be in on the invasion of Okinawa. What our boat was designed for was invasion. ... You could fire 120 rockets in about two minutes. And, these rockets had about twenty pounds of explosives in them, which is equivalent to a good-sized artillery shell. And, the reason we could do it was, because they had no recoil, we had these cheap racks, you know, just metallic racks where the spacing was just done with bars and you'd put a rocket in at the bottom and a rocket in on top of that, and you'd pile up about six or eight rockets. And we had a whole cascade of these things. It came out to 120 rockets. So, this lousy little ship of ours, which only weighed like 150 tons or something, could fire 120 rockets in the space of a few minutes. So, the idea was that, when the Marines were landing in their Higgins boats, we would go in with them. And, then when we were 500 yards off shore, we would let our rockets go. That would be at the last minute, and there would be a lot of us, there were 130 LCS's all together, {of course, they weren't all used in one invasion}. But, anyway, a lot of LCS's, each one throwing 120 rockets, you could really make that beach difficult for whoever was on the beach. So, the idea was we would provide a last-minutes saturation of the beach.

KP: Very close range?

AN: Very close range, right. And, you couldn't miss. But, these things weren't accurate. But, you didn't care as long as they went 500 yards, you didn't care where they landed. And, so that was the purpose of our ship.

KP: To provide close support.

AN: Right for the Marines. And we were on our way to Okinawa to do that, it was late in the war now. That was the last invasion. Then we broke down at Eniwetok Island. ... That's where they fired a hydrogen bomb later on. And, we were stuck there for six weeks waiting for a part.

KP: One part.

AN: One major part. I don't remember what it was called. It was supposed to be in our inventory, but it wasn't. And, I've always had the suspicion that the engineers did it, you know, that they got rid of that part. They knew we weren't going anyplace good. (laughter)

KP: So, there was a lot of trepidation about what was coming.

AN: Well, you know, we were going to war. I don't have a scrap of evidence that anybody jettisoned that part. But, it was kind of strange that the part was missing.

KP: Because, it was a part you're supposed to have.

AN: For the engines, right. And, so we waited six weeks for that part to arrive from San Diego. And, in the meantime, it was delightful at Eniwetok. (laughter) We'd go for swims off the boat. And, there were fish all over the place. There were a lot of ships in that little atoll dumping their garbage and the fish were having a great time. Those fish were so smart, they wouldn't bite at a hook.

KP: Really.

AN: They would put a row of hooks on a line, drop it, wait for the fish to come, and then yank it. Apparently, a fish that's not hungry won't bite on [a hook], I guess. Anyway, it was a nice place to be and we had shore parties there.

KP: So, that's where you had a lot of your beer parties?

AN: I can't recall how frequent they were. It was limited by the amount of beer. But, you could go ashore then, periodically. So, in the meantime, they had the invasion of Okinawa. We got to Okinawa afterwards. We had a little action, which I'll tell you about. But, we never were in an invasion.

KP: So, you missed the initial invasion itself?

AN: Right. Because of the engine part. We were on our way to Okinawa. The Captain knew that, I think. The rest of us didn't.

KP: You didn't know. You just knew you were going someplace, but you didn't know where.

AN: Yeah, the idea was you didn't need to know. ... So, all the other LCS's went on. We'd gone across with many of them in a convoy. ...

KP: But, then you left the convoy because of this part.

AN: Yeah. And then we had to go the rest of the way by ourselves.

KP: And, then you did make it to Okinawa.

