

ORAL HISTORY 6 TRANSCRIPT

JOHN S. LLEWELLYN, JR.
INTERVIEWED BY KEVIN M. RUSNAK
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RUSNAK: Today is January 9, 2001. This interview with John Llewellyn is being conducted in the offices of the Signal Corporation, in Houston, Texas, for the Johnson Space Center Oral History Project. The interviewer is Kevin Rusnak, assisted by Carol Butler.

I'd like to thank you for coming back to see us again, and if we could start talking about Apollo 13 and your perspective on what happened there.

LLEWELLYN: I really feel overcome with this, because this is one of the most important things that have happened to me, especially a high-water mark, I think, of NASA.

I was at the point of becoming senior Flight Dynamics Officer. I'd been in since Mercury, and by Apollo 13 we had started bringing in—well, Apollo 8, really, bringing in some of the more new breed, as I call it, the new Apollo bunch. I wasn't even on the mission. At this time I was a section head, and I think we'd started work on another advanced project at NASA. But I was very familiar with it, and I couldn't stay away from it.

I was taking a class at Rice University at the time after work. I was coming back to Friendswood, and I was listening to the NASA voice loop. We always had it on, and it was how NASA did it. We would let anybody listen to anything we were saying. I was on the Gulf Freeway, I-45, and I remember the first thing I heard is this whole discussion with [Seymour A.] Liebergot and then he and [Eugene F.] Kranz discussing what had happened. I didn't hear the

first part of it, but I did hear the “Houston, we’ve got a problem” that started that whole thing. I immediately didn’t go home. I turned in and came right straight to the control center.

I can’t even remember what time it is, but probably it’s got to be 9:00 or something, because there’s class. When I came in there, there was pandemonium in the control center. I had a new guy that was a Retro [Retrofire Officer] there at the time. What we did is, he kind of told me what he thought was going on. What I immediately did is to—since I had some time, really, by the time I got there everybody really didn’t know what to do and it seemed like the shock was there. People were doing things, but they were doing almost automatic things. Like the mission was still nominal, which concerned me. Except I got on this guy and told him, “Start running free return trajectories and just see what it was,” because, see, we had not gotten to free return yet, and 13 was not a free return.

You might, at some point, somebody ought to really write that down technically what that was and why we did it, because that’s almost an hour by itself. He had all the time, but it’s worth for everybody to understand what that meant. What we did, we targeted so we would come back to Earth no matter what happened, no matter how it worked.

Okay. So I got in that. I went down in the control center because I knew all the guys. I went down to telemetry sup [supervisor] and I went to everybody in the bottom of the bowels, and I got the feeling that there was nothing on the downlink. I mean there was no reason to see anything. We had an unusual setup with antennas and so forth, but that’s too detailed to go into, and nobody’d really understand anyway.

So I got back up and I knew we had a problem. So I started working on a system of things that assuming the service module was ruptured out, damaged badly, which it seemed like it would be, how would we get back with the LM [lunar module]. I had run a book, like an

annex, of all the different combinations of dock burns, of LMs and CSMs [command and service module], and CSMs by itself, and the whole number-one thing. Because, remember, I was responsible all the lunar aborts. If we went down on the Moon and it didn't look right, they would fire in the hole and come back up. We would have to take the CSM to go after it. So because of that, I knew all about the engines, I knew all about the control centers, I knew everything, because I had to know that. That's a very important part of this.

I had sat down and gotten all these written by the guys from MPAD [Mission Planning and Analysis Division], and we put a book together. A guy named Bobby [T.] Spencer, who was one of the new Retros, that was his job was kind of like a post-docking. If he did that, he'd learn a lot, and then everybody didn't have to go through it. I pulled that thing out, and I got the dock burn that we needed, using the LM engine we needed. I got the rest mapped to what it should look like. That's the thing that sets up the attitude. I start running those things for all kinds of cases that I could think of. The only one I could think of was to get us back on free return, a very small delta V [change in velocity] to put us around the moon, because, remember, we didn't have an SPS [service propulsion system] engine. I assumed that. I don't think anybody else was at that time, but I did.

