NASA HEADQUARTERS NACA ORAL HISTORY PROJECT
ORAL HISTORY TRANSCRIPT

GENE A. KENNER
INTERVIEWED BY REBECCA WRIGHT
SAN JOSE, CALIFORNIA – 2 OCTOBER 2005

WRIGHT: Today is October 2nd, 2005. This oral history session is being conducted with Gene Kenner of Cayucos, California, as part of the NACA [National Advisory Committee for Aeronautics] Oral History Project sponsored by the NASA [National Aeronautics and Space Administration] Headquarters History Office. The interview is being held in San Jose, California, during the NACA Reunion Eleven. The interviewer is Rebecca Wright, and we're joined today by Gene's wife, Patricia.

Thanks again for taking time to meet with me and talk about your experiences. I'd like to begin today by asking you how did you get involved? How did you become a part of NACA?

KENNER: All right. It probably starts back when I finally graduated from high school, and then being at kind of loose ends for the summer, I did go back to Kansas and worked on a wheat farm, and then, of course, when I left there, because farming was not exactly my forte, but I came back to Lancaster [California] in the Valley, and I thought I'd go back to junior college there, Antelope Valley Junior College, so I started taking some courses there. As I was going back to school, it seemed like all I was doing was going back to school. I thought, "Gee, there must be something more than just going to high school again." That's what the junior college was, it's a continuation of high school.

So a friend of mine, Earl Fisher [phonetic], his father worked for the Army Air Force at that time, because this is back in 1948. I don't know exactly what his position was with the

Army out there, whether he was an administrator or in personnel, but anyway, he was mentioning to me that this outfit called NACA was looking for some people to go to work for them out there and to do more an apprentice position. Actually, they were just looking for grunt help, and I think it was because they were having problems getting people to come out from Virginia. People from Virginia would come out, they'd work at [NACA] Muroc [Flight Test Unit, Edwards, California] for a few months and take one look at this place, and it's nothing like Virginia, so that's all they could think about is when they could go back.

So they did hire a couple of apprentices. One fellow, whose name is [Henry] "Kenny" Gaskins, and myself, so we started to work in a temporary position, but it was just an apprentice. And when I started to work there, I did all the dirty work, you might say, in setting up the grinders and whatever.

Then as time went on, well, then I was working with other instrument mechanics in other—they weren't technicians at the time. They were more or less mechanics. Because all the instrumentation was electrical, mechanical type of instrumentation, and so they didn't have any electronic people, per se, working there, except that a lot of the guys were ham operators or they were into electronics.

But you've got to remember that I was only eighteen years old. I came right out of high school. I had just some basic shop courses, and so I kind of think that they must have been desperate to hire somebody to work out there. But it was an eye-opener. Gerry [Gerald M.] Truszynski interviewed me when I went out there to get the job, and he showed me around, and then he took me to the X-1, and I looked at that. I was just kind of amazed. I was intimidated. "Wow! What's this all about?"

Then he took me over to a wire cage. It was in this—the NACA was working out of just a Quonset-type hangar. All I can remember is the X-1 sitting there, and I don't remember any other vehicles in that hangar at that time. But he did take me over to this little wire cage. It was in the corner of the hangar. And a fellow named Walter Harwell [phonetic]—he was the instrument repairman—he was working gyros, and he was working on galvanometers in the NACA recording instruments. He went and introduced me to old Walter, and we called him "Rebel."

The first thing that Rebel started in on Jerry was that, "I can't work in this place. I can't work in this wire cage doing this instrumentation work, repairing this equipment." He says, "There's nothing but sand here, and the wind is blowing." He says, "We've got to get out of here."

That stuck in my mind. At that time, on the side of the hangar, they were building some shops, and that's where the instrumentation shop was going to be, the calibration and the installation shop and a battery shop and one little room there had "Harwell." They'd moved Harwell in there and with some other—they would have been more machinists than they were electrical or engineering people. That's when they finally got it so that it was sealed up enough where he could do some decent instrumentation work.

So I worked there several months as an apprentice, and after about a year, I had gained enough education and expertise to actually work on the airplane, and I was assigned to the D-558 Phase One as the instrumentation man. Then that became my project. I took care of the instrumentation on aircraft. You'd think that—well, let's see—only after a year of working in a place as an apprentice that you'd been given an awful lot of responsibility. But I didn't think too much about that. I had learned enough about that airplane and the instrumentation in it that I

could handle that airplane without any problem. I used to do all the calibrations. I used to do all of the installing and, of course, doing all the flight film. You talked to John Hedgepeth. Remember you said you talked to John?

WRIGHT: Yes.

KENNER: Now, John was the photographer out there. He was a good guy. I like John. But he was a photographer, and he didn't like the idea that he had to do all the development of flight film, and this flight film was all these rolls of negative film, fifty-foot and seventy-five-foot lengths. It was hours of going into the darkroom and running this stuff through developer and through the hypo and the washing of the film. I think John thought, "This isn't what I was hired for. I was hired to be a photographer."

So then what he did is he went to [O. Norman] Hayes [Jr.] and he says, "These guys on the airplane should be doing all this developing." So we did. I mean, he went in there and he trained us to how to develop all this film, and that was all right, too, because I enjoyed doing the whole spectrum of the instrumentation.

Then working at that for about three years, working towards the permanent position and getting into a journeyman position, NACA was—Phil [Phillip E.] Walker over there in Personnel and even Walt [Walter C.] Williams, the director of the station there, they were trying to keep me out of the service. They were trying to get me deferments. Well, that didn't work after a while. One day Phil Walker came over to the shop, and he says, "Kenner, we can't keep you out any longer. You're being drafted. You're to report Monday."