AN: We did, and then we must have gotten there, I don't know, a month or so after the invasion. And, Okinawa Harbor then was interesting, because there was a big land battle going on. I think we lost about 40,000 troops there. That was a big battle. The Japanese fought like hell. That was really an indication of what it would have been like if they'd invaded Japan. And so ... there were a lot of ships in the harbor. Ships that were needed to supply the Army and the Marines. And ... they were really vulnerable, because they were only about 300 miles from Japan. It was an easy flight from the Japanese mainland to Okinawa, and they were using Kamikazes indiscriminately at that point. Kamikazes were all over the place. A cheap airplane could, if it was lucky, destroy a major ship, a cruiser or something. And did. We lost a lot of ships to Kamikazes. What they would do is fog up the harbor when ... they knew the Japanese were coming, by radar. Every ship had devices for making fog. It was an emulsion of oil in water. And, if you had all these ships generating fog, within five minutes, you couldn't see a thing. The visibility went to zero. So, the Kamikazes didn't know where the targets were. And ... that worked pretty well. They also sent up interceptors to shoot them down. It wasn't always successful. But, that worked pretty well. There was one problem, and that is you didn't have enough warning. So, what they had were these, what they called radar pickets. They surrounded the island, especially in the direction of Japan, with groups of ships, two or three destroyers. And LCS's went along with the destroyers for additional fire power--we had 40mm and 20mm guns. Also, we were good at putting out fire. We had a lot of firefighting equipment. And, so, 100 miles north of the island, I would say, would be a radar picket. Then, if a Japanese plane took off and headed towards Okinawa, there would be a warning. So, it would give them more time to make their fog. They were called radar pickets. And we were on radar picket for a few weeks all together, I guess. And, that's where I saw the only action. Because, one bright moonlight night, these Kamikazes came in and sank a destroyer.

KP: In your convoy.

AN: In our convoy, right. And, the sinking was a slow process, because it just went down slowly, wherever it hit the damn thing.
KP: But, you saw this Kamikaze coming?

AN: Oh, we saw it, yeah.

KP: And, you were shooting at it at the time?

AN: Well, I don't know if we had a good shot at that one. We did shoot at another one later on that night, a second attack. But, that first one, I don't think we shot at. Anyhow, the whole crew of the destroyer dived into the water, because the destroyer was on fire and it looked like it was going to sink and we were also afraid it was going to blow up. So, they went into the water and we rescued a whole bunch of them, we and the other LCS group. That was really [a] hectic thing. Of course, we were also trying to put out the fire on that destroyer. And, as a matter of fact, we put it out, we and a couple of other LCS's.

KP: When you say you were equipped for fire fighting, was that part of the ship's design that that would be one of your functions?

AN: Yeah, ... we had these portable things. There were some that were permanent on the ship, but there were all these others that were portable and could be moved, and they were powerful. They would pump seawater out through a hose. So, we were equipped to ...

KP: In some ways, it could be a fire boat.

AN: Yes, to some extent. We had some anti-aircraft capability. We had two twin 40mm and a half a dozen 20mm guns. And, then we had this firefighting equipment. And, we had the rockets. So, this little boat was multi-functional.

KP: Did anyone in your crew go to firefighting school?

AN: We all had some training. Now, where the hell was it? I don't remember. But I don't recall if we had any real specialized training. ... We all had some training in firefighting and I'm trying to figure out where that was. Probably at the same time it was being shaken down at the Solomons. We also did exercises on our ship.

KP: Because, people have said, in terms of one of the things you fear the most on a ship is fire.

AN: Oh, yeah.

KP: The nature of ships.

AN: Ammunition all over the place.

KP: Well, especially with those rockets. You have an enormous store on board.

AN: We had a lot of powder on board, right. We also had ammunition for the 40mm guns and the 20mm guns. So, it was like a little powder keg. Anyway, we had to go right up to the destroyer in order to put out the fire. And, at one point, the Captain got distracted. There were guys floating around in the water. He was trying to control that operation. And, you can't just go up to a ship. You have to go back and forth. You have to maintain your distance. And, he lost track of it and we went into the destroyer. We damaged our ship and knocked a hole in the bottom at the bow. But, it was small enough so that they could control it, pump out the water.

So, we were pumping water out of our ship and I guess eventually they patched it somehow. I'm sure Young was in on that. I was gunnery officer so I was sitting up on the bridge there looking around to see if there were any more Kamikazes, if we could see them. So, that was a wild night. We picked up a lot of survivors, including, the captain of the flotilla, who was a four striper. ... That's why our captain got the Silver Star, because he saved this guy's life, so to speak.

KP: This must have been a very chaotic scene.

AN: It was really chaotic. And I was standing up there on the bridge. There were a lot of people on that small bridge. The quartermaster, the captain, me, a signalman. Four or five guys up on the bridge, in general quarters. And, the quartermaster was an experienced guy, I had forgotten about Gillespie. He was a quartermaster first class, I think. ... And, after a while, he sort of quietly helped command the ship. The captain was so busy that after we knocked a hole in the boat, Gillespie realized that he'd better do something. Normally, the captain would give an order, the captain would say, "All engines ahead one third speed." And Gillespie would say, "All engines ahead, one third speed." Well, after that, Gillespie began issuing his own orders. (laughter) And, I was very thankful for it, to keep us from banging into that destroyer again.

