

Samuel Proctor Oral History Program
College of Liberal Arts and Sciences

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The Samuel Proctor Oral History Program (SPOHP) was founded by Dr. Samuel Proctor at the University of Florida in 1967. Its original projects were collections centered around Florida history with the purpose of preserving eyewitness accounts of economic, social, political, religious and intellectual life in Florida and the South. In the 45 years since its inception, SPOHP has collected over 5,000 interviews in its archives.

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<http://oral.history.ufl.edu/pdfs/SPOHP%20Style%20Guide%202013.pdf> .

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VWV-071

Interviewee: Dr. Martin Fackler

Interviewer: Dr. Paul Ortiz

Date: June 7, 2012

O: We're here today with Dr. Martin Fackler, who is a retired colonel in the United States Army Medical Corps, among other endeavors. My name is Paul Ortiz. Dr. Fackler, I want to start by thanking you for giving your time and energy; I know you have a very busy schedule. We really appreciate you sitting down with us at the University of Florida.

F: You are welcome.

O: Well, Dr. Fackler, I wonder, could we start with your early childhood? If you could tell me maybe a little bit about maybe where you were born, something, your early family life?

F: Yeah, I was born in southeastern Pennsylvania, about two or three miles south of the small town of York, Pennsylvania. York's a town of about sixty, back then it was about fifty, sixty thousand. I grew up outside the town, and there were woods and fields and it was just nice to be outdoors running around. But, yeah, we were close enough in town. I could walk in town if I had to, it was couple miles, but usually didn't. But, it was a nice place to grow up. I went to grade school very close to where I lived, south of York. Then I went to York High School. Now, I had to go into York, York High School, which is a good high school. For that, got a good education there, and prepared me to attend college and I decided to go to Gettysburg College [Gettysburg College is a private liberal arts college founded in 1832 in Gettysburg, Pennsylvania]. Gettysburg is about thirty-five miles away from York, so it was fairly close. They had quite a good department in chemistry, and I was particularly interested in that subject. So, I went to

Gettysburg College. I had already determined that how I was going to use the chemistry background, I was going to go into medicine. That had been already determined. My grandfather had been a doctor in York and my uncle was a doctor in York and I was the only male in this generation, and it was sort of suggested strongly that it'd be a nice thing for me to do. Although I was never pushed into it, and you know, it was something I wanted to do.

O: And it was something you were thinking about, even from an early age, like high school?

F: Yes. And the other thing, Gettysburg had a very good reputation for pre-medical training. So, I went to Gettysburg, did pretty well scholastically. The other thing, how shall I say this? I don't exactly resent it, but the advice I got in college, that was that going for medical school, you've got to stay four years, there's no way you can get in to medical school with only three years of college, and...if your grades are good enough, you can. I could have, but once they give you this advice, they say, well, if you're going to start out with an English course and a history course, you have to have a few of these for the B.A. But once you get those in your early years, then you have to stay four years to get your medical school things in. You have to have basic chemistry followed by your organic chemistry, and you have to have physics and biology. So, you have to have a fair number of things for medical school. However—it was okay. But later on, I looked back on into it. There were places—I have a close friend that went to medical school with me at Yale, and they have a program at Yale in which you take your undergraduate school at Yale, go to Yale Medical School, and you go to medical school after three

years, you get your undergraduate degree after your first year of medical. So, you save the year there.

O: Oh. I've never heard of that, that's interesting.

F: So, looking back on it, I could have saved a year. But I don't think it makes a hill of—
[laughter] At this point, it doesn't make much difference.

O: Yeah. Dr. Fackler, could you talk a little bit more about—you were mentioning your father, grandfather, it sounds like they also had really distinguished careers. Can you talk about them maybe a little bit?

F: My grandfather, who was a general practitioner in York, Pennsylvania, and my uncle, wasn't my father, was my uncle who he was an eye, ear, nose, and throat specialist back when it wasn't split. Now, it's ophthalmology and ENT, but at that time, you could do them all [Ophthalmology is the branch of medicine dealing with the eye. ENT is a branch of medicine, also known as otolaryngology, dealing with the ear, nose, and throat]. He was a specialist in that. He had a practice in York and didn't have any specific academic credentials except he was practiced especially in private practice in York, Pennsylvania and was well-respected and that was it.

O: So, it sounds like they had a certain impact on you in terms of your—

F: Well, as I say, it was thought by the family, it would be nice to have a male in this generation, since I was the only male in this generation, and there were two generations that had a male physician, it would be nice if we had one. But, as I say, I was definitely not pushed. It was fine with me. I don't know if I came up with the idea myself or if the

idea came from that fact, who knows where it started. But, I like science. I liked what medicine was all about, and so no problem, I guess. Wanted to do it.

O: That's great. Were there any professors at Gettysburg that had an impact on you that you kind of recall?

F: Well, Dr. Zinn, Z-i-n-n, he was a grand old man in the chemistry department. Dr. Zinn had a reputation that if he thought you would make a good doctor, he could get you into any medical school he wanted. He had been sending people to medical school for a long time, mostly to the Philadelphia schools, because it was only a hundred miles away. But other schools, also. His reputation was—that was another reason that Gettysburg was a good choice, you see. Looking at all this from the beginning, and not knowing the things I know now, I would have changed a couple things. As I say, I would have probably started out in going only three years or two years into summer school to Gettysburg and then going on to medical school, but, you know, as I say, it worked out. The thing about it is that what I know now is that it was nice to have a person of Dr. Zinn's stature on your side, but if you have good enough marks, you don't need him. It was really good to have him if you were a B student; it was good to have Dr. Zinn around. If you were an A student, you don't need Dr. Zinn. But I didn't know that at the time, you know. And I didn't know at the time I was going to be an A student. [laughter]

O: Right.

F: Second-guessing what your life is is difficult. Anyhow...actually, I developed an interest in languages when I was in high school. I took a year of Spanish and I didn't have a good teacher. I got an A and, of course, didn't learn a thing. Then, it was suggested that

this Madame Seeks, who is a French teacher, was really good. So, I took one year of French, my senior year in high school with Madame Seeks. She was very good and impressed me. I decided I would like to have French as a second language, like to work on that. So, when I got to college, then, I took two or three years as college French, and had a minor, a strong minor in French. My plan had been to go—I was wanting to go to McGill Medical School, because McGill was in Montreal, a truly bilingual city. Four years in Montreal, I could have been fluent in French, sort of automatically as well as getting a medical education and McGill was quite a good medical school. Actually, I had gone up there to interview and had an acceptance ahead of their regular classes because they knew I had a little bit of a financial problem and could use some help. They couldn't give me help the first year, but said, after the first year, they possibly could. So, I was strongly considering going to McGill. The reason I got up there, as a matter of fact, it was funny—it got into another aspect of my life. When I was running around in York as a kid, my parents had me take a year of piano lessons. I hated it.