"Monday?" This was on a Friday. So I says, "Wait a minute. You mean I'm out of here?"

He says, "Yeah, you're going to have to report."

So I went in the shop and I gathered up all my tools. I told Norm Hayes, the shop supervisor there, that "I'm gone." So I did. I left and I was supposed to report that Monday. I went down to the bus station, and it was awful quiet down at the bus station. [Did]n't seem to be too much activity. I think my dad was with me. Did you go with me?

P. KENNER: Yes.

KENNER: And Patricia, my wife, went with me. We stood around there for a while, and then finally got that the buses weren't running. So I called up Mododay [phonetic] Building down in Los Angeles [California], and I says, "There wasn't any bus here to pick me up."

They says, "Well, you were supposed to be on a train."

I said, "The train?" Now, the train was right across from the bus station over there, but what they had done is the buses had gone on strike so they made arrangements for me to take the train.

Well, I got inducted. I went to Ford Ord [California]. When I went to Ford Ord, fortunately, my experience at NACA, when I went there for an interview, they were pretty impressed about the experience I had in those three years working for NACA. So they put me in the Southwest Signal School in San Luis Obispo at Camp San Luis Obispo [California], and I got twenty-four weeks of field-rated repair training, which was a big help. That probably accelerated

my education towards instrumentation, because I had all that field-rated repair training, so that was electronic training.

So that when I did get a discharge, when I came back to NACA, I got my job back right away. All I had to do was I called them up. I says, "I'm on discharge on Friday. I'll be to work Monday."

There was no question. They said, "Okay." So I went back to work to NACA. Well, I got to work on all the X-series of airplanes. I got to work on, well, of course, Phase One was my principal airplane, but when I got back there was the Phase Two, the rocket airplane, and then the X-1s. There was a series of X-1s, you know, X-1A, X-1B, and X-1D. I got to work on those, maybe not as a principal project, but as helping with the other technicians, and the X-4, and then there was the X-3. I even got to work on the X-2. We used to go out to the lake bed with the X-2 during the landings and take the film drums out of it.

That always brings up a real interesting little episode. There was another technician on the X-2, and when the X-2 crashed, when Captain [Milburn G.] Apt lost his life and went into the desert floor, Chuck Lewis [phonetic] was the other technician, and he went out and collected all the films drums, which were in really bad shape. They were bent, caved in, but he went out and he wrapped all these drums in a black cloth, and we brought them in, into the lab, and we were going to develop them.

So I was enlisted to develop all the film from the X-2 crash. So when I got in the darkroom, and there were all these drums in there, and I had to pry them open and break them open and then get them out and get the film out. And I'm in there developing away, and I was the only one in there doing this. All of a sudden there was a big bang on the door, on the

darkroom door, on the outside. So the response usually was you yelled "Dark," to make sure that people didn't open that door. So I yelled "Dark."

This voice comes back, "Well, when do you think you'll be done in there?"

I said, "Well, I don't know, probably in about twenty minutes, twenty-five minutes." So I'm going along, working away, and whistling. I'm developing all this, and finally I get it all developed, and I get it all in the wash, and I finally answered. I said, "Okay." I opened up the door, and there's Walt Williams standing there. There's the general of the base standing there. [Laughs] They came in in just a rush, and they wanted to look at the airspeed film, and they wanted to look at this. And I was kind of taken aback, you know, all this activity. But they were really interested in what happened to that airplane, and they wanted to look at the data.

WRIGHT: Was it your job, as well, to analyze the data?

KENNER: No. No. No, we just produced the data, and what it was is we took the film, and we put them on big drying racks, and it dried the film. Then you labeled them, and then they sent them upstairs. The girls upstairs actually received the data and reduced all the data. That's where you talked about [Mary (Tut)] Hedgepeth, and the other girls that ran up all that data. I guess the engineers probably told them what portion of that data they wanted to look at, and they would plot it all up. But it wasn't our job to analyze any data.

What we did is prior to a flight, we'd take what we called preflight check records, and we'd take records of just short bursts of all the instrumentation and make sure that all the traces were there, the references were there. We even put inputs to the sensors to check the deflections

and even a slight calibration, just to see that things were working properly. Then the data went on from there; went upstairs.

Well, we might take the data, the rolls of film, and we'd go through them before we sent them upstairs to make sure that everything was there, that all the traces were there and that all the data was presented like it should have been, and our zeros that we took, make sure that—what we called zeros was the deflections of all these parameters—make sure that like if it was on a surface, on a aileron or stabilizer or whatever, you went out prior to flight and you made what we call zeros. You put all the surfaces in one position, and then you put them in another position, and then you could check your zeros against another film that you had taken beforehand to make sure that they're the same. Like if you moved it ten degrees, you want to make sure that the deflection of that trace went ten degrees, and then you compared it against a calibration that you had to make sure that deflections were the same, see, and all the calibrations were the same. So that was our process.

WRIGHT: How many people did you have working with you at this time in your area?

KENNER: You mean in the whole shop?

WRIGHT: Yes, your instrumentation.

KENNER: Instrumentation, probably about fifteen, twenty.

WRIGHT: Were they various levels of experience, like some more apprentices, or were they pretty much as knowledgeable as you were?

KENNER: Well, they were pretty much as knowledgeable as I was, but in an any group of people, you have different levels of abilities. There were some people that took the initiative and would accept the responsibilities. So what you find is—there was different grade levels. There might be a WB-6, a WB-8, a WB-10. Then we had crew chiefs, what we called crew chiefs, and they would have the responsibility of one airplane and maybe have two technicians working with them, or just one. So you worked up the line up to crew chief, and that was pretty top level, and then you were supposed to be pretty knowledgeable.