KP: In some ways the captain had gotten really distracted by these men floating around when he should have been more concerned with ...

AN: Well, somebody had to do it. It was a full-time job to maintain the distance from the destroyer. It wasn't a rough night, the sea wasn't rough, but nevertheless, you don't stay in one place in a boat. Somebody had to have the full-time job of maintaining the distance ...

KP: And, he wasn't paying attention?

AN: Well, he was distracted. There were all kinds of things happening. I can't blame him, but the smart thing for him to do would have been to tell Gillespie to take over, maintain that distance. Or me, I don't know. Probably didn't trust me. Anyway, later on, another plane came across and it was a very slow plane. They thought they were tracking a PT-boat or something, it was so slow. But, it came right in front of the nose of our boat. We were firing at it, and got credit for shooting it down. But, what happened was it just missed the destroyer. It just dived, it just went into the ocean just short of the destroyer. I don't think we ever hit it. But, we claimed credit for it.

KP: You got the credit?

AN: Got to paint a zero on the [ship]. That was another reason why the captain got the silver star.

KP: I've been told that, in terms of Kamikaze, you could literally see the pilot.

AN: In many of the planes. They used all kinds of planes for it. Any leftover plane was a Kamikaze. Anything to which they could strap a 500 pound bomb was a Kamikaze.

KP: What did you think of the Japanese during the war?

AN: Oh, I'd never, I don't know what to think of them. Their reputation was that they were tough, and they were. They were good. But, I never had direct contact with them.

KP: You did not have an image of them.

AN: ... Until Okinawa, we weren't even close to them. So, anyway, Young, the engineering officer, was standing on the prow of the boat when the plane went by us heading for that destroyer, which it missed. He said, "You guys didn't hit anything, but if I'd had my pistol, I could have shot it down." (laughter) He probably could have.

KP: Being in the battle, though, with Kamikazes must have been scary.

AN: Well, that night we were so busy and the events were so chaotic that you didn't have time to be afraid, you simply didn't. You were totally pre-occupied and fear just never entered into it. A couple of nights later, we were still on the same radar picket and we got a warning that a plane was coming. I don't think we ever saw it. Though we had a warning it was coming. Boy, I got scared.

KP: You had time to think about it.

AN: I had time to really think about it, real turmoil.

KP: But, when you were actually in the heat of battle.

AN: Heat of battle, I don't think anybody had time to be scared. Except one guy, Burgess. ... They were laughing at him because he was going along the deck on all fours-an electrician's mate.

KP: Did you see any other combat?

AN: That was the only combat.

KP: How much picket duty did you do? How many?

AN: Probably no more than a few weeks.

KP: Then the war came to an end?

AN: No, they then shipped us from Okinawa to the Philippines. And, we were in the Philippines when the war ended. I know now that what they were doing was getting ready for the invasion of Japan, which was scheduled for October or November. The war ended in August, so if they were going to invade Japan in October, they really had to start getting ready. I think they sent us

up to the Philippines, Subic Bay, to get us staged for the next invasion. I spoke to Captain File about a year ago and learned that he had orders relating to the invasion.

KP: And, so that's where you were when the atomic bomb was dropped?

AN: Yeah. My good friend, Smitty, won 80 dollars from me. Somehow he got the notion the war was going to end. (laughter) So, ... this was probably in July. And, of course, nobody knew anything about an atomic bomb. I don't know where he got this notion, whether he got a letter from somebody or I don't know what, but everybody said, "You're nuts." You know, how's the war going to end? The Japanese haven't been defeated, and they're going to fight to the end. And, so I bet him 40 to one, 80 dollars to two, that the war wouldn't be over in two months. (laughter)

KP: And, you thought this was a pretty good, safe bet to make?

AN: Well, sure, who wouldn't, you know at that time? And so I had mixed feelings when the war ended. (laughter)

KP: You had a science background.

AN: Chemistry.

KP: In terms of the atomic bomb explosion, what did you think of it?

AN: I knew nothing about that.