In the meantime, too, I called everybody I knew. I called Glynn [S. Lunney] when I walked into the control center. I called Dr. [Christopher C.] Kraft [Jr.]. I called just some real top guys I knew and told them we really had problems, start getting ready to get in here and help us. So as way ahead of that before anybody did that, so they were already there.

The problem we had was this, and this is so difficult when I think back on it, that free return exhausted the CSM resources, because the lithium hydroxide canisters, we hadn't figured out how to do that yet. I tried to talk to Gene about it, but he was so into doing his part of it.

But when we went into the flight dynamics SSR [staff support room], where we had the meeting, and there's less than thirty people there, you probably couldn't do this anymore. It was Kraft and the guy from headquarters, I forget his name, and [Donald K. "Deke"] Slayton and the astronauts and all the people, Lunney, all those guys.

We got to talking about it, and I got up, and this is the worst thing I ever had to do. Not only they asked me what I was going to do, and that's what I always did. Remember, by this time, that that's the kind of guy I was. Being the reentry guy, everybody, no matter what happened in all those missions we always flew, no matter how bad it got, I remember flight saying, "Hey, Retro, what are we going to do? We sure have much too much." So that is what I did, and I think that's the job I did. I think that's the reason, because it bothered me all the time that no matter what happened, you'd be faced with this.

This was almost unreal. It was unreal. How would you ever pick a place like this, that was that harried to lose the engines? But we had one chance to do it, but the chance meant that we were going to kill the crew. Okay? All your life, I think always people go through things. Maybe y'all haven't got that yet. But you get yourself into things that all of a sudden it's very clear what you've got to do, but it's the most bizarre situations you can think of. I mean, all my experiences in combat and all the stuff I've done as a Marine. By the way, I was in Chosin Reservoir [during the Korean War]. That's fifty years ago, Christmas.

And I just couldn't believe this. Plus the fact—and that I want to get this point across, too, for everybody—it's my opinion that males have a real thing going on. We have to have our peer group agree with us. I don't think females have this. It's very important that our peer group believe what we say and do. If you don't, it's called credibility. But if you don't have

that, and if they go against you, a lot of scientists have committed suicide because they didn't listen to what they wrote. So this thing was the most bizarre.

And I had to say that, and Slayton couldn't believe it. I mean, he and I had gone hunting together. He couldn't, that I would even come up with anything like that. I don't think that I've ever been through such a mess in my life. But then as I talked through it, I said, "Well, what are you going to do? I mean, if we don't have that G and N [guidance and navigation] up and make this maneuver," and that's what took it. We had to bring up the guidance control center platform, which took more resources, which took more oxygen and more energy. All of that made this thing worse. I said, "What are you going to do?" I said, "We are non-free return. The further we get, no matter how far you go on getting out there, you're not coming back. We don't even know what the damn thing weighs."

Because if I could turn the G and N on and make it a maneuver that had the accelerometers and had this platform up, I could take that maneuver, because it was twenty foot per second, and work backwards and find out what the mass was. Then I could find the weight. And that's what I wanted to do. I wanted to find what had happened.

Well, we argued and then I made the—it's in the movie, [*Apollo*] 13. I didn't see it, but I said it. But that's not who said it. I told them, "Look, remember, a long time ago in Mercury when we first started this, we've always had a mission rule we'd said right in the book, we'd never leave a man in orbit. And we cannot afford to do this, because this thing is in a fairly big orbit."

Just the little bit I ran looked like it was about a two or three year, and that means that every three years it'd come back. Now don't call me on that, because I don't remember. But I did take the trajectory and have ACR [Auxiliary Computing Room] run what kind of orbit we

were around Earth. But we just couldn't handle that, and I told them. So we decided to do that, and then it turns out within some time that we had got the idea we could exchange the filters. The, aw, hell, I can't remember. Then [unclear] and then that's when we got into and we planned to do it. We made the burn. Lunney went in and made the burn.

It turned out I was right, it was loss of mass, the CSM was, by the time we got the antenna squared away. The rest, I'll never forget, I was sitting in that room when they were doing it, and I was so worn out. I went to sleep. I didn't even go home. I just stayed there. Then we got up, and the rest of the time we worked. The main guys worked in the control center, but we were running all kinds of simulations and way to do things.