O: [Laughter]

F: So, I convinced my mother and father too, no, I don't want to take it. Okay, you can stop the piano, but you have to choose an instrument. Okay. I chose the clarinet, okay. Took a year of that. Awful, hated it. [Laughter] It's too bad, because at this point, I really liked music and it would have been nice to know these things. But, at that time, I didn't liked it. Then, what really affects what I later did in life, probably one of the most interesting things I did in life was to convince my mother and father to allow me to give up the clarinet, sell the clarinet, and use the proceeds to buy my first rifle.

O: Wow. [Laughter]

F: Which I did, which I did. I started with a .22 rifle. We had a rifle club outside of York, and they were quite good about giving you proper training. I would use it—we had some groundhogs around—I'd shoot some groundhogs and squirrels and enjoy that. But, anyhow, that gave me a good background in shooting. Then, I used that to get in summer camps, all of the place, they have riflery programs, a lot of them. In the *American Rifleman*, which is the magazine for the National Rifle Association, they mention that these camps were looking for certified instructors [The National Rifle Association is a non-profit organization founded in 1871 to promote firearm ownership, marksmanship, safety, hunting, and self-defense]. So, I became a certified instructor in riflery, and actually, spent six of the most delightful summers of my life at a lake about twenty miles—it was in Vermont, but twenty miles north of Dartmouth. It was a wonderful place. Both two big boys' camps and I ran a riflery program at one of them. Another nice thing about it, there were six large girls' camps on the same lake.

O: Okay. [Laughter]

F: Such a social situation. I would have paid them to go back, it was that nice.

O: Was this during your high school years?

F: No, no, no. This was college and medical school, for the all four years of college and the first two years of medical school, six summers I went up there. Because of the fact I was up in Vermont, the trip to Montreal, to McGill, was very short. I actually went there for an interview, and that's when I got accepted early at McGill. So, I was sort of set to go there, and then found out about a scholarship. A Yale graduate named Johnny Hooper,

he was a lawyer in town, I think he was a bachelor. He liked Yale a lot, and when he died, he left in his estate proceeds to send a—this is the way the scholarship was announced—a York County boy to go there. [Laughter] I got the scholarship.

O: Wow.

F: That made it less expensive, since I had a scholarship, it was less expensive, I went to Yale instead of McGill, which turned out well. I really like Yale in that Yale Medical School had what they call the Yale System, very much like the European System. You don't want to come to class? Don't come to class. You don't want to take any tests? Don't take any tests. That's okay. All you gotta do is you gotta pass your National Board exams after your second year, or we kick you out. So, that was the way it was run, and I liked that. It worked out well.

O: What was Yale like during those years?

F: I enjoyed it greatly. Looking back on my life, if I had to do it again, I'd have gone to Yale as an undergrad, you see, but I didn't know enough at that time, because I really enjoyed it. I got an especially good chance to get to know Yale in my four years there in medical school because I spent three of those years living in the old campus at Yale. When I was at Gettysburg, I had a job, and my senior year I lived in a freshman dorm as a dorm counselor for the freshmen. With that experience, when I went to Yale, they had the same situation at Yale. After my first year living in the medical school dorm, I applied and got a job as a freshman counselor on the undergraduate campus for the latter three years of my medical school. It was about a six-block walk, but we got to know, as freshman counselors, you got to know very well the sixteen or seventeen you had each

year. You had to write reports on them a couple times a year, you sat as a member of the disciplinary board if they ever got in any trouble, you talked to their parents if their parents were concerned about them, and I had two people you will recognize. One is a fellow named Jack Heinz, Heinz 57. Unfortunately, Jack died in a plane crash. I know Jack well, and in my view, had he not died in a plane crash, he absolutely would have been president of the United States. No kidding, this is an outstanding person. But, as I say, he got killed in a plane crash. Well, I don't want to go on and on—

O: No, this is great. You were going to mention another person that you—

F: Oh, yeah, yeah. Herb, The last name...Kohler. Kohler. I remember, because the Kohler that make the things in Wisconsin.

O: Yeah, yeah.

F: Yeah, that Herb Kohler, and he was another counselee. He did well, I guess, but I saw him on television a couple years ago, he's C.E.O. of Kohler Enterprises now. While he was there, he had a little bit of scholastic trouble, not because he wasn't smart enough, but because he liked to party a lot. I remember his dad came down to visit me, and we sat next to each other and he talked about Herb. He straightened out, apparently, and everything was fine. So, I had two well-known people as my counselees. So, I got to know the old campus well. As a matter of fact, I went to my fiftieth medical school reunion just last year, and it was nice to get back and see these things. But, anyhow, I liked Yale. I liked the system, and as I say, if I had it to do over, I probably would have gone there for my undergrad, so.

O: It sounds like you found the campus then to be a real vibrant place.

F: Yeah. It's a high-class place, no question about it. Yale is a very high-class university, and I enjoyed it greatly. I especially liked the Yale System in that they're not going to force you to do it, you're supposed to know how to study, you're supposed to be interested enough to control yourself and study when you're supposed to study. People that did that, did well. So, I enjoyed that. I also enjoyed the job as a freshman counselor on the old campus so it was an overall wonderful experience at Yale, really.

O: Were you thinking during those years, Dr. Fackler, were you already imagining or even considering a military career? Or was that something that came to you later?

F: Let me tell you where the military career started. You've heard of the Doctor's Draft [The Doctor Draft was an aspect of the Selective Service Act of 1948 designed to bring more health professionals into the military]. They had the Doctor's Draft.

O: [Laughter]

F: When I was in medical school, they had the Doctor's Draft. We had a professor, Dr. German, who was a well-known neurosurgeon, head of the Neurosurgery Department. Dr. German recruited me to come into the Navy Reserves. He was on active duty in the second World War, but kept active as a reservist. So, what the selling point for coming into the Navy Reserves was, it was called an Ensign 1950 Program. Your only obligation was, as soon as your internship was over, that you went on Active duty for two years in the Navy. See, you're going to have to go on Active duty two years somewhere, anyhow. The problem with this is, for a physician, it was a very untenable situation to have the Doctor's Draft over you. That draft—a residency program is arranged, most of them, for four years, and it's arranged so they take the same people

and stay through the four years. They don't want to accept somebody who's going to be yanked out after two years for the Doctors' Draft. So, unless you had that obligation out of the way, you really couldn't get a good residency. So, it was almost mandatory to do something about it, so I handled it with that purpose—I had not considered a long career in the military at that time, but I liked what I saw. We had the opportunity—like I say, we had no obligation. We didn't have to go to monthly meetings or anything like that, but we had an opportunity. We could go on the summer vacation, spend two months in a military hospital with a clerkship, if we wanted. And I did that, I think I did that for two—I think I did it at least for one year, I may have done it two years. That was good because I got to see what the Navy was like, and actually work in a hospital. It worked out, a nice program. So...I, therefore, was in the Ensign 1950 Program, and my internship I took at the University of Oregon in Portland. One of the reasons was it was a good internship, and I hadn't yet decided on the specialty I wanted to go into, and I wanted to take a rotating internship. On the East Coast, it was difficult to get a rotating internship. They wanted you to have a straight surgery or straight medicine and then go into that specialty. I said, well, I'm not really sure. So, a rotating internship, you have surgery, surgery, medicine, OB-GYN, and you have the specialties—you have all of them. So, it was good, and I decided during the program that I probably wanted to go into surgery. That's why I went to the University of Oregon. But then, right after finishing my internship, I got a duty assignment, and my assignment was I was on a ship. It was called MSTS ship, Military Sea Transport Service ship, and these were ships that were run by the Navy to take people back and forth to overseas bases and things like that. So, home port was in San Francisco, and we spent a lot of time at sea. We would go to