KP: You did not speculate about it.

AN: I did not have a clue as to what was going on.

KP: In terms of the physics.

AN: Well, I knew that it was a nuclear reaction. I didn't know what it was. ... That reaction had only been discovered a few years earlier, around 1936 or so. And, I don't think it had been publicized to the laymen. In any case, I didn't ...

KP: Even with a science background, you still really did not fully understand the atomic bomb.

AN: Not a thing.

KP: You were in the Philippines and then what happened?

AN: Well, then the war ended. And, then eventually we started back, reversing our course.

KP: And, you gradually lost crew members?

AN: Yeah. We lost Baker in the Marianas, in Guam, that's where he was court martialed and sent to prison. And, then we headed back, Marianas, the Marshalls, Hawaii, San Diego.

----------END OF SIDE TWO, TAPE ONE----------

KP: This continues an interview with Al Nisonoff on August 1, 1994 in Waltham, Massachusetts, with Kurt Piehler. So, you were saying that you were losing crew members as you got closer to home.

AN: Well, we lost some in Hawaii, I think, and then a lot in San Diego.

KP: And, then you had the experience of being without engines at sea.

AN: When we left San Diego. We were in San Diego for quite a while, I think about six weeks. Our new skipper, the former communications officer, was from San Diego.

KP: So, he was not in a hurry to get out.

AN: He was in no hurry at all. As a matter of fact, he got reprimanded or something by the captain of the base, because things were going so slowly. ... He would go home every night. (laughter)

KP: And, you were stuck.

AN: We were stuck. Smitty and I liked to go off together on liberty and we didn't have the opportunity to do that much, because ... we were shorthanded on officers.

KP: And, you still maintained watch?

AN: Well, you have to maintain watch, sure. So, ... it really cut down on our ability to go out and have a drink or something like that together. I thought, maybe when we get to the East Coast, we'll get this back, you know. But, anyway, ... Flint really took his time about the repairs. He didn't push it at all. So, it was six weeks before we finally got off. And, then, as I said, as soon as we left, the engines started to break down, one after the other. And, we didn't have anybody aboard who could really fix them. ...

KP: Did you eventually make it to the East Coast?

AN: Oh, yeah. ... I was discharged ... from Little Creek, Virginia. They decommissioned the ship there, I believe.

KP: So you went through the Panama Canal again?

AN: Back in reverse, right. And, I can't recall if we stopped in Key West on the way up or not. Must have stopped some place, but I can't recall where it was.

KP: Had you thought of making the Navy your career?

AN: Oh, no ...

KP: You weren't eager to get out.

AN: I was eager. Well ... there's something I should have mentioned about, the first time we were in San Diego. I got together with a school mate from Rutgers, a Boris Clyman, who later became Bruce Clyman. He died at an early age. I can't remember what he died of. Sam Blum would remember. He became a patent attorney. But, he had somehow gotten into meteorology school and he ended up on an aircraft carrier in San Diego. And, he had an unenviable job. At five o'clock in the morning, the captain would say to him, "What's the weather going to be like out there?" ... And, apparently, it took this big aircraft carrier a couple of hours to get out there where they could do exercises. It's a big harbor in San Diego so it takes time to get out of the harbor, then they had to get out to the sea a ways. So, on the basis of what Clyman would tell him about the weather, he would decide whether or not to go out. So, if Clyman told him it was going to be a good day, and he went out there and it wasn't, the four-striped captain and the one-striped ensign would have words. (laughter) Anyhow, Clyman told me about the G.I. bill, which had been passed. He said, "Are you going to get a Ph.D. after the war?" I said, "Ph.D.?" ... It never occurred to me to even think about that.

KP: So, you really had no plans.

AN: I had no plans at all. I was thinking maybe I'd go back to Detroit.

KP: And, work with U.S. Rubber.

AN: Work with U.S. Rubber again. I really hadn't given it any thought. He said, "Why don't you get a Ph.D.?" So, I said, "Gee, can you do that?" He said, "Yeah, they're going to pay for it." And ... it was the first time that this had been brought home to me. And after that I began to think, yes, I guess I'll get a Ph.D. as long as the government's going to pay for it. So, that's when my career, future career, was more or less determined.

KP: So, if it hadn't been for the G.I. Bill your life might have been very different.