By the way, this is something we want to put on this, too. We brought the LM back, and LM had a nuclear weapon, well, it had a nuclear engine in it. We had to dump that. NASA never said anything. So on top of everything else, we had to dump that LM somewhere it wouldn't be any trouble, and we put it in the Pacific Ocean in that deep trough. In fact, I got a letter from DoE, Department of Energy, or whatever it was in those days, thanking me. We stuck it in there, and if they were going to sniff it out, they'd never see a thing. So that's where it is, is that big trench out there.

We separated it, and you could see it go. But you never hear that, and that ought to go down, because we had to do it. We knew we had to do it. We had a procedure to do it. But that made it more complicated. That just made the whole damn thing more complicated, bringing the LM back and then dumping that and then separating from the CSM. All those things happened just about the time we got the [unclear] feed.

So what we did, we were able to make that maneuver, and then we were able to shorten our—we made a midcourse after we got out of that. Of course, we kind of shot off. By that

time we felt like we could—we had a shorter time to get back. Of course, it just turned out to be a success because we all did well in the whole. That's why I says it's a high-water mark of my life, and certainly NASA's. But it certainly did take a lot out of me.

Right after that, I got, for some reason, doing reorganization stuff. I got transferred over to a science organization. Lunney got to be head of the flight directors. The whole thing changed after that, and Kraft became the division chief. I felt somewhat disturbed, because I wanted to be a flight director, but for some reason that didn't happen.

I did [Skylab] EREP [Earth Resources Experiment Package], and that was a good set of missions. Skylab, that turned out to be one of the most—I probably learned more doing it than anything I've ever done at NASA, the three years I picked up and did that on the remotes sensing. Now it's the Earth Resources Package, but I got busy. Of course I helped on the lunar stuff. I helped with [unclear] back and helped them do all the planning, and so I got to know all those guys. I didn't stay away from the flight dynamics. You can't. I mean, you go over there and talk to them. That was the end, Apollo 13.

I'd been on doing the flight dynamics job from [19]'61 to '70, so that's ten years of every manned flight, I mean the whole thing. So that's my story, and I'm sticking to it.

There's a lot of people that have talked about that thing. In fact, there was a movie made one time. I can't think of the guy's name. He came here to make a movie. He made a couple short movies for TV. Who was the guy that played in "*I Spy*" with that black guy? What was his name?

RUSNAK: I can't remember.

LLEWELLYN: He was the one that started it. I can't think of his name. He and I got to be good friends after that.

That first story was written by a guy that worked for PAO, that came to work for Public Affairs Office from the Houston Chronicle. He wrote the first—he wrote a bunch of stories, and he wrote that one. That's the one where the retro fire—my part died of a heart attack in the restroom. Did you ever see that?

RUSNAK: No.

LLEWELLYN: That's a kind of interesting movie. I saw it on a late movie one time. My wife asked me why I was sitting and watching that. I said, "Look, it's my movie. It's me." I lived—but it was really good. I'll think of that guy's name. Anyway, that's the end of that story, unless you want to ask me some questions about it.

Because that was such a turnaround, and then we worked so hard to get to find out what had happened so we could back on the program. When you think of the stuff we did like that, and made those kind of decisions with just a few groups of people and we stayed there and we actually did it. Once Kraft said, "This is it," we all—that was one thing about Chris, I mean Dr. Kraft. When he said, "Okay, this is it," we all went the same way.

That was a problem after Kraft got out of there. It was so many different guys with different—I wouldn't call them different agendas, but that's what they are, but it was difficult to get back to that kind of direct approach. "This is it." Nobody ever stopped and we just got it done.

RUSNAK: I did have a few questions about Apollo 13, if you want to—

LLEWELLYN: I'll be glad to do anything you want, because I know it.

RUSNAK: You mentioned that for you it was pretty clear that going on to a free return trajectory was going to be the way to go. You had assumed that the service module was dead. You couldn't use the SPS engine. Was there a lot of consideration by other people to doing the direct abort?