Hawaii and Guam and Japan and the Philippines and Korea and Midway and just about every place in the Pacific. But we spent a lot of time at sea. I mean, we'd be out, say, twenty-five days on a round trip, stopping a whole bunch of places, you know, Japan, and coming back. We'd be back and three days later, we'd be out again. [Laughter] So, we didn't spend much time in San Francisco, we spent most of the time at sea. But it was fun, it was an enjoyable life. At that time, I had applied to the Navy—I decided I wanted to go into surgery, so I applied for a general surgery residency in the Navy. I was turned down, and they said, well, we can't accept you this year, but, if you will become a flight surgeon—that means going to Pensacola and spending six months learning to be a flight surgeon, and then have one tour of duty as a flight surgeon, three years you're a flight surgeon, then, we will give you a residency after that. They were using this as a way of getting flight surgeons; I guess they were short of flight surgeons.

O: Okay. [Laughter]

F: I had not really replied to them yet, but a stroke of luck came along. There are a couple things in my life, that if these lucky things wouldn't have happened, other things wouldn't have happened and wouldn't have turned out the way they did. One of these lucky things for me was a person having a heart attack on our ship. He was a passenger on our ship. We were one day from Honolulu, going into Honolulu. This fellow's name was Admiral Ellis Zacharias, who, during World War II, was the head of the code-breaking thing [Ellis Zacharias (January 1, 1890 – June 27, 1961) was a Rear Admiral]. There was a television program about him.

O: Yeah.

F: He had an acute heart attack, and he had a thing's called pulmonary edema. What this is, is when the heart can't pump enough, fluid begins to accumulate in the lungs. And this is a serious, complex problem, but with pretty well-defined ways of treating it. Of course, I knew about these, because I was a physician, you know?

O: Right. [Laughter]

F: This is one of the things that they taught you about. I determined that's what he had, and gave him the appropriate digitalis to get his heart going again. Also, I think rotating tourniquets—you put tourniquets on all four extremities to sort of trap some of the fluid there so it doesn't come back to the lung too much. Then, you release one at a time, and this sort of helps the things, then. So, in doing this, and you release one tourniquet, and then you have to time it—it's a bit complex, and it requires your presence, you know. So, I spent the night with the Admiral, doing this. We chatted a lot, and in the chat, he said, well, how do you like the Navy? I said, well, I think I like the Navy pretty much, you know. Want to become a surgeon, and I probably, eventually will, but they said I couldn't have the residency right now. I said that I wanted to become a general surgeon first, and then I thought I'd like to go into plastic surgery, have an additional residency in plastic surgery. This is just one of the things that passed between us in the night. We chatted about this. Of course, as soon as we found out how ill he was, we got on the radio and had Honolulu waiting on the dock for somebody to pick up the Admiral. So, we pulled in. He was doing better. I accompanied him up to the hospital, and introduced him to the people and told him what I'd done and gave them all the documentation. So, we were on the way out. We were going to—I don't know where, Japan and various places. We were coming back, we were also stopping at Honolulu on

the way back. On the way back, I got a call from the captain of the ship, saying, Dr. Fackler, they want to see you. We're stopping; I think we're going to have an overnight—at least a couple hours. We were stopping. Admiral Zacharias would like you to come up to the hospital to see him when we stop. I said, okay. So, I did. He was fine, he was fixed. His heart was working just fine and he was appreciative and everything. Two weeks later, I got a letter from the Navy saying, residency application reconsidered. [Laughter]

O: All right, that's great.

F: Really. He had some very good acquaintances high up, as you might imagine. Then, they were followed by a set of orders unlike any orders anybody had ever seen. Because when you apply for a residency, four years of general surgery, fine. That went. Then, near the end of your four years of residency in general surgery, if you want to take an additional residency in plastic surgery, then you have to apply for the second residency. My set of orders say that, four years of general surgery to be followed by two years of plastic surgery, boom. Nobody had ever seen a set of orders like that, but I had set of orders like that. It was just pure luck and the goodwill of Admiral Zacharias.

O: Wow, that's incredible.

F: So, when I started my residency then, had four years—it's called Chelsea Naval Hospital at the time, the name changed to Boston Naval Hospital shortly after I left. But it was in Boston. There are few cities that are as good as Boston if you want to learn medicine. I mean, you have Harvard Medical School and you have Tufts Medical School and you have Boston University. It was really good. Our residency program had most of

the consultants were physicians that anybody in medicine would recognize the name. These were Dwight Harkens, for instance, and people who've done the first this and the first that [Dwight Harken (1910-1993) was a well-known heart surgeon who introduced the concept of the intensive care unit, which has become standard in modern hospitals]. They were all in our consultant staff. We got to go to all the general grand rounds at Harvard Medical School, so it was almost like a branch of the Harvard training program because we had so many close ties. So, it was, it turned out to be an excellent residency. Then, when I was finished there, the two years of training program in plastic surgery—one year was required to be outside of the military. I don't know why, but that's the way the plastic surgery was. So, one year was at Bethesda Naval Hospital—Bethesda, which is a very good training— and then, the other year, was with a plastic surgeon who is a professor at Georgetown University, Al Fleury, so those were the two years. Then, during the plastic surgery residency, it came to me that, yeah, I like plastic surgery, but I only like parts of plastic surgery. I'm not crazy about cosmetic plastic surgery, you know? A lot of people come in and want to be made pretty, and that's not what I think I want to do. But, if the person has a part of his anatomy missing and has to be rebuilt, I like that. Reconstructive, but I don't like. So, therefore, I don't think I want to do just plastic surgery.

O: Because I was going to ask you what motivated you to be interested in plastic surgery in the first place—

F: That's a good question. I can't really pin that down. I think I liked the reconstructive part of it, because that's a challenging part of it. But, anyhow, during the program, I decided I really didn't want to spend my life doing those jobs or something like this, you know?

[Laughter] Not the kind of surgery I like. So, I went over to the bureau, the Navy bureau, when I was in my secondary residency, and I said, look—the other thing was, the plastic surgery program was a new program at Bethesda Naval Hospital. Now, the guy that ran it was a fine fellow and everything, but he was up against people, like, everything a plastic surgeon does, somebody else does, too. There's nothing that just plastic surgeons do. The ENT people do a lot, and so there's a great competition for patients. The ENT people were getting all the patients, and to come in as a new plastic surgery service, it was difficult to get the number of patients needed. So, I don't enjoy this in-fighting. I want that patient, no, you can't have it. I don't want that. That's a pain in the tail. It doesn't interest me. Plastic surgery, you're sort of stuck with that. In hand surgery, for instance. Orthopedic surgeons do hand surgery. General surgeons do hand surgery. Hand surgeons do hand surgery.