AN: Oh, I don't know.

KP: You don't know. But, it definitely gave you an opportunity.

AN: I do know that, having learned about the G.I. Bill, I immediately made that decision that I wanted to get a Ph.D. So, I started to make applications before I was discharged, obviously.

KP: And, you had some time.

AN: I had a lot of time for corresponding. I was accepted at the University of Chicago and Johns Hopkins. ... So, now we're back to San Diego, then Panama, then back up to Little Creek. And, that's where I eventually got discharged. But, I got my first bad fitness report up there. When we got to Little Creek, I actually once double-dated with Flint. Took him up to New Jersey. And he and my sister and a girlfriend of my sister's went out to New York and did something. And, we came back. And, then I began to ask him for weekend passes, because I wanted to visit my folks and also my fiancee was going to come to the East Coast. But, he was under a lot of pressure then to get this boat into shape ... it was a mess. Mainly it needed scraping and painting, because the whole damn thing was rusty.

KP: Even though it was being decommissioned it still needed to be put in shape.

AN: It had to be made suitable for the Navy. I doubt that it steamed out to sea again. They probably sprayed it with plastic. And, God knows where it is now. They must have eventually just ...

KP: Made it surplus.

AN: I don't know what they do with old ships. Anyhow, the Navy wanted that ship looking good. And, the guns were kind of hopeless because they have these grooves in the gun barrels, and they were rusty. And, there was nothing you could do with those. But, nevertheless, they wanted to put everything into shape. The big job was painting, scraping and painting. And, Flint said, "No, I'm under a lot of pressure. ... I'm afraid I can't give you any weekends off." Well, in San Diego, he had abandoned us, you know. He never stayed aboard. Not once. I really got mad and he and I were sort of like equals, in a way. I wasn't used to thinking of him as the captain. And, I called him a son of a bitch. And, the Navy frowns on that. I was lucky he didn't court martial me. ... Probably the fact that we had been reasonably close. I shoudn't say close but, you know, cordial at one time. In retrospect, it was a really stupid thing to do. The only thing he did was to write a bad fitness report when he left. He left before I did. And, you get a fitness report when either you leave or the captain leaves, or every six months. So, he had to write this fitness report. But, he has to let me see it and sign it, and you're allowed to comment. Well, he gave me that damn fitness report around six o'clock in the evening the day before he was going to leave the next morning. I got busy on a typewriter and defended myself. Oh, there were also things that he checked off, you know, like courage and honesty. He put me in the lower ten percent on everything. Battle, how you behaved in battle. (laughter) So, somewhere in Washington, there's one rotten fitness report. (laughter)

KP: You were basically waiting to be discharged.

AN: Yeah, I was discharged a few weeks later.

KP: And, the ship was put in shape and ...

AN: Well, he was replaced by another captain. And, I worked very hard under him, because I wanted to get a good fitness report. So, I worked my ass off for a ...

KP: How many in your group stayed on in the Navy, or did most just want to get out?

AN: Regular Navy. I don't recall anyone staying on. But, it's possible that somebody did. Let's see, did Young stay on? No, he was discharged. ... Can't think of any other major points. Well, I'm sure you have other questions.

KP: Yeah, you went to graduate school right from the Navy.

AN: Yeah, immediately. I got married and I got out of the Navy in July, got married in July, and I went to graduate school in September.

KP: Johns Hopkins. Did you live on or off campus?

AN: Off campus. We were married.

KP: What was it like to be an officer and then become a graduate student?

AN: I don't know. I kind of enjoyed being a graduate student. I don't recall being unhappy. There were a lot of people in the same boat. A lot of the guys that had been in the service and just come back.

KP: So, you really felt like you were part of a cadre of people who you had been in the service?

AN: Yeah, not all of them had been, but a lot had and they were a pretty ... conscientious bunch of guys.

KP: Most of you had families, wives?

AN: ... A lot of the guys were married. Not all.

KP: Did you have a sense you wanted to get on with life now that you had been in the Navy?

AN: I don't know. ... I'm not that introspective in that sense. I just ... took things as they came. Mine was to go to graduate school, so I went to graduate school.

KP: In his interview, Sam Blum said he felt privileged to be part of what he viewed as the Golden Age of American science.