LLEWELLYN: There were, and I couldn't believe that they were even thinking about it there. We never did do it. We never discussed that. For that kind of case, we always were going around. You didn't have enough. It was too dangerous. But, no, there were people sitting there thinking it was still nominal until they could prove different, and we were wasting time because we were getting to a point that we were going to lose them. They could go around the Moon and we couldn't tell them and we couldn't give them the update. In fact, it was close as it was. It was close to tell the crew what to do. When we told them, they had to know what was happening to them. I forgot that part of it. None of that's ever written in anything, but they're bound to have known what was going on.

RUSNAK: The fact that Apollo 13 was, if I recall, the first of the missions not to be on a free-return trajectory, which I guess was dictated by the length of the flight—

LLEWELLYN: That's because we carried the Rover in it. We put more weight on it, and we couldn't do it.

RUSNAK: Were there arguments against removing it from a free-return trajectory in the initial flight planning for the mission, something perhaps seen as too dangerous to do that?

LLEWELLYN: No. We had already gotten to the point that we were taking a lot of risk. Remember, 12, we had a lightning strike that knocked the computers off, and I was way against doing that. We went on and we really launched and got it in orbit and updated those computers. We did that through a command system that was not built to do that. I was very hesitant about doing that, but we did it and it worked. I guess we had gotten very confident.

By the way, by this time you couldn't be any better than we were. I mean really, what else could you do after you got to the Moon and landed somebody and walked around and got back in and we brought him back? I can't even think of a second to that that's ever happened in the world since it began, history. That's got to be the biggest thing that ever happened. I don't care who did it and what they say about it.

What's the second is certainly not the nuclear weapon. That's not. I don't know what the second is. I guess that's the feeling we had and the spirit we had and that's the reason I guess we were trying to bring in new people and expand our jobs. That's what we were doing. Somewhere around between Apollo 8 and the time Apollo 13 happened, there were major changes in flight ops [operations] and, I think, the rest of NASA.

The first thing you knew we weren't going to fly any more spacecraft. I knew that. Seventeen was final. We was supposed to fly six more, which I couldn't believe. I really

couldn't believe we would do that. I used to say we had lost the best job we'd ever had. Whoever had a job better than that in the whole world? That's all I did. I went to work every day to go to the Moon. Everything I did, all the stuff I did, I was on one of those computers, how many times—we had [IBM] 7094s working a push-pull. I'd just walk over there if I had a problem. I'd just go over there and call the computer sup [supervisor] up and ask him his time. He's say, "Sure, I'd be glad to run that." I used to sit there and run these. I had displays I could see. I had the first huge PC [personal computer]. Not only did I have, but all of us, not only I got it. But the flight dynamics was in good shape because we had probably the most dynamic stuff in there because we had the most dynamic job. That stuff was tied to everything. We'd stick a vector in there and run anything.

If something was bothering me or I was bored or something, I was really worried about the lunar aborts. I used to go away by myself at night and run them. Sometimes I'd get a crew over there to get in a simulator and do it. Lot of them would like to do it because they were worried about it, too, because you could get yourself into some of those things that's really hairy. My god, I couldn't even sleep thinking about that.

I think that's what—and I don't even know why I said that, but we were feeling pretty good at what we were doing. I guess you needed that to pull 13 off. If you wasn't up and you didn't have the kind of people, we had everybody there, we had everybody in the world trying to help us, all the aerospace companies, everybody I knew were thinking about it.

And then when it was all over, it took a long time for 13 to really make any sense to anybody, didn't it? All we did was try to get it fixed and get it back. We didn't think about what that really did. It sure didn't change our simulations. We never did that one in simulation,

and we never did one before that either. We had loss of voice and stuff like that to just, but that's it. Anything else?

RUSNAK: I guess that was all I had on 13 specifically. In the course of our discussion, you've mentioned a couple times how mission controllers really changed by that time since the beginning. I was wondering how your position specifically had changed or evolved as the programs went on.