O: Oh, I see. Okay.

F: Everything you do in plastic surgery, other people are fighting you for the patient. That's not what I went into medicine for. So, I went over the Bureau of Medicine Surgery, I said, look, I really like general surgery. I think I'm never going to be a board-certified plastic surgeon and have to get in this fight with all the plastic surgeons. What I will do is, I want to be a general surgeon and I will have plastic surgery background so if a reconstructive case comes along, I can do that. But I'm not stuck with all the other things, and then I can integrate all the other cases with the ENT people and not have to fight people for cases. They said, fine, fine with us. One of the problems was that, at Bethesda, I was his residency. His resident. Now, I was also a fully-trained general surgeon one year out of my surgery residency. I certainly would have liked to do some

general surgery cases. But since I was there as a plastic surgery resident, my boss didn't think that was a wonderful idea, so he did not allow me to stay on the duty at night and take emergency calls in the general surgery. I had two years where I had not been in a belly or a chest and I like belly and chest surgery. [Laughter] So, I went up to the Bureau, and I said, where can I get current again in belly and chest surgery? I haven't been in a belly or chest in two years. They said, how's Da Nang sound? I said, sounds wonderful. How busy is it? We're really busy. Wonderful. Again, this is another lucky thing that happened to happen. It happened that I was there in 1968, December 10, 1967 to December 11, 1968. Well, 1968, where the Tet Offensive came, it was by far the most busy—it was wonderful [The Tet Offensive was a military campaign launched by the North Vietnamese and Viet Cong forces in January 1968, inflicting heavy casualties on American and allied forces through surprise attacks]. I got current real fast, and I actually got to do some plastic surgery because, even though it was the most busy year of the war, we still had some time. I was sitting, reading x-rays one day, and this fellow walks in. Funny-looking uniform, and he was from the Helgoland, which was a German hospital ship in Da Nang Harbor sponsored by the German Red Cross. Hans MÜchler—as a matter of fact, I e-mailed him about two weeks ago. Hans was the anesthesiologist on board. He had this x-ray and he wanted to know if I could take a look at it with him. I did and everything, and we chatted a little bit. When he found out that I'd trained in plastic surgery, he said, look, we have a general surgeon aboard, but the Helgoland is here to take care of the Vietnamese that get wounded as part of the war. There's a lot of reconstructive surgery, he doesn't know how to do it. Could you come over and help him do that? I said, yeah. And so I did. I spent a lot of time on the

Helgoland. As far as one of the things that plastic surgeons do, and it's a pleasing operation, we like to do it—cleft lip and palate work. Vietnam, there must be something in the genes in Vietnam that there are more cleft lips and palates than I've ever seen anywhere. I mean, I must have done twenty in that year. It was amazing. Far more than I'd done in my residency. So, that was good. Then, back to the language thing a little bit—Hans spoke fluent English. He'd taken his residency training in Seattle, and he knew, he was quite good in English. But he, like all of us, had a one-year tour out there. After about six months, his tour was up and he was going back and he went back. And guess what? Nobody else on the Helgoland spoke English. [Laughter] Well, I had learned a little bit of German. Then I got some tapes from the military—if you're interested in learning a foreign language, they'll support you and give you tapes—I spent time and I bunked with a, everybody had a tape recorder there and I listened to German. My interest in a language, it was not going to be French, obviously, because I didn't go to medical school in McGill, but maybe I can learn German. So, I did. I worked on that. Then, when—I'll come back to this. The other thing that was good about the program was that, when we had a patient who was very, very ill, and too sick to be transported without a physician, then we would send a physician with him. We sent most of our patients to Yokosuka Naval Hospital in Japan, from Da Nang up to Yokosuka Naval Hospital. So, I got to go up there a couple of times. That was good because my wife happened to be a nurse in the intensive care unit at Yokosuka at the time, so that was a nice little fringe benefit. Then, I got a set of orders to, after I finished in Da Nang, my duty was in Yokosuka. This was especially good for my training as a trauma surgeon, because the problem was—when the patient has some severe

complications, we were so busy with new patients coming in, we couldn't fill our hospital with all these patients that were going to stay there for a long time. We just have to send them to some place. Well, what this does is deprived us of the follow-up of what we did initially.

O: Oh, okay. I see.

F: Then I had three years in Yokosuka, and for those three years, I got to see all the follow-ups that I had missed before. It completed my training, basically, as a trauma surgeon. That worked out very well.

O: It must have been so stressful to be in Da Nang during that period of time. Just—

F: Well, not really. You don't have the time to think about it too much. I mean, there were interesting things going on. We had these Quonset huts, because they have a little platform up in the top with some chairs and a little roof and watch the planes come in and the napalm things now and then and it was during the Tet Offensive. It was a little scary at times. We didn't actually have any of the VC threatening us, but it was close [VC is an abbreviation for the Viet Cong]. We had one time that was an interesting thing, and that was when there were incoming artillery or something of the sort, they'd ring a bell and that means you'd get in the bunker. They had bunkers all over the place with sandbags and everything and you got in there so you'd be safe. We were a prisoner of war hospital. In addition to being a regular hospital we were a prisoner of war hospital. That was interesting. I was in the operating room, had a Viet Cong prisoner who had had a femoral artery injured and I was fixing his femoral artery. What you have to do is take out the injured part and put the ends together and sew them together. So, I had

each end in the appropriate clamp, ready to do this, and the bell goes off. Said, incoming, get in the bunkers. Well, what am I going to do now? I said to the anesthesiologist and everything, go ahead. You guys go, and I'll just stay here. Nobody left. We just continued, we fixed him, and it worked out. But, it was an interesting concept. [Laughter] Here's the enemy, I'm operating on the enemy and risking my whole team and myself to operate on this individual. But, you know, nothing happened and it worked out all right. Actually, we did have artillery destroy our urology suite; brand new urology suite, had all sorts of fancy x-ray equipment and everything. About one week after it was there, a hundred and fifty-five millimeter artillery landed right in the middle of it and destroyed it. Gone, you know. But, then anyhow, we didn't lose any physicians. Nobody was killed in that, so we were lucky in that year. So, that worked out fine. Interestingly, back to Germany, when Hans went back to Hamburg, he and I stayed in contact. I was at Yokosuka, and I got to thinking of, you know, this German would be nice, I'd really like to stick to it and learn a little bit of German here. So, I came up with the idea that I would propose, if Hans said that we could do it, I said, in the hospital he was at Eppendorf University in Hamburg, Dr. Shucart, a world-famous plastic surgeon was there [Eppendorf University refers to the University Medical Center Hamburg-Eppendorf, the teaching hospital of the University of Hamburg established in 1889]. At least, he used to be there. So, I wrote to Hans and I said, do you think you could see if Dr. Shucart would mind if I came in for maybe a two- or three-month fellowship, if I could get the Navy to send me back and give me the three months? You know, go back the long way instead of the short way home? I got an immediate reply. He said, Dr. Shucart is no longer here, but Dr. Pfeiffer, his successor, would love to have you come.