AN: That was a little later.

KP: What was your sense of the direction of chemistry?

AN: Oh, I didn't become a chemist, I became a biochemist.

KP: Biochemist.

AN: I did go to work for U.S. Rubber Company though, again, in Naugatuck, Connecticut. I worked for them for two years after I got my Ph.D., and then I decided I wanted to go back, go into biochemistry. I'd done my thesis on a biochemical topic. So, I was sort of a hybrid chemist/biochemist. And, my first job was with U.S. Rubber Company, but in Naugatuck, not Detroit. I got the job by virtue of my previous job. And, after two years or less than two years, I decided, I didn't want to do that. I wanted to get into biological sciences.

KP: And, you wanted to be in a university?

AN: Well, I wanted to do research. That was usually university based. Although, my first job in ... biochemistry was really at an institute, the Roswell Park Institute in Buffalo, where I learned immunology from this guy that built up this new group at Roswell Park. They were just expanding Roswell Park into a big cancer institute. He hired a half a dozen guys to work with him.
KP: So, mainly it was your training at Roswell that shaped the field you would specialize in.

AN: I didn't know what an antibody was when I went to work with him. So, a lot of my jobs have been slightly unplanned. After I was at Roswell Park for six years, I had a big falling out with the boss, because he didn't want independent research under him. My ego was getting the best of me and, since I was doing the research, I wanted full credit for it. He couldn't function that way. He had to work with people. It would have put him out in the cold if everybody had stopped publishing with him. So, he had a point. Anyway, we had a bit fight. By then I had published a number of papers and I managed to get a job at the University of Illinois, Urbana, as an associate professor. It was a tenured job. I was an associate professor of microbiology. But, I'd never had a course in microbiology. At that time, microbiology departments liked to have a token immunologist because, ... they make use of immunology in microbiology. So, they didn't care whether I knew any microbiology or not. I would teach a course in immunology. Then two years later, I was a full professor and I still had never had a course in microbiology. (laughter)

KP: You ended up being in the microbiology department by accident.

AN: Right. But, at that time, people were really starting to get interested in research. Sam said it was the golden age. Well it was, because post-war, the United States discovered basic research and decided it was important and began to put money into it. And, the rate of growth was good. From 1960 to 1975, it was a rather easy time to get a grant. Then after '75, it began to gradually go down hill, because the number of people began to exceed the number of grants, and it got worse and worse and now it's gotten horrible for beginners in the field. I don't know if you hear this from people at Rutgers or not, but ...

KP: Friends of mine from the sciences have said this.

AN: It's really hard to get started.

KP: Whereas, you found, when you were entering it was easier.

AN: I never had trouble with grants. I think the first one I ever got turned down was maybe three years ago or so. But, then I sent it in again and it got funded.

KP: But, until that point you had no problem.

AN: I had no problem.

KP: You, in a sense, could do whatever you wanted. Not anything you wanted, but you had a flexibility in your career.

AN: Oh yeah. You chose your own problem. That's the whole idea of it. The scientist chooses the problem. It has to be within your area of expertise. Otherwise, you don't have credibility. But unless you want to switch areas, that's the logical thing to do anyway. So, for a long time, it was easy to get grants. And, now it's gotten to the point where they're funding such a small percentage that it's tough. The money keeps increasing, or stays the same, but not as fast as the number of applicants.

KP: Sam Blum has told me that you applied for a job where you walked out.

AN: I walked out?

KP: Yes, you mentioned it earlier before we started taping. That the level of anti-Semitism had just been high in some industries.

AN: I think he probably may have misinterpreted a story I told him. I walked out. We could tell anti-Semitism was there, because we just wouldn't be offered any jobs. We were the last ones to get jobs. I think what I may have told him was this. That, when I first went to work for U.S. Rubber Company, one of the higher level guys, not the guy I was going to work for, but somebody above him, told me that, in a sense I should be kind of proud, because normally they didn't hire any Jews. That's probably what I told Sam. I didn't walk out. I didn't have the guts to walk out ... or the money. (laughter)

KP: When did you get a sense that it was better in profession, or in American society?

AN: For Jews?

KP: For Jews, in your career.