LLEWELLYN: It had gotten very complex. Remember, we had gotten into onboard computers and had gotten into platforms. You had to know that. That was something that the old flight dynamics people didn't know. That was generally something that all three positions used. The guidance officer was responsible for a lot of it, but the [unclear] people, the rendezvous and the flight dynamics people, certainly had to know how the launch did and the abort stuff worked. So we spent a lot of time doing that, because, remember, that was all brand new. We were still inventing computers then. Gemini had the first one. We had learned how to look at the telemetry from the computers to compare inches. By that time it just took a whole new set of data.

The other thing is, by just doing the lunar flight, the sophistication for the math and the physics and the classical gravity stuff had disappeared. We had all kinds of things that made the equations. We had that lunar dumbbell thing, it doesn't have a center of mass like the Earth because we've got a metallic core there, they don't have one. That Moon is made of the mantle of the Earth. All the data we had, nobody had really gotten what the potential mile is. The potential mile is what the mass itself does to physics, inertias, and all the things you do. Every

time we solved for a maneuver, like a return to Earth, it would change every vector we got in. It was really, really concern for how we did that and did we have the right ones. That thing went up in all three positions.

I think the whole control center was going through this thing. Remember we had a very complicated ground system we had to know, what command systems now, we had telemetry, we had new ways of determining vectors. Because of that, I had developed an ACR, auxiliary computing room, and I was about the only one that had one. We had some really good people.

You might want to call Mike [Michael A.] Collins [Jr.] sometime. He worked for Boeing. He ran that thing. I'll tell Mike to come. He could give you an insight on that part of it, anyhow.

You just can't imagine how much work was done, because just to support the flight dynamics officer and guidance officer, we had a backup guidance officer, people back then. In fact, [John R.] Garman used to be back there. He's the one that had to bail us out on that call for the lunar landing. We had people from FSD [Flight Support Division] that helped us with the trajectory. We had, gosh, good help, I did, from TRW. Gosh, some of those people, Lee you might want to talk to him. Maybe I can get a hold of him, Lee from TRW. Those guys really—and TRW developed the return-to-Earth trajectory and that whole thing, the program. In fact we were running that thing offsite for a long time, '68 we went to the Moon, and in '69 we landed.

That summer of '68, we'd started running that stuff before we even put in a real-time system. So, for a flight dynamics officer, he had a whole lot of stuff to do. But for the reentry guy, he had all the abort stuff. We almost had guys doing different parts of it and that's all they did. When they got to the point, like I ended up, only doing launch and abort phases, that's

what I ended up doing. The same thing with the lunar stuff. Then the guys took over with the orbital reentries. Chuck [Charles F. Deiterich] took over the ones.

Anyway, it became very complicated, and it got to be that it was so much going on. Remember, those computers in those days were not that reliable either. It wouldn't take a whole lot of them to make them go down. You had to have backups and you had to have people checking the numbers you had, because we'd made mistakes. Programmers and people make mistakes. If you run a number in one machine and somebody runs a number in the other one and they don't match up, then something's wrong. Now, there are some differences in their program, but we already knew what they were.

So that's what we did, and it was very good, because that's who did a lot of the stuff, backup numbers that day, that night I got in on 13. Those guys ran those things. Every one I ran, they ran. They ran different ones. They did all kinds of parametric studies to see is this the only way to do it. So that was something they could do real time, plus the fact that I had a big company to work with.

The real-time system was the final answer. Never forget that. That's what we did. But it had gotten very complicated. In fact, it was very, very—the flight dynamics did get all the pieces together. We had by that time more vehicles to deal with and that's more propulsion systems we had to know. Not that we knew it, we had good guys doing it, but we had certain key things like when the actuators were set different ways and what the attitudes were because we wanted to check them ourselves.

In fact, did you see that guy with the slide-rule in the movie? That was me. I used to check gimbal angles, because you could check gimbal angles with a slide rule. The attitudes of the spacecraft respect was all geometry, and geometry was very clear. You know how clear

geometry is. If they were right, then I knew the answer was right. So that's what I did, I used to back up and just made damn sure, because we were doing some fairly very difficult computations. We would integrate that bearing once we got it all the way in. That's an integrator, not—I kept learning. It took a long time, and when you think of the kind of computers we had, you just sat there, and nobody else did anything while I did it, either. It was that kind of system.