O: [Laughter]

F: So, I went to the Navy and said, how about it? They said, okay. So, they sent us back to, and I learned a little bit more German, spending three months in Hamburg. Learned at that point I wanted to keep at it as an avocation, which I did. So, let me see. Then I got back to the United States, was stationed at a naval hospital...let me get this right. In Memphis, Tennessee. Back up a little bit, while I was in Yokosuka, Japan, they had the last two years there. During the war, there was a problem in that you had people in Da Nang or Vietnam, you had people in Yokosuka, or the Philippines they had another hospital where they'd send you to recover, and then back to the states. So, nobody sees the complete picture. What they had is for the last five years of the conflict, they had a tri-service war surgery conference where people from all three branches came and, for several days, exchanged information with one another. And each of these wrote a –you divided it up into people who were going to do the chapters and they wrote a small book. Each of the years, the book from the previous year was revised. Being that I was in Yokosuka, I was a delegate to the last two of those. I still have the books, and that was some really good information in that, and I was able to pick up on it. Okay, so, let me say, the tri-service conferences showed me and most of the people that what it was, was the Navy and the Air Force went to the conferences and the Army told them what they learned about the war. Because the Army were the only people that really documented things well, and the Navy and Air Force really didn't very well, but at the tri-service conferences we were supposed to share all that. So, I was impressed with the people I had met in the Army and what they were doing. So, in the back of my mind, this is, how am I going to learn some German and any ways to get to Germany? So, when I

was in the naval hospital in Memphis, the idea came up to me, the Army –Navy didn't have any hospitals in Germany. The Army did. Army had a bunch of good hospitals in Germany, and so I called up on one the people I had met from the Army at these tri-service conferences, Bob Buker's the name. I asked Bob, he gave me the number of the detailer in Washington for the Army. Told me to call him and tell him that he'd sent me. I called and told him my history, and that I was interested, that I would love to go to Germany and I would transfer to the Army if I could get to Germany. So, the first sentence out of his mouth is, I give you my hundred percent guarantee, if you transfer over to the Army, I will send you to our best hospital in Germany as a surgeon. So I did, and he did.

O: [Laughter]

F: So I had, from 1975 to 1980, I was at the Landstuhl, Germany Army Hospital, which is currently bigger now than it was [Landstuhl Regional Medical Center, founded in 1953, is a military hospital operated by the U.S. army in the Landstuhl municipality of Germany. It is the largest military hospital outside the continental United States]. The hospital, all the people are coming through from Iraq and every place they've been. So, it has grown. It was right across the street, the autobahn journey, maybe two miles away from Ramstein Air Base, which is, of course, ideal. They bring the people in and load them over to the hospital, and just a perfect set-up. So, I spent those five years in Landstuhl. Now, I was in a hospital, and I wouldn't have had to speak a word of German to get along quite well in the hospital, but my purpose there was to learn German.

O: Yeah. [Laughter]

F: Fortunately, the last three years, I was the chief of the Department of Surgery. I had a secretary who, of course, knew more German. She helped me a great deal with the German. The other thing, Landstuhl is a delightful place. Spent all my social life with Germans rather than Americans, because who's going to learn German from the Americans?

O: Right.

F: Germans had a tennis club there, and I played on the tennis team there and my wife was the number one player on their team. It was a very excellent experience overall. During the time that I was in Germany, I was sent down to Geneva for a three-week meeting. It was an international conference on non-nuclear weapons; I mean weapons like rifles and things like that. Since I already knew something about rifles, and I was in Germany, they sent me there, for three weeks there. That was really good, because at that point, I met the—well, there were certain groups that were big in ballistics at the time. The Swedes were one. The Swedes were real big in ballistics. Their whole purpose was to show how terrible the war was, and really an anti-war thing and they were using their wound ballistics program to show that our bullets were inhumane bullets. That was the purpose of the Swedes', basically. But, they had some really good scientists that were doing their programs. During those several weeks in Geneva, I was able to meet the Swedes and every country that had a wound ballistics lab, I knew them. Now, the Brits turned out to be the most helpful. A fellow named Bob Scott and I became close friends. Bob was a physician, a British physician who was interested in wound ballistics. Bob later became General and, unfortunately, was killed in a boating accident shortly after his retirement. But, I had gone on, and later on stayed with Bob

and his wife when I had delivered some programs over there and given some talks on wound ballistics. I'm getting ahead in the wound ballistics. Anyhow, I came back from Germany and went to Colorado Springs, a small hospital in Colorado Springs. Enjoyed that. At that time, I was coming out—I had pretty close to twenty years and decided, well, okay, I've had twenty years in the military, I can get retirement at twenty and I think I'll get out of the military. I guess word got back to Washington that I was about to retire, and I got a call saying, hey, we have a proposal for you. Instead of getting out of the military, what would you think about going to San Francisco and setting up a wound ballistics laboratory? I said, okay. [Laughter] So, they sent me up to San Francisco to look at it first, and I had already made up my mind then. We didn't have one in the United States; we didn't have a wound ballistics lab that was run by physicians. As a matter of fact, the unique thing about the laboratory at Lair, which I had decided I'd go to, and that started in 1981 to 1991, those were ten years. It was the most ideal situation possible for a person in that job. It was run by medical research and development command. I think that General Rapmund, R-a-p-m-u-n-d was the commanding officer. He sort of liked wound ballistics for some reason, and so he was really strong. Anything I wanted, I got. I mean... [Laughter] It was good. I didn't take advantage of it, I worked hard, but it was, for instance, my colleagues here in the university who are professors, they have to earn money. They have to get research grants. I didn't have to do that, because we were the people that gave out the money. Research and development command. On occasion, I'd have to sit and decide if somebody else got any money, but I never had to—I mean, all I'd do is, they'd, tell us what you want to do, and we'll write the check. So, we set up some things, and one

thing that I had to—you have to set up the lab in San Francisco. The first three months I spent reading what has been done, what needs to be done. It became obvious that a fairly a lot needed to be done. So, I started, then, tried to get some help from—wound ballistics is a bit of a peculiar field in that the laboratory, in my ten years running the wound ballistics laboratory in San Francisco, I think, is the only wound ballistics laboratory that has ever been run by a physician. Now, a couple physicians have worked in labs. They were all run by ordnance engineers, these are people that make the bullets, you know. These people that make the bullets, they have a pretty one-sided view of what's going on. They don't really understand the body very much, and what the bullet does to the body is the crux of the thing. They're not physicians, how the hell can they understand it? The answer is, they can't, but they'll never admit that.