AN: Oh, it just, gradually became apparent. You're always aware, more or less, of what's going on. And, then when you hear of guys with Jewish names getting good jobs, and you realize that it isn't as bad as it used to be. I'll bet there's still some companies where they practice anti-

Semitism or where it's difficult for Jews to get ahead. There are also a lot of places where Jews are high up in the administration.

KP: Initially in the 1940s, did you think it would be tough going for you?

AN: Well, I knew it was hard for Jews to get jobs in industry. I'm sure that the guy wasn't lying when he said U.S. Rubber Company, normally doesn't hire Jews. The change was probably based on the fact that there was a shortage of people. I think it was entirely that. There was a shortage at the moment so that's why they started hiring Jews. They loved money more than they hated Jews. (laughter) But, now, I think ... well, you know what society is like. There's still plenty of pockets. But, that type of thing is not as prevalent.

KP: I have a weak science background. Is there anything in terms of your career that is significant? I might try to arrange a follow-up interview regarding your scientific career with someone who has expertise in your field.

AN: Did I send you a c.v. or something?

KP: Well, there was some information in your alumni files about your career. For example, there was a press release from the University of Illinois, at Chicago, and it talked about some of your work. You were one of the first researchers who prepared crystals of antibodies.

AN: Oh, yeah, that's true.

KP: [Reading] "A process which he hopes will lead to the first three-dimensional picture of an antibody."

AN: That's it.

KP: That's it. And, how important was that discovery?

AN: Well, I think it ... set the field ahead a little bit. That isn't incidentally a major accomplishment, but, ... it set the field ahead, because people had been trying to crystallize antibodies and failing. What we did was to prepare the fragment of an antibody, which is about one third of an antibody, which has the active site in it. So, all the information you really want is there, about how the antibody works. But, it turned out to be much easier to crystallize the smaller chunk than the entire antibody. The entire antibody's kind of floppy. It makes it hard to crystallize. It still hasn't been done very much. So, we crystallized the fragments of antibodies; first time we tried it, it worked. And, then we collaborated with a crytalwgrapher to see if it worked. But, if we hadn't tried fragments, it might have been a few years before anybody did. Nothing you do wouldn't have been done later. It's a matter of being first and sometimes moving the field ahead a couple of months or a couple of years.

KP: What would you characterize as your biggest accomplishments?

AN: Well, the thing that I got the most recognition for had to do with the structure of antibodies, what the general structure of an antibody is. The work followed up on some other work that won the Nobel prize, but my work was not of Nobel prize character. But, it added to the story considerably.

KP: Added to the field on what we know on antibodies. Have you had any disappointments in terms of your research?

AN: Well, no, but I made one major mistake in my career when I took this job at Brandeis. It looked like a terrific job. It was ... offered to me by the son of the guy who gave me the job at Illinois earlier. They were both named Halvorson. They ... had gotten the money for this building in 1971. And, they were going to finish the fifth floor in 1975. And, they wanted that to be in immunology. I was able to hire three faculty personnel people. There were four offices on the floor. And, they had a lot of money for equipment. I could buy almost anything I wanted. They had gotten a big grant from a guy named Rosenstiel, 20 million dollars, which was a lot of money in 1971. At the same time, he gave about 25 million to the University of Miami for oceanography, for an institute down there. So this looked like a good job, and I was interested in a new job, because I was head of the biochemistry department at medical school in Illinois, Chicago. I started out at Urbana, then moved to Chicago. And, ... I didn't like administration at all. And, I was looking around for a job. But, in retrospect, I should have taken a job at a big medical school. We needed a larger group, because four people was not enough to have a major immunology program. And, that's important in terms of generating large grants called program project grants, and also for chipping in for major pieces of equipment, technicians to run them and so forth. The big operations are the more successful ones. I still had a good career here.

KP: But, even though you had a good pot of money, you did not have the critical mass that you needed.

AN: Did not have the critical mass to keep going for a long time. And, this is off the record, but I made a couple, one or two mistakes in hiring faculty, and that set us back. But, by and large, somebody from the outside would say this has been a fairly successful operation.

KP: But, you can see in retrospect that you would have done something different.

AN: I would have had a stronger career if I had taken a job as at a big medical school.

KP: Do you think that is a pattern in American science?