Anything else I can help you with on 13?

RUSNAK: Not that I am coming up with right now.

Since you were speaking of computers, that reminded me of an episode that Gene Kranz recalls in his book, where after you had left flight control, how you and Jack Schmitt and some other people were working on these plans to land on the back side of the moon and he discovered your request for computer time and that kind of thing.

LLEWELLYN: Yes, I did that. That was the other program I looked at. I didn't think they knew that. Yes, he did put that in there. Yes, we used to do that.

RUSNAK: I was wondering if you could tell us your perspective on working on this, how you became involved with this little group, the kinds of things you were looking at.

LLEWELLYN: It turned out it was really great group. But when I got on that, by that time I was well known. We used to have meetings. Jack [Harrison H.] Schmitt and a great group of guys, and I can't remember them all, we used to have meetings and kind of get together two or three

times a week at his house. We'd go over there and talk, even at NASA, but generally we went over to his apartment somewhere and just kind of brainstormed stuff. This is something he wanted to do.

The other thing that Jack wanted to do was show—because Earth Resources was coming up, and he did a good job, the first thing we'll do is get on the back side of the Moon. He just wanted to show, and he wanted to go to headquarters with this and how we could do it and based on the stuff we had taken pictures of and like that, so we did do that. We worked on it, and it never got anywhere, of course, because it just went. All of a sudden, NASA stopped doing what we used to do. I don't know if it was headquarters. We just didn't have any say anymore from JSC what to do. Kraft kind of still did what he wanted to do. We couldn't get things done. I mean, they stopped it.

The thing we did do that he did a good job, and I got time to do it on it, is that what he did, he took a picture of the Earth. As soon as he got in orbit, he turned around and looked back at the Earth and started looking at weather patterns. He took different pictures and took notes of it, and he had that for me to use. Then he's the one that says this is how you can do real time with a guy aboard, that you could real-time weather prediction and make some real sense out of it. And that's what he did.

But the good thing he came out of it with, and I'm going to say it, he's the guy that took the first picture of the Earth at lunar distances. Remember that? Remember the one that's always there? Nobody's ever done it since him. And you know why? Because nobody ever wanted to look at the Moon, because once you got in close, that's all you could see. If you're going into that thing, first it's just small, and all of a sudden it gets bigger and bigger, and usually that's the only thing you see. You don't really know that you're going to miss it or not.

So that's why he took that picture and he did a good job with that. That was a really good project because it was written up and well documented. [Tape recorder turned off.]

LLEWELLYN: Yes, we did that. I also did stuff on the Viking. I did that, too. We tried to get the Viking program here. We almost had it, and Langley got upset because they thought we'd take over. That was a good program. I'd like to have worked that one, but that didn't happen. '76, right? I was in Belize then.

RUSNAK: You mentioned that after leaving the control center, your job was working with the Earth Resources Experiment Package [EREP] related to Skylab. Can you tell us what some of that involved?

LLEWELLYN: Oh, gosh, that was great, yes. I really fell into that. I don't know what powers-that-be gave me that one, but Jack Schmitt probably had something to do with it. I got to be in charge of the Earth Resources Package on Skylab, which was not even one. It was a latecomer, and we had a lot of work to do. We picked six instruments, and there was a camera system, a scanner, and some radar stuff and some kind of like what SAR is, synthetic aperture radar. We had the first kind of one there. We did a lot of good stuff like that.

The first thing, we had to do all that and to learn that systems, of course, I had to go like a system animator, make drawings. I had all these new guys I picked up. They were really neat guys, a lot of guys right out of college that were physicists. A bunch of them were right from here, homegrown. There was a couple from U.T. [University of Texas, Austin, Texas], but one

of them, a really bright guy, from the university. University of Houston had one. Then there's another guy, I can't think now.

But we got most of the young guys to be flight controllers that were physics students, which is good because those guys knew everything. They knew all about lasers and they knew all about quantum mechanics, and a lot of stuff that I had kind of gotten away from physics and we got back into it. So the first thing was learning the ground system and telemetry and put that together.