But you still had some people that were just—they had a lot more drive. Like out of our shop, we had one who became a heart surgeon. That was Chuck Lewis. He became head of the Biomed Department at NASA there, okay, and he came out of our shop. There was another one, Jay Magg [phonetic], who was an FAA [Federal Aviation Administration] Administrator. He had moved up, left our shop, and went into an air controller position, and then moved himself right on up to an FAA Administrator. It was kind of interesting.

Then there was others that, like a WB-6 level, which is a medium grade level, they never did anything else, because they were task oriented. They weren't innovative or they weren't people who looked at how to do something better or how to innovate or how to move themselves up the line. They put things together. They made wiring harnesses and maybe did some calibrations and things like this, but that's all they needed to do. I remember one, he wouldn't even accept any more. He'd do his task, all right? He'd sit at the desk and he'd do his task. When he did that, when it was all all over with, that's it. You'd have to identify the fact that he

completed what he had done. Then you'd have to assign him another job. So it's really an exercise in the humanities.

WRIGHT: Yes, personality.

KENNER: In personalities and the humanities. I went to this person, and I said, "Come on, if you want to progress, if you want to get up to a higher grade level, you're going to have to do more and accept more responsibility and push yourself a little bit."

"I'm going to do that," he'd say. "Okay, I'm going to do that." Nothing changed. Finally, as a lead man—I became a lead man—and as a lead man, I became aware that certain people had certain abilities, and you're not going to really change them much. So what you do, finally, is you use these people in these positions. If you find somebody that will accept responsibility, you push things their way, and they'll progress. The others are just going to do their job, and they'll even complain that you're using favoritism.

That was kind of interesting. They'll say, "Yeah, you know, he's getting ahead because you're favoring him." They didn't see the picture. So, as a lead man, that's one of the lessons I learned.

So as time went on, I became, after working in that shop, the shop foreman. The shop supervisor, he was getting ready to leave, so I put in for that job, and there was two other individuals that put in for that job, and I didn't get it. And I was a little upset, because that was a grade—it got up in the grade increase, and I even went to the Engineering head who made the decision, and I asked him why. Well, they don't have to tell you why. They didn't have to say

that he was more qualified or I don't like you or whatever. They just said, "There was three people there put in for that position. I chose him," and that's all he has to say. So, okay.

To this day, he did me a favor, because that would have meant I would have had to have been a supervisor of a shop. I was really not cut out for that job, and I don't think I would have liked it. In fact, the guy who got that job did not like it. What I did is I was working on a 727 crash program. That was the fuel additive program. But I went to Engineering head there one time, and I said, "Why don't you put me up into Engineering?"

He said, "I'd love to," and so they did.

WRIGHT: Good.

KENNER: Now, I was not a degreed engineer, but I had worked myself up enough to doing a lot of engineering work anyway, and so they said, "Okay." So they just took me up in the Engineering and gave me a desk, and I was on the same level as the rest of the engineers in there, except I wasn't degreed. Well, when that happens to you, it's not—you're limited about grade levels or you can't—finally he got a GS-12, but you couldn't go up any higher than that. Any degreed engineer can take supervision-type positions and move up, but you're—that's it. You're there, unless you wanted to go back and get a degree.

I even thought maybe one time that I might work at getting a degree, and so I started going back to school. I was going back to college and taking courses. But I was working nights, and I would get up in the morning and go to school. But that kind of conflicted with family life, and Patricia didn't really care for it that much, and she got to feeling a little about that "You're just taking too much away from the family, doing that."

So I gave it up, which was all right, because I had gotten far enough along in the engineering job that I was happy about what I was doing. I loved working with aircraft and doing engineering work, and that's why I said that the Engineering Supervisor at that time that didn't pick me for that supervising job did me a favor, because I enjoyed the other job so much more. In fact, I was going to say, the other guy who took that job, he gave it up and he took the same position I did by moving up in Engineering, see?

WRIGHT: Well, talk to us about some of the projects that you were working on. You mentioned you worked in the D-558, and you worked the X-1s. So tell us some of the things that you remember working on and about the days. How was that time period at Muroc, and of course, as the name changed and the tasks changed? Kind of tell us about how some of those projects affected you and your life, and what was going on there at the Center.

KENNER: Okay. Well, in the beginning, when I first went to work there and we were working down at the old base, South Base, that job down there was a small complement of people, and you did just about everything on the airplane, I mean as far as instrumentation-wise. I built a lot of stuff that went on board the airplanes. I built the power distribution box, and I built signal-conditioning boxes, and anything like that. In the early days, you didn't have any problem with that. You could do that and you could put it on the airplane and fly it. Something that, like the Phase One, that flew some of the stuff that I built. And you say, "Gee, as an apprentice you built things, and they installed it on the airplane, and they used it?"

Yes, that's the way it was then. It was a kind of a job shop organization, like back in the 1930s when they were building race planes, and people drew diagrams on the hangar floor and

built things. Well, when we got up to this, why, it wasn't that bad, but it was a lot like that. I mean, you just did things. [Laughs] You were talking to Earl [R.] Keener out there, right?

WRIGHT: Yes.

KENNER: He was a research engineer, and he was on the Phase One. He'd come out, and then we'd work together. I'm doing the instrumentation, and he was—well, that's the way it was then. Research or engineer, they would come out, and they could get involved on the airplane and work with you and maybe do calibrations with you. But that, as the bureaucracy built, as things got more involved, they kind of started separating that. That's even when instrument engineering started getting involved, when we went up to the new base, new hangar, and they started hiring instrumentation engineers.

There was kind of a conflict with some of us on the floor, because we had been doing a lot of stuff that all of a sudden became instrument engineering responsibilities, and they kind of pulled it away from us. It was kind of a—I don't like that, you know. You had been doing it all these years, and all of a sudden that's not your responsibility anymore. So it was kind of a conflict.