AN: Oh, yes. As a matter of fact, the only university labs that are flourishing now, and even they're struggling more than they used to, are the big groups, the big powerful groups. They have the wherewithal to keep moving fast. I can't complain because I got into the National Academy of Sciences while I was here. As a matter of fact, I was here nine years when I got in. It obviously didn't destroy my career. But, I suppose I'm thinking about that now, because if I had gone to a big medical school, I might not be retiring at this point. I might still have been

functioning until I was 80 years old. (laughter) There is a guy at MIT whom I kind of envy, who has done just that. But, that's a minor gripe.

KP: Is there anyone you remember from Rutgers who died during the war, any classmates you have any memories of?

AN: I don't recall. I'm sure that they talked about them at the reunion. But, I don't think I knew any of them.

KP: I thought I would ask if you remember any.

AN: ... I guess the year had something to do with that. It was the class of '42. And, by then, the war was already well underway and many of these people took jobs. So, that the ones, there probably weren't that many, at least in chemistry, who got into the war, except possibly near the end of the war.

KP: Yes, in fact, Sam Blum said he was not drafted for a year, and Ralph Schmidt could only get in as infantry. And, he decided he was not going to join infantry. And, then he ended up not being able to get into the military because he had hay fever. And, I think asthma. Your son was of draft age during the Vietnam war. Did you have any concerns?

AN: Oh, I did, because he was very much anti-war, and he just happened to get a low number or a high number, whatever keeps you out, ... so he was never called. But, I was afraid he'd go to Sweden or Canada or something like that. He was really anti-Vietnam.

KP: What did you think of the war?

AN: I thought it stunk. I thought it was terrible. I took sides with Bill Clinton. (laughter)

KP: So, during the Vietnam War, you really did not support it.

AN: Oh, which war are you talking about?

KP: Vietnam.

AN: Vietnam. Oh, yes, that was an entirely different war. I mean, we went over there looking for that war, based on Dulles' theory about dominos and all this crap. So we lost the war, so what? And, now we're about ready to start making peace with North Vietnam. (laughter) I mean, it isn't as if the whole world became communist as a consequence. That was a horrible war. The generals liked wars and the politicians were afraid of being soft. It was an awful war. In all ways. What do you think of it?

KP: At the time, I was too young to really form an opinion.

AN: To be thinking about it.

KP: Yes, I mean, ... I was very conservative I was really small, for some reason. And, in retrospect, I sort of agree with you that the premises for going in the war were a mistake.

AN: It was a total waste. I mean, we lost and we're just where we would have been if we'd won.

KP: Yes, and it is also striking how it has been remembered, in that, we really, militarily, we won all the battles. As I tell my classes, we won all the battles, but just got tired of fighting. If we wanted to, we would probably still be running around jungles.

AN: Yeah, it could have gone on forever. And, then the generals were lying. The light at the end of the tunnel. Westmoreland was a chronic liar. He was always lying about it, when the war was going to end.

KP: Would you say, in terms of military, were you more skeptical about the military having been in it?

AN: About their ability?

KP: Yeah.

AN: I don't think I was thinking about it much at the time. They seemed to be pretty successful out there in the Pacific. They seemed to know what they were doing. I suppose, it was our industrial capacity that really made the difference. Good planes, good ships, lots of ships, unlimited supplies. No, I think ... our military capabilities were pretty good. Iraq was impressive, wasn't it.

KP: Yes, it certainly was.

AN: On the other hand, that doesn't mean I trust the general. MacArthur would have gotten us into World War III. Very happily. He would have been delighted to get us into World War III.

KP: Actually, in my work, they were planning, when they had World War II, and they had the Tomb of the Unknown of the Soldiers, they had plans for a World War III tomb. This was in '48, '49, they were considering making a spot for World War III. (laughter)

AN: Well, generals like wars. That's what they're there for. It's a wasted career if they don't have a single war.

KP: Is there anything I forgot to ask on anything?

AN: Well, I'll tell you. I'll take you wherever you want to go and you can ask me in the car.

KP: Okay. I'm out of questions.

----------END OF INTERVIEW----------

Reviewed: 1/13/97 Jennifer Lenkiewicz
Reviewed: 1/16/97 G. Kurt Piehler
Edited: 1/17/97 Tara Kraenzlin
Edited: 2/1/97 Alfred Nisonoff
Entered: 2/24/97 G. Kurt Piehler