O: Okay. [Laughter]

F: So, we had some disagreements, and what needed to be done is, I had to have a method of determining the effects of a bullet going into living tissue and measuring the size of the cavity. When a bullet hits living tissue, it makes a hole as big as the bullet, but it also makes a splash. This splash, this so-called temporary cavity, the hole that it makes temporarily gets that big and comes down again. I had to know, how big's it get with given bullets, you know. There's no way you can find it except shooting a living animal, and we didn't have any place in the United States to do it. So, I called Bob Scott in England, yeah, they could do it. They'd be happy to come in and do it. So, I just went to the people, I said, hey, I got to go England to do this for 'em. No problem, it was all up to me. Everything was at my discretion. So, I went over and we shot the three or four pigs with a small sphere. It was a common thing used for wound ballistics because it

doesn't change its shape at all. Then, they take high-speed flash x-rays, you see. Flash x-rays are what was needed, and you only have one case in the United States that could do it and these people, it was run by no physicians in the group, just engineers, and they weren't about to help me out. So, in England, we did. What we did is we got the size of the cavity made by this sphere, and then I took a handful of spheres and went back to my laboratory. Worked on a tissue simulant. In order to study what happens to the body, you need to have something that you can shoot that the bullet will penetrate just as deeply as it does in the soft tissue of the body. Nobody had ever developed that, and that's what needed to be done. We developed ordnance gelatin, which had been used in the past but had never been calibrated in the past. It had been used at various temperatures and at various percentages, and it had never been standardized. Some people use twenty percent, other people use ten percent, some people do it at room temperature, some people do it—temperature, and the concentration determine how deeply it's going to penetrate. So, nobody had any standardization at all. So, what we did is we standardized ordnance gelatin. We said, in the first place, since the temperature and concentration, I'm going to standardize one of them. Since I'm going to do it. What I'm going to standardize, and arbitrarily, I'm gonna say, we're going to do this at four degrees centigrade, which is about thirty-nine Fahrenheit. The reason I did that is because that's what most peoples' home refrigerators sit at. So, this means that anybody can do wound ballistics studies, see. National Institute of Justice had a program where they were using fifty degrees Fahrenheit, at ten degrees Centigrade. If you want to get a refrigerator, you can set it at

fifty, yeah, you can get one if you want to spend a couple thousand dollars in your laboratory.

O: Right. [Laughter]

F: But what I want to do is, I want to make a simple one to make it easy. So, we arbitrarily set the temperature, and then, by shooting, we were told what concentration. Twenty wasn't right, and we kept going down. Finally, ten degrees –ten percent gelatin at four degrees Centigrade, or thirty-nine Fahrenheit, and now that is the standard. Once we had a standard, then what we needed to do was use the standard to somehow show what bullets do. The easiest way to explain this to you is to show you a couple of them because they're easy. Here, it's called Wound Profiles. Here, I have an article which has every one of the wound profiles starting from the least penetrating to the deepest penetration. The deepest penetration is interesting in that you'll recognize the caliber, maybe...see how deeper that penetrates?

O: Wow.

F: Wow. That's a 6.5 Mannlicher-Carcano. You know who was shot with that? John Fitzgerald Kennedy.

O: Oh, I saw something about...yeah, okay.

F: Yeah, JFK was shot with that. So that's a well-known...and that's very typical of the first generation of the full metal jacketed bullets and that goes the deepest of them. That's the AK-47, which is the Russian round that most people in Vietnam were shot for [The AK-47 is a standard-issue Russian-made assault rifle developed by Russian Mikhail

Kalashnikov during World War II]. So, you see, you have a centimeter scale down here at the bottom, and you have how big the cavity is, and not only that you have where of all it comes.

O: So the temporary cavity is near the entrance of the wound.

F: Well, it can be. But look at the temporary cavity. It depends on—here, look at that.

Temporary will be way out here. That could have gone through two people before it got there. Well, now, just think. Think of the Kennedy assassination. Did a bullet go through two people? You're damn right it did. One of them went through Connelly and Kennedy's torso. If this had been available at the time, there probably wouldn't have been much discussion about the possibility of conspiracy, because this is exactly what you'd expect. The reason this bullet, a long, slender bullet, is going straight on, and you see the cavity's not big because it's streamlined. Gone straight on. But then it goes sideways, it's like a diver going sideways makes a big splash and a diver going straight down doesn't. It's no more difficult than that. Here on the AK is the same thing. This one has two cavities. It goes up, it doesn't quite get around, it flips and goes a double cavity. Don't know why it does, but it does. So, with these things, you can show a surgeon what is likely—that's a 7.6 NATO round. You see here is a full-metal jacket bullet again. When it goes sideways, it makes a big splash. Well, the splash I was able to measure, because when I came back from England with the spheres, I shot them at the cavity and found out that if I measured the cracks made by the cavity, they were very close to what it was. So, that gave us a way of measuring this and the penetration depth, we had measured that by being able to calibrate the gelatin. So, that's what these are. This is

the last article here, this is all, twenty-six are all we did at the laboratory. I have them all in here.

O: Yeah. I've seen your research referenced in studies about the Kennedy assassination. That was interesting.

F: Yeah. Well, the Kennedy assassination was unfortunate, but the shot that went through Kennedy's neck—of course, it made a small exit in the neck here and then Connelly sort of going a little bit sideways, but still went the whole way through Connelly, and then went through Connelly's wrist, and then into his leg. I mean, that's a long bit of penetration. It shows exactly what's happened. Now, the second shot in Kennedy behaved very differently. If you've seen—what is it? Frame three-thirteen of the Zapruder film, where some of his brain is way up here, I mean, it's spraying out of his head [The Zapruder film is a video recording of the John F. Kennedy assassination captured on a home-movie camera by American citizen Abraham Zapruder]. That's the same bullet, but very different thing here. Instead of just going through soft tissue here, this went through head. I mean, the skull. They had these thick—what that did, is it flattened out the bullet. So you've got all of this cavitation right here inside the head. Of course, lots of, half his brain left the cranial ball because of that. So, you know, it explains these things really well. As far as one of the problems in the teaching of wound ballistics is, there's so many people that get the impression that, gee, high-velocity bullets cause terrible damage. Damage much beyond—people like to shoot into, take a water jug, a gallon jug of water and shoot with a hand-gun and it'll explode, and oh, isn't that neat? But it shows you how terrible things are. Or a watermelon.

O: Watermelon, yeah.

F: Watermelon's very favorite. AK-47 through a watermelon will explode the watermelon.

Okay. I say, well, how useful is this? What it does is, it gives the surgeon the impression that there's much damage than he can see just below the hole, but he knows that was a high-velocity bullet. He knows that all that damage was done and that tissue's going to die, so he has to cut it out. See, that's the damage. I, very frequently, when I've given a talk—and I've given lots and lots of talks to law enforcement. I've given them and I said, if you guys ever get shot, when you go into the hospital and they ask you what you were shot with, you don't know. Even if you know what it was, never use the words assault rifle, high velocity, or anything like that. It'll make the surgeon think that, oh, my gosh, even though the damage just looks a bit low, I've got to take out all this extra—because, he'll do more damage than the bullet did.