But working on the aircraft, yes, Phase One. The environment down at the old hangar was not the best. There was no cooling. When I first went to work there, there was very little heat. They didn't even have any heat out there in that hangar. It was cold. I can remember working out in the shop, going out and working on a airplane for a while, and then get so cold that you had to come back in the shop and stand in front of the heater just to warm up. [Laughs]

In the summer, if the airplane was on a ramp, you couldn't touch that airplane, hardly. Fortunately, the Phase One was painted white, and so that it didn't absorb all that heat. But some of those airplanes, boy, like if it didn't have any paint on it and it was just shiny aluminum, you couldn't go out and touch that airplane, it would be so hot. So you didn't have to do much outside the hangar.

P. KENNER: You need to go through all the different airplanes that you worked on, though.

KENNER: Well, all the different airplanes that I worked on, like all the X-1s, they were down in that hangar, the X-4, the X-1. The X-2 wasn't; it never got to NACA. It crashed before it ever got to NACA. Although we had instrumentation in the airplane, the airplane never got to the installation. But let's see, there was the X-1 and X-2, the X-3, the X-4.

Now, the X-4, that had terrible engines on it, screaming engines. When that thing rolled up to the hangar. They'd bring it up. After a flight, they'd roll up, actually up to the hangar door. Boy, it would almost make you sick, listening to the two engines in that thing just scream. You'd almost have to cover your ears or go somewhere till they shut that thing down. But it was a terrible noise. And to this day, things like that, people who worked at NACA in the early years, have hearing problems, and a lot of it is due to that.

So there was all the X-series airplanes. Then there was a whole other bunch of programs. I worked on the deep stall. That's a sailplane that had a horizontal that shifted into a very high angle [of] attack that the airplane would stall and just drop like a leaf. I worked on that, and then I worked on the 100, the F-100s and the 104s.

Basic instrumentation kind of moved around. It wasn't like you had somebody who worked directly on a vehicle, like a mechanic, that had other systems. Instrumentation systems were basically all the same. You could go from one airplane to another airplane to another plane, see, and they were all about the same. So it was easy for myself or any other technician or instrument mechanic—that was our label back then. You could go and help somebody else, or you could almost take over their vehicle, because the instrumentations were basically all the same, all the same type of recorders, the airspeed recorders, the turn rate, gyros, whatever. All you had to know is where they were in the airplane. But even the electronics—or, the electrical hookups were all the same. You have a power distribution box. You had this or that, and that was it. It all went in the same, all around to the different airplanes.

WRIGHT: Did you have a lot of projects going on at the same time, or once one project started, you stayed with it until that one was finished and you got another one? Were you working on a lot of different airplanes at one time?

KENNER: Well, you primarily had your vehicle that you were primarily assigned to. Like I say, the D-558 Phase One was my primary airplane. But I could go and move over to X-1, or I could move over to the X-4 and help them. Or if they were gone or the technician was gone or whatever, go over there and do that one. So you could move around, but you did have a primary project.

WRIGHT: Tell me about when they went up for testing. What were you doing during that time period, when they took the flights?

KENNER: Oh, at that time, in the early years you just cooled your heels until the flight was over, and then you went on and unloaded the airplane, the film drums out of the airplane, and you brought the film into the lab and took it into the darkroom. Developed all the film, dried all the film, checked your rolls of film, like I was saying you checked the zeros and whatever, and then you sent it.

Then a lot of times after that, well, they would want to make modifications or changes or maybe they're adding. The program would come down, because they're going to change the program—what do I want to say—they were changing what they wanted to do. Maybe they wanted to go into a temperature program and measure temperatures. Or maybe they were going to do a pressure program or something else. So after a few flights, they got the information they need, and then they want to move to a different task. Then your job would be to make those modifications and changes.

But you always had repair work. Sensors would fail; you'd have to repair them. Or you had recalibrations; you had to go out and recalibrate an instrument. So this was an ongoing thing all the time.

WRIGHT: Was there kind of like a cloud of secrecy of the work that you were doing while you were there? Did you feel like things that you were doing were classified or secretive?

KENNER: Not in my area; not in instrumentation. Maybe the information and maybe the data they're working up and maybe the reports became classified. I just don't remember any really secret—maybe classified information. But the actual gathering, the way we did our job, or what

we were doing was never classified. I was never told. We didn't have a secret clearance. We had a security clearance, but I never had a secret clearance. I suppose there are some jobs that maybe they did get a secret clearance on, but I don't even remember any. NACA was pretty open. They weren't really hiding anything. We didn't have high security in there.

WRIGHT: More of an exchange of ideas?

KENNER: Yes. Yes, I never felt uncomfortable about going out and telling people what I was doing, and I didn't think I was ever divulging anything that I shouldn't have been.

WRIGHT: What kind of interaction did you have with people with the military or with the industry? How closely did you work with those two groups?

Kenner: Well, I worked with the Air Force on the TACT [Transonic Aircraft Technology] Program and then the IPCS [Integrated Propulsion Control System] Program. In fact, I got a letter of recommendation from the Air Force from that Colonel that I always kind of revere, because they wanted to do a program on the F-111, and they wanted to move right along, and I think they didn't have a lot of funds, and they wanted to do this.

So we already had an instrumentation package for the F-111, and I said, "Well, shoot, we'll just use that package and modify it a little bit, and we can have you going in no time." And we did. We moved that project right along, and he was really, really happy about that, and he sent me a letter of recommendation. I always kind of, "Gee, that was kind of nice." He singled

me out. I guess that's one thing that made me feel good is he singled me out personally about helping them get that project going.

Oh, let's see what else I would want to say that might reflect what it was like then. The problem—and you probably got this from John, I'll bet you, a little bit. Back in the old days we got things done. We didn't have a lot of money. I remember in the old base that there wasn't that lot of money to spend on connecters and things like this, and what we did, if a project come down, we really salvaged everything. We salvaged all the connectors; we salvaged the wiring, because we could use it in another aircraft. Well, when Sputnik came along and the X-15 came along, well, they had some money to spend, and so we were able to buy a lot of stuff and a lot of test equipment.

And then the complexity of the instrumentation. See, I lived, or I worked, from the very—what do I call it—evolvement of instrumentation, the evolution of instrumentation, from electrical-mechanical, which was nothing but galvanometers and gyros and mechanical type on film, it evolved right on up to PCM [Pulse Code Modulation] systems or electronic systems there at the end. So there's a big technology change between 1948 and 1985. I mean, it was huge.

So I see on your questionnaire, "What challenges did you have?" It was always a challenge to stay up with technology. I went to a lot of government-sponsored courses in instrumentation and electronics that they provided, and that's probably where I got primarily my most education. I have to admit that they did a good job of that. When things were starting to change and move into electronics, well, they made these things available to you so you could stay on top of it. It was great. Now I suppose, from the time I left there and the time now, I don't think I could hold that job anymore, because it would be such a technology change. You had to be retrained all over again.

WRIGHT: Your best friend and worst enemy at the same time, wasn't it? Changing technology.

KENNER: Yes. Yes. That was the challenge, to stay on top of it. Because innovative things were happening on the outside. Away from NACA and NASA, you had to keep track of them. I even took a course in FORTRAN, that computer programming, and boy, that was taxing. That was a tough course. But I didn't really ever use FORTRAN. I never used it in my job. But it made you understand what other people were confronting, what they had to do, and so that you could adjust your job to fit theirs and move up.

The computer generation, you see. Patricia, she's into computers. She does all that. She just loves computers and she'd worked with software all the time. She gives me a bad time that you're not literate, you know, if you're—

P. KENNER: Illiterate. [Laughs]

KENNER: Illiterate, she says. [Laughs] But I watch her and I kind of keep up with what's going on with her, and in fact, it's wonderful that she does that. So I can say, if she ever disappears, I'd—uh-oh! Beside her being gone, I got a problem with everyday living. [Laughs]

WRIGHT: You mentioned about the technology changing, and then earlier you talked about bureaucracy. Can you pinpoint when you noticed the change of bureaucracy starting to mount and your normal way of doing informal work, to get things done, started to move into more of a bureaucratic nature?

KENNER: Like I say in the very beginning, there was a small contingent of people. The instrumentation people and research engineers used to work together very closely. In fact, the research engineers almost moved over into the instrumentation, like he would help do calibrations and things like this right on the airplane.

But as time went on, see, and sections and groups built up, became more and more, well, then this conflict of people moving over, doing other people's jobs became an irritant to a lot of people, especially people shuffling for their positions. Okay? "You're not supposed to be doing that, and you're not supposed to be doing this." It happened both ways. A technician that was doing something or he might be doing something in an engineering aspect would be confronted with "But—but—," from doing it, and would be confronted by another section, and that other section was called Inspection. Okay?

To me, Inspection was a deterrent. It took away responsibility from like a technician if he had to present everything he was doing to inspection to make sure that you're doing your job right. That really didn't go over well. That didn't go over well with me. I didn't like somebody, "Well, you can't do this. The procedure says you got to do it this way," and when you knew, maybe, that that procedure wasn't really accomplishing what it should be, or I'll do it a different way. Oh, no, you don't, see. There he goes. So we had this conflict, and then bureaucracy built up that way.

I can remember simple little things like on the D-558, the crew out there, old Raskowki [phonetic] and McLanahan [phonetic], they were cleaning the airplane, right? They were polishing the white paint on the airplane. They were giving me a bad time. "Why don't you give us a hand?"

I said, "Oh, okay," see? [Laughs] I went out there and I got this polish and I'm polishing the airplane.

My supervisor came walking by, and he says, "Kenner, come here."

"Huh? Okay. What is it?"

He said, "Come into the office for a minute." [Laughs] And he says, "You don't do that."

I said, "Well, I had the time."

"You don't polish airplanes. You're in instrumentation. You don't polish airplanes."

So you have these things. They wouldn't let you intermingle and have camaraderie between groups. They would start to divide. Well, as time goes on and bureaucracies get bigger, and more and more of that happens, and responsibilities are pulled away to this group and pulled away to that group, and so you have conflicts. And so efficiency goes down.

WRIGHT: You mentioned, too, that you had stayed there till 1985, so you definitely went through the transition from NACA to NASA. Tell me about the differences and when you started to see the impact of NASA on the Flight [Research] Center.

KENNER: Yes, okay. During the transition, there wasn't any transition. Okay, we're NASA; we're not NACA anymore. That's fine. There's no problem with that. But I think other Centers got involved a lot in what we were doing, and when you get other Centers and other groups of people, again you have conflicts between Centers and whose responsibility is what. So NASA, all of a sudden Houston [Manned Spacecraft Center, Texas] is developed, right? Kennedy [Space Center, Florida] is developed, right? And we had the Lunar Landing Vehicle, and we're

doing research and training on that, but I think I had to work with Houston and the astronauts. So what happened, the picture became very large.

Look how large it is today. We've got a space program now, and astrophysics is getting involved. But aeronautics is kind of waning a little bit. After all, how much can you do with aeronautics? After a while, you'd almost say we'd done it all right then. So we're going into a whole new realm with astrophysics. But the transition between NACA and NASA was just a matter of technology's still changing, right? That's what changed things, not becoming one from the other.