O: So, even with the research, there's still a lot of misconceptions about—

F: Well, not everybody has read this paper. That's the problem. I'm in the process of trying to put this in book form at the present, to try and correct this. There's a lot of things that really need to be corrected. For instance, just look at this. This is the 762 NATO, our common thirty-caliber military round. Look at the first fifteen, even if you take say, six, seven inches. How big's the temporary cavity? Little. Just a little. You know, hardly much bigger than the bullet. Well, this is the damage that was done. This is the disruption. Now, do you think—that's what happens in a body? There's no damage.

O: Yeah, that's incredible. I was in the four years, two years in Special Forces in Central America, and fired a lot of weapons, but I never—when I was looking at research, I mean, to me, this is amazing. I never would have...yeah.

F: Yeah. You see, after it yaws, but that's about that far in.

O: But that's, see, after it's going—

F: Well, a little bit before. So, my advice to the surgeon is, hey. If I ever get shot, I want to be operated on by a surgeon who is a good surgeon, knows what he's doing, is a good trauma surgeon, but has never read a word about wound ballistics.

O: [Laughter] Uh huh.

F: I'm serious. Because so much of the stuff that's written is nonsense. Of course, in ten years, I've written a bunch of papers on it, but it's just made a dent. There's still a lot of...

O: So the common assumption, even among surgeons, is that when the round enters, in their mind, it's causing more damage than it really is.

F: What they've been taught is that even though the tissue looks like it's not chopped up bad, it's going to die because it's been stretched, and it's not true. Now, I tell the surgeon, what you do, you operate and if the tissue has been torn up, you can tell it's been torn up because it's torn up, you know. You can take that out, but don't go cutting beyond and take out a rim. Like an article by one of the Swedes, he's saying that, oh, this temporary cavity. People that view the temporary cavity and write about it, they'll say, oh, well, this temporary cavity kills the tissue. It's dead, you see, and what they're

saying is, oh, you can superimpose that on something, and if the hole's this big, that much tissue's going to die. That's not true. All this is, is it temporarily went out there and then came back. You know, it was moved a little bit. That doesn't kill it. It's the same thing as a watermelon. Yeah, a watermelon is not very flexible. So a watermelon gets destroyed by it. But if people were the same as watermelons, football games would last about less than a quarter because everybody would be dead, you know.

O: So you're asking people, you're asking surgeons to operate on what they see, not on what they imagine.

F: Yes. Yes, that's right. Not what they've been told. Another thing is, after I got out of the military, I spent twenty years doing a lot of forensic work, traveling all over the place because there's a lot of people that get shot. Los Angeles, especially. Had my practice in Los Angeles. There's lots of shootings and there's lots of lawyers, so there's everybody going to court. So, this has been very useful to explain to people what happens and why it happens. It works out very well. Right now, I'm working on a thing called—there's a problem with body armor also, police body armor, in that certain groups, National Institute of Justice, for instance, has a test where they test the body armor and what they test is the indentation [The National Institute of Justice is the research, development and evaluation agency of the United States Justice department]. When a bullet hits it, it's like—body armor is sort of like a safety net, you know, a trapeze artist falls and he goes through the safety net, and it goes down, and he's okay. Well, body armor does the same thing. It keeps the bullet and it goes back in and it comes back out. What these people are saying, it's the same principle. Oh, if it's been stressed, it's just going to die. It's nonsense. It's just absolutely nonsense. But it's

amazing how many people believe that. But the body armor test is based on that. They have to make it so that if this, how far it gets pushed in is more than an inch and seven-tenths, we can't pass the test because that's too dangerous. It's going to kill somebody. It's nonsense. I'm still working on that. But it's the same thing, and that's the—well, anyhow.

O: Okay. I wonder, Dr. Fackler, if you wouldn't mind maybe kind of a step back to think about your early career as a surgeon in the military. What are some of the unique aspects of becoming a surgeon and a physician in the military versus civilian? I mean, obviously, the battlefield is one. What are some other particularities of the job?

F: I'll tell you one thing that I think should be mentioned, and I think is very important. That is that I never had to consider the expense of any operation. That didn't come into play. Didn't cost anything. That, you know, is not the same, you have to really in civilian practice. Well, it's going to cost so much to do this, maybe you should do something—no. I never considered the expense because it didn't enter into it. The military, you got what was needed, and as I say, I was supported in my whole career in the military, I was supported magnificently. I got everything I needed and, as I say, my colleagues there spend thirty percent of their time begging people for money. So, I was able to operate thirty percent more effectiveness than they can, you know. So, the good thing about the military is that you don't have to—well, you don't have to worry about figuring out how much it's going to cost them. It's billing and things, that takes some time, too. In the military, it doesn't, because you don't bill people. But, mainly, is the expense. You see, I wondered many times how, if I were not in the military—say you're not in the military and you're a young surgeon, you get paid for operating. You don't operate or

get paid. I'm young and I'm trying to raise a family and a person comes in with a hiatus hernia. A hiatus hernia is where the esophagus goes through the diaphragm into the stomach, and if a little bit of the stomach herniates upward, you know. You can operate for that, but ninety percent of the people do just as well if you put their bed up a little bit at an angle and give them some medications and you don't—but, nobody could argue with you operating on a person, you see. Now, would I have operated too much? I mean, I would say no, but a lot of the people will say that. If you look at cases in which the mode for payment has changed, same patient population, it goes from a fee for operation to a salaried situation. During the salaried situation, far fewer operations get done. It's been shown.

O: That's interesting. I never even thought of that.

F: Yeah. So, in the military, you don't have to worry about that. You can concentrate on the disease process that needs to be fixed and how you're going to fix it and that's it. You don't have to worry about, can this patient afford it or any other thing. To me, that's a purely intellectual pursuit, not screwed up by financial considerations. I think a career in the military, to me, that is an important part of it. I enjoyed that.

O: What would be today some advice that you, and I'm sure you probably do this quite a bit, but what kind of advice do you give to a younger person or someone considering a career as a physician or a surgeon in terms of finding their way? What do you tell them?

F: If I was going to do it again, and I've talked to other people that do it the same way, I wouldn't do it in the standard way. I would enlist in the military right out of high school and then work my way up in the military until I got a good reputation, and then have the

military send me to college, and then done well and had the military send me to medical school. All the time I'm in college and medical school, from the military, that's time of service, you see. In mine, it wasn't time of service, because I wasn't in that. We didn't get –well, we did. As a matter of fact, we finally did get credit. Of course, everybody else did, too. But I was in the military for so long that, since I stayed in the military, I didn't have to worry about. But a lot of people, you know, want to get out as soon as they can to make a lot of money and things like that. But I would have—yeah. Because the chances are really good that if you go into the military and show that you're a competent person and willing to work, and fairly intelligent, you can get your college and your professional degree paid by the military. So, you have a career in the military. Hell, I stayed in the military anyhow for a career, and I'm at this. So, I would think it's a strong selling point for the military.