WRIGHT: Not names.

KENNER: Technology has changed things.

WRIGHT: Had you worked with the other Centers, like Ames [Aeronautical Laboratory, Moffett Field, California] and Langley [Aeronautical Laboratory, Hampton, Virginia], a lot before the transition, when you were still just part of NACA? Did you do a lot of interaction with—

KENNER: Well, all the information on things like that came out of Langley Field [Hampton, Virginia\, I mean, for the X-1. It was combined. The NACA outfit, the High-Speed Flight Station, was just a part of Langley, to begin with, right? Then Ames, we became part of Ames, see? Then we became a Center, and then I think we kind of lost that position. I kind of think that we lost that position and became just part of Ames. But, sure, I worked directly on the

vehicle there at the Station, so I didn't interact with any personnel at Langley or Ames, except on occasion.

But I worked on two of Dr. [Richard] Whitcomb's programs, the supercritical wing, that was primarily my airplane. The winglets program, I put all the instrumentation in there for the winglets. They did the base flights and the winglets flights. Of course, then, the crash program, the 720 fuel additive program, was working with the FAA, but I worked directly on aircraft, putting the downlink instrumentation in the 720.

So I didn't have to work directly with anybody. We had our own systems. We had our own instrumentation system, and we put it in there, and we did all the checkout and all the calibrations. We didn't have any technicians from other Centers working on it. It was primarily our bailiwick.

WRIGHT: Tell me about some of the fondest memories that you have working out at the Flight [Research] Center. When you look back and you think about some of the good times, what's some of the good memories that you have from being out there?

KENNER: Well, Rebecca, you know what? They're all good memories. I don't remember a time when I had a difficult time. I was happy about doing everything. There were so many things to do, and one thing about working for NASA out there, especially in my own situation, nobody challenged me that I should be doing this or I should be doing that or this is your responsibility, like that. It was just that I might be given a project, and then they walk away, and you just did it. You had your schedules to go to. You go to your projects meetings and things like that and report on where you are with your instrumentation and how far along are you and what more

time do you need or whatever. But it was all great. I loved it, every minute of it. I can't remember anytime—well, I was upset one time; I didn't get that supervisor job.

WRIGHT: But that worked out.

KENNER: That worked out beautifully. [Laughter] The supervisor's name was Jim Tehann [phonetic], and if I see him next time, I'm going to say, "Boy, Jim, you did me a big favor by not giving me that position." But at the time, it meant a promotion, see, and I was a little upset about it.

P. KENNER: Wasn't NACA out there kind of a stepchild and left alone out in the desert because nobody much wanted anything to do with the desert? And you guys became such a close-knit group, and family-wise, it was a very close-knit group then.

KENNER: Yes, it was.

P. KENNER: It was small, and they had all sorts of family things, and everybody knew everybody, until it started growing faster and faster.

KENNER: Yes, just outside of NACA, in our personal lives, we knew everybody, and we had our parties. We'd have the X-15 flight party, or we'd have the Station parties, and all the wives were involved. No, it was very family oriented back then.

WRIGHT: Were the parties held on base? Like the X-15 parties, were they held there or were they held off-site?

KENNER: Oh yes, you wouldn't dare hold them any of those parties we had on the base. [Laughs] Woops.

P. KENNER: They were held at one of the local watering holes, usually.

WRIGHT: Yes, it was at Roseman. What was the—Juanita's at Roseman. That was a great place to have—

P. KENNER: That and The Office.

KENNER: —yes, and The Office—have parties, after-flight parties. But no, you wouldn't dare have it on Base at night. [Laughs] But we had, what was it, the NACA—

P. KENNER: We had bowling teams and baseball teams.

KENNER: Yes, and then we even had parties out at [Florence Lowe] "Pancho" [Barnes'] Happy Bottom Riding Club. [Laughs] Now, I'm sure you've heard of Pancho's Happy Bottom Riding Club.

WRIGHT: Well, you could tell me your experiences there. [Laughter]

KENNER: The only experience I got, is one time I went out there and Cliff Morris—do you know that name?

WRIGHT: No.

KENNER: Cliff Morris was a technician in our shop, or an instrument mechanic. He was a very good friend of Pancho's. Well, the Air Force, they were getting ready to take Pancho's place out there, and they were going to confiscate it. Eminent domain type thing. So she wanted to get the general of the base into court, so Cliff, and this is in a book by—I forget what her name was that wrote that—but he, Cliff, knew Pancho, so she subpoenaed the general, but she couldn't get on base, right, to serve it. So she got Cliff to go down there, and fortunately, it was lunchtime. He went down there and served those papers to the general.

Well, when he got back to the shop, there was a call to Walt Williams at the Station there, at the hangar, and, "Who was that guy? Who was that guy who came down there and served those papers? I'd like to see him fired." Well, Cliff, he didn't do anything illegal. He did it at lunchtime, and it was on his own time. So that was a big flap, you know. Oh, that was good. We had a good time with that. [Laughs]

Well, I guess Pancho finally got them in. But I had gone out there with Cliff one day, and I met Pancho. He was talking to her there, and then Cliff says, "Well, why don't you join the Happy Bottom Riding Club?"

Now, this is before I knew Patricia. I said, "Okay," and signed up, and I got this little Happy Bottom Riding Club card, and I carried that around.

Well, I met Patricia, and I—why was you going through my wallet?

P. KENNER: I don't think I was going through it.

KENNER: Yes, you was. You were going through my wallet for something, or I was and I had it open for something, and she said, "What's that?"

I said, "Well, that's my club membership to the Happy Bottom Riding Club over at Pancho's."

She grabbed that, and she said, "You don't need that." She ripped it up. To this day I am thinking to myself, "That's grounds for divorce." [Laughter] So that would be a rare old collector's item. I would like to have that now.

The only other time I met Pancho, I was out there. I was learning how to fly a Cessna 170 that we had bought—I had bought with another partner. I was in there, and I had enlisted a instructor out there at the field, out at Fox Field [California], and Pancho come sailing in the door. She was getting pretty old about that time, but her son was the fixed base operator at Fox Field, and she went in to see him. She was talking about she was going to renew her license or she was going to get a license, and she was talking to her son about it. I'm sitting there, and I'm looking at Pancho, and I says, "That woman wants to get back in the air? I don't think so." [Laughs] She never did, but she was talking about it. She was going to do that. Oh, boy.

WRIGHT: Speaking of pilots, how much were they involved with the work that you did? Did you work with them closely?

KENNER: Really, as far as instrumentation went, really not closely. The pilots, they didn't get involved in primarily what we were doing. In fact, other than our research engineer, somebody directly on a project really didn't involved with the instrumentation people or group on the airplane. There was a few mechanics there that used to call us a bunch of old women, because instrumentation people, you know, we had our job, and we did, and I don't think anybody really kind of understood what we were doing, see, and so they kind of left us alone.

That's why I got along pretty well out at NASA in all those years of moving up from the very basic position clear up to Engineering, is that nobody really challenged me much. If I wanted to do something or I wanted to accept responsibility, I'm like that, and they're, "Fine. Go ahead." Or I was given a project, and I worked with the project engineer very closely, people like Wen [Weneth D.] Painter or John [G.] McTigue or Gene Matranga. There were a bunch of project engineers, and that's who you worked closely with.

Except maybe an engineer that was doing something specifically on airplanes, some measurements, you might work with him. Bill Birchham [phonetic], I remember working—he was in Propulsion, so I'd go up and talk to him about transducer ranges and positions and what we wanted to measure, what did he want to measure and whatever. Then I'd just go off and do it, you know, get him what he wanted to know. That's what the instrumentation engineer did. You went and got a parameter from a researcher. "This is what I want to measure."

Say, "Oh, okay. You want to measure pressures. You want to measure temperatures, accelerations, or whatever."

Then you went back, and you assigned the ranges, and you assigned the type of transducer that was going to fit in the instrumentation system and its resolution. And later on the PCM systems, where you had bitstreams, or data bitstreams, and you assigned a parameter to

these different words in this data bitstream, and then you assigned a resolution and the accuracies of what they wanted, and that was your job.

Then you'd get that all in the airplane, and then you'd make up these line-up sheets, and then I'd send that up to High Range, and High Range, they would set up their whole range system from these line-up sheets, because they'd pick out the parameters they wanted put on the strip charts and what they wanted to record. So that was primarily my job there in the last, was setting up the instrumentation system. Well, and specify what type of transmitters we were going to put in there, the size of the wiring, and how it was going to be hooked up. I used to make up all the wiring diagrams for the technicians on the floor to wire the airplane.

P. KENNER: But it didn't matter whether they were test pilots or secretaries or Personnel, when they had a party, everybody was there.

KENNER: Oh, you bet. [Laughs]

WRIGHT: The whole team.

P. KENNER: Yes, everybody was there. There was no difference, and everybody was there.

WRIGHT: Well, there were a lot of successful days at the Center, but there were those days that were bad, when you had bad news came back. Can you share how the Center handled that, and how long it took for the morale to feel like it was good to work again?

KENNER: Are you talking about when we'd lose a pilot?

WRIGHT: When you'd lose a pilot.

KENNER: Well, we lost Joe [Joseph A.] Walker, okay, and that was an unfortunate accident, and I think everybody felt pretty bad about that, because it didn't need to happen. But I guess you can probably say that about any pilot. But we only lost—we lost Joe Walker and there was Captain Apt. He was an Air Force pilot. Boy, I tell you Rebecca, I don't remember us losing—we lost another pilot, but he was flying a sailplane up there at California City. It wasn't even on a project at the Center.

P. KENNER: Bruce [A. Peterson] got injured, but he came back from that.

WRIGHT: Yes, he came back.

KENNER: Yes, he got injured; he very likely would have got killed. But the success rate—you say there's failures, and we had failures, and I can probably tell you a lot of aircraft test failures, but we didn't lose a lot—any people.

WRIGHT: That's great.

KENNER: We lost more people flying sailplanes at that place. I used to fly sailplanes. I got involved in that. Patricia got me involved in that. [Laughs] She's the one that got me into

flying sailplanes. But we used to fly sailplanes out at El Mirage [California]. But you think about the people that had accidents in sailplanes out at NASA—not related to the job, necessarily, just in their private lives—there was Wen Painter. Did you ever talk to Wen Painter?

WRIGHT: No.

P. KENNER: He's not NACA.

KENNER: Oh, he's not NACA, I guess. You're just talking to NACA people? Yes, okay. Then there was John Williams. He was the second in command at the Center there under [Paul F.] Bikle. Then there was a girl engineer; what was her name? She was killed. Then there was a couple of engineers; it was an engineer and his brother was killed in a sailplane. God, it was amazing. Somebody told me one day that, "Ah, flying sailplanes is benign. It's not a big deal." You can very well make a mistake in a sailplane that can kill you.

But getting back to your original questions, yes, I guess when we lost Joe Walker, that was kind of disheartening. But again, if you're doing those kind of things, if you're flying research airplanes, or even if you're working at a Station in situations which can be very dangerous, and something happens like that, I always felt like, "God, that's really bad. But we're doing those things; things happen." You kind of take a matter-of-fact approach to it. But that may be me personally. There may be people that feel more emotional about those kind of things and they get upset about them. You never saw depression or demoralized. They're always same thing, you know. Straight ahead, let's go.