O: All right. Well, Dr. Fackler, I suspect you have a lot of other things that you need to do today. I thought maybe we could move to wrapping up. Does that sound good? Are there topics that you'd like to talk about that we haven't broached?

F: No, no. Fine.

O: Okay.

F: I talked your head off on wound ballistics, but that's what I did.

O: It's fascinating. Yeah, I was looking at 'cause –and you had mentioned about the nine-millimeter and I was looking over your research and statements you had made, and when I was in, we had a lot of guys use nine-millimeters—I usually used a .45, and I was looking for the round in some of the different...

F: Well, let me tell you about, I'll go along with you, the .45. The size of the hole the bullet makes, the .45 is bigger than a nine-mill. But how much bigger, by diameter, it really doesn't give you the measure of how much tissue it disrupts. What does is the area of a circle. Area of a circle, it was πr^2 . It's the radius squared. So, if you take your .45, your point four-five-one and your nine-millimeter as your point three-five-five, take half, take the radius, square that, and what you'll find is that the volume, or the area, of damaged tissue made by the .45 is about sixty percent more than made by the nine. I don't think I've ever seen people; big arguments on nine-millimeter versus .45 are all over the place. And, of course, the important thing is what you hit with it, rather than the bullet.

O: Exactly, yeah.

F: But really, if you look at measuring the πr^2 , that squared makes all the difference. So, the .45 disrupts sixty percent more tissue.

O: Okay. Well, if I run into some old comrades, I'll let them know.

F: Yeah.

O: It's just, when I was in, this was in the early [19]80s, and the nine-millimeter was the rage. Like, everyone wanted to go out and purchase—and I think the Italians were making all sorts of different types of nine-millimeters. I just had my standard issue Colt .45, and people were like, aww, man, you don't—that's too heavy. And...

F: But what's by far the most important, now, if you're in the military, that's one thing. You have to use the full metal jacket bullet. But if you were going to carry it for civilian use,

where you have any bullet available that you want, you want the Winchester Ranger Talon bullet, which has these little sharp things that come up. As this bullet expands and becomes a mushroom at these little points, six points around the circle that are little sharp points, and as that little sharp point goes, it acts like a knife and it cuts tissue far more effective than a hollow point without it.

O: Okay, that's interesting. Hmm. Well, Dr. Fackler, I've taken a lot of your time. We've went now an hour and twenty minutes, that's a substantial interview.

F: That's an excellent question. The reason is, as I've alluded to, there's a lot of work that is very poorly done. This is because that, in this field, it's a field that cuts across the boundaries of inexact and non-exact science. You have to know a little bit about physics. The pi-r-squared thing and a lot of things there, you've got to know a little bit about physics. The ordnance engineers, that's their field, physics, you know. So, you've got to know something about that, but not all that much. It's not that difficult part of it. But the difficult part is the body, the anatomy and the physiology of the body. So you have to have expertise in that in addition, you see. If I have enough physics—I minored in physics, and I know the physics that goes along with ballistics quite well. Also, I know the body. Well, now, my ordnance engineer friends, very few of them know anything about the body. You really—as I say, our lab was the only lab that was set up and run by physicians. Medical research and development command, right from General Rappmund on down, they're all physicians. So, we know about the body. You see, one of the—you can see where these guys are coming from, and why I would be resented by them, and still am, is that...well, I don't know if you've ever heard or remember the Miami shootout in...when was it? [19]87. Remember the Miami shootout? The Miami

shootout showed the problem with the bullets developed by the ordnance engineers. You see, they knew this cavity, and they like to see things explode, so they said, the bigger the cavity, we will rate the bullet on how big the cavity is. That was how they rated the bullet, you know. Now, if you're designing a bullet, and you want to have the biggest temporary cavity, what you do is you want to have the lightest bullet you can get to and at the highest velocity because you have a bigger cavity. But what's the downside of that? The downside of having a light bullet is that you're going to cut down on your penetration. You see? The two officers were killed and five were wounded in the Miami shootout because the bullet that Agent Dove, who was later killed, his shot went through Platt's—Platt was one of the bad guys—went through his arm, right here, went on into his chest, going right for his heart and stopped at short of his heart. Didn't go deep enough. Reason it didn't go deep enough, because the bullet was ill-conceived. Now, after the shoot-out, the FBI called a conference and I was invited and asked to bring friends that knew the subject. We hashed it around. Now, the depth of penetration is standardized, nothing but twelve inches for the FBI or any of the military that followed the FBI's standards. They set up their testing, which is—they used our gelatin, just like we did. But, you see, this is like, for me, to come in the ordnance engineers and tell them they don't know how to design a bullet, is like they come coming to me and say, you don't know how to do an appendectomy. Well, the only difference between them and me is, I will say, well, show me why, and if they're right, I'll agree. But, they're very defensive about it. There's one ordnance lab where I got along really well with the people, and that's Crane Navy Weapon Test Center in Crane, Indiana. I got an e-mail about four years ago saying, dear Dr. Fackler, I'd like to congratulate you on finally

convincing the engineers at Aberdeen Proving Ground to stop using kinetic energy of the bullet as a measure of bullet effectiveness, dash, and it only took your twenty-five years.

O: Wow. [Laughter]

F: They were absolutely right. The kinetic energy, you say that, oh, kinetic energy, well, that's irrelevant. You know, you didn't hear me use the word until this point.

O: No.

F: What we're doing here is showing you the exact dimensions of what happens to tissue. The kinetic energy doesn't make a damn bit of difference. It's very, very misleading. But the reason they didn't understand the situation is that they thought how much kinetic energy was deposited was the answer, but they didn't realize that you can take a certain amount of kinetic energy—to stretch tissue like that, it takes a certain amount of energy to do that, all right? Now, the same amount of energy in the lung is going to stretch the lung apart and it's going to come back and not going to hurt it much. The liver? It's going to tear the hell out of it. Same energy.

O: Same energy.

F: Same size of cavity. But the tissue is not—it's the same as the watermelon and the person on a football field. I mean, it's elasticity of tissues and tissues vary. The first paper we wrote was on fragmentation of bullets, which ordnance engineers said it didn't make any difference and we showed them wrong. The second paper was measured the AK-74, which is a new rifle that the Russians had put out, but that had a cavity about

like this. We measured it and in four different spots: in the lung, in the muscle, in the liver—what do you have, lung, muscle, liver...oh, intestines, yeah—and the only place that really got torn up was the liver, because all these other things are stretchy. You can stretch them and they come back. It's just these little things that—and then, the guys from Crane, they went along with it. But the guys from Aberdeen got—oh.

O: Right. [Laughter]

F: And these are the guys that are still working on the body armor thing. Oh...the fight's not done.

O: Yeah, exactly. [Laughter]

F: You know. What the hell.

[End of Interview]

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