WRIGHT: Focus, yes.

KENNER: Keep moving. We got a job to do. Let's do it.

WRIGHT: As we start to wind down our conversation today, when I talked to you on the phone to set the appointment up, one of the comments that you made was that during that time period, you never realized the kind of history that was being made, that you were being involved in. Looking back on it now, what do you think about the fact that you were so involved in so much historic aviation progress and success?

KENNER: I look at it as you probably, at your age, and the things that you do, and you don't think too much about history. You maybe do, because you're working in the history industry. But people are working their everyday lives, and they're doing this and that, and you're accomplishing this, you know, like that. Then you go to the next project, and then you do this. You never think too much about history of it or what's going to happen when I'm out of here or when I look back.

But then when you do finally get there, and I finally quit and retired in '85, and then I started looking back about the things that happened. And other history you watch it on television. You see the—"There's old Dryden [Flight Research Center, Edwards, California]. They're doing a program on Dryden." And you just watch. "Well, I worked on that program," or, "I did this," and like that, and then you get to realize that there's a whole lot of other people

out there in this nation that are looking at that that are in awe about what happened and what's going on.

You see the X-15 being dropped, and to me it says oh, yes, now we're dropping the X-15, and we're going to do this or we're just going to land. But then later on, there was a lot of history and a lot of effort that went behind there, and a lot of people worked on that program to get it to that position. It's amazing.

P. KENNER: You realized how much history you were in when you went to the Smithsonian [National Air and Space Museum, Washington, D.C.] and saw all the projects you worked on hanging in the museum.

WRIGHT: It's pretty awesome, isn't it?

KENNER: Yes, we went to the Smithsonian, and I'm going in there, and gee, the Smithsonian's got the X-15 hanging up there. The Phase Two is hanging up there, and there's the X-1. There's the Lifting Body M2F3. What other airplane was hanging up there? There was five airplanes. The 818 and the [F]-104-818 was hanging up there. They're considering that enough of a history to be hanging in the Smithsonian. Now, I worked on some of those things. Then you can get kind of emotional about it. You think, "Wow!"

WRIGHT: Quite a success.

KENNER: Yes. So anyway, that portion of it, working in history, I'm sure the family. "Well, gee, my dad did this." I can hear them now. "My dad worked on that, or did this." They'll take a little bit of pride in that. But when you're doing it, Rebecca, no big deal.

WRIGHT: Doing your job. Is there some things, Patricia, you can think of that maybe we didn't talk about today or some other things that come to mind that you thought about that you'd like to mention?

P. KENNER: I can't think of anything.

WRIGHT: Thanks for bringing up the family atmosphere, too, because it tells something about the Center.

P. KENNER: Well, it was, and I'll have to say that when he talks about it, when NACA became NASA and as it grew, and I guess it's because there's more personnel getting involved, so then it has to become a whole department, and that's the beginning of this close-knit group. I'm not saying it's wrong or right, it's just that the beginning of a different atmosphere. Then the parties got separated. You didn't interact with the people as much, and, of course, there were more people. So that was the change in dynamics that we were kind of sad to see change, but that was just the way it was.

KENNER: It all kind of started with the X-15 Program, I think, after the X-15 and after the Lifting Bodies. After those two programs, then you saw a little bit more of a separation or

whatever. But it was just—any organization that expands and gets bigger becomes a bureaucracy, and efficiency goes down. Then I'd always hear people say, "Well, you know, it isn't like it used to be." Well, hell, no, it's not what it used to be. You don't want it to be like it was or like it used to be, because if it was, you're not making any progress.

WRIGHT: No. You're back in that hangar where there's no air. [Laughter] Back in that wire cage with all the dust.

KENNER: That's right. But they were talking about their responsibilities, their personal feelings about the place, and it isn't like it used to be. Well, you have to grow with anything. When it grows, you have to grow with it, and some guys just couldn't do it.

P. KENNER: And there are good and bad with the growth. The good part will overcome the bad, but the bad is. It becomes less—

KENNER: It was less efficient, and less gets done. It gets to the point where a lot of people are standing around waiting for somebody else to do their portion of it.

P. KENNER: Well, a perfect example was your doing the work for the Air Force. If that had to got through an approval by the Senate Committee before you could give the—

WRIGHT: [Laughs] It still wouldn't be there.

P. KENNER: So those things change.

KENNER: Yes. But anyway, I don't know if you're interested in looking at any—I have my old pay records and stuff like that, back, that shows you the progression. I don't know if that's any interest or not.

WRIGHT: Well, not even maybe for us, but it's certainly something to talk with the History Office at Dryden about, because I'm sure they have an archives that they would like to keep some of those things. It's getting harder and harder to find older items, because a lot of times people don't know what to do with them, so they throw them away.

P. KENNER: They just toss them, yes.

KENNER: Yes. I'm sure most of that stuff has been tossed and like that, but I kept all my wage increases and all my promotions and all that stuff. I've got it all. But you're right. I mean, probably Dryden. Of course, I've got a ton of pictures. You've already got a ton of pictures in there, and probably all of them filed there at NACA, anyways.

WRIGHT: Could be. Could be. We just don't know, because sometimes when budgets start to [decrease], History Offices start to disappear. Or they become shoved under something else, and then things aren't kept or things get lost or they get moved to another place. So you could at least—and Betty [Love's] a good person. She knows what's in that office. She could tell you if

some of that stuff is worth filing there. And if not, you let us know, and we'll see if the Headquarters Office wants some of it. So we'll do what we can.

Well, thanks for talking with me today.

P. KENNER: Oh, you're welcome.

WRIGHT: I appreciate it.

KENNER: Yes.

[End of interview]