But the thing I enjoyed was the selection of the principal investigators. I don't know how many that we went through, but we finally came up about 300. I think that's what this thing was. Just going through those things and reading them and then interviewing them and talking to those kind of people, you just can't believe how much your conscious expanded. It was every day.

We had courses in different things like how small scanners got their data. So we had guys telling us how you reduce it. It was just another well-rounded position, and it kept me busy. In fact, I got more involved now than I really did as a reentry guy. After 13, the thing got kind of—we hardly ever had any trouble anymore after that. We had an astronaut that had a heart attack or something like that. Has anybody ever brought that up?

RUSNAK: Was that the Apollo 15 crew, where they had the heart problems?

LLEWELLYN: Yes, yes. I was just wondering about that.

Did anybody ever bring up about the guys that were supposed to be in quarantine, and the girl? Did that ever come up again?

RUSNAK: You mentioned that very briefly at the end of your last interview.

LLEWELLYN: I want somebody else that was over there, that was responsible for it.

RUSNAK: You suggested that we ask Chris Kraft.

LLEWELLYN: You ought to ask him what he thought about it.

RUSNAK: We can put that one down.

LLEWELLYN: Did you ever talk to Doctor [Charles A.] Berry?

BUTLER: Yes. Chuck Berry.

LLEWELLYN: He's a guy that should know, because that was his crew that got involved in all that.

BUTLER: He didn't mention that, but we have talked to him once.

LLEWELLYN: They did the same thing on the ship coming back from the first lunar flight. The guys were supposed to get in some kind of a—looked like one of those small house trailers. Everybody got so excited about seeing them, I think the Marine guards and everything had to go

in there because the guys tried to get through the line. I just remember all of that on that. The quarantine really didn't work. That's what's so out of it, all that money and time sometimes. I don't want to get into that one, but I just thought about that the other day. I wonder what the lunar Mars thing will be like, wonder what they'll do.

RUSNAK: That should be interesting to see, and how much they build on the experience from the Lunar Receiving Lab and the procedures they developed for coming back from the Moon.

LLEWELLYN: I think they'll start doing it when they get serious. I don't think they're serious yet.

Yes, that was a really neat job. We did a good job on that. That Earth Resources thing turned out real good. It's too bad we didn't have a way—and still, trouble with NASA is how you sell distributed data. We had so much of it, and it just never was put into products as something that people could use. It's one thing having data, but data is like anything else. We talk about content on Internet. If it's not put into something that's useful, then nobody—most of the stuff that we were doing was so esoteric, nobody knew what we were doing anyway.

I used to get around and talk about having remote sensing and doing it. Everybody used to look at me like, "This is a sim [simulation]. What is he talking about?" I'm not kidding you. I couldn't go—I mean a lot of people, smart people, other engineers. We'd talk about stuff we did, and they'd get like they were bored or something. They wanted to switch channels or some damn thing. But it really was true.

I'll tell you one thing. JSC had more remote sensors. We were the remote-sensing capital of the world. Those airplanes that we had, every bit of remote-sensing data up until

lately was done by NASA. Every bit of it. That's something we ought to get—that's a really good program. [JSC Director Robert R.] Gilruth started that. We finally got rid of it—not rid of it. I think Kraft wanted it. That became such a huge thing that somebody else ought to do it. When Reagan came, he went ahead and commercialized all that stuff, supposedly, but nobody ever picked up on it.

But that in itself, that NASA did is almost—we talk about communication satellites that NASA did and finally got [Thor] COMSAT [communications satellite] started as a spinoff, and look what that's done. That's what I do today. I'm in the telecommunications business. I'm in the satellite business. That's what we do. But the remote sensing thing, we did that. This right here did it, because the Air Force didn't do it. They had cameras. Since we didn't have a way to dump film from cameras and catch them with airplanes and all that stuff they did, we came up with a way to take pictures digitally. That's what the whole thing started.

RUSNAK: Was it your Skylab Earth Resources experience that led you into doing aircraft operations?

LLEWELLYN: Yes, I got that both at one time. George, Mr. Abbey, asked me to go over and look at the aircraft ops and what we could do with that because we needed to do that to calibrate our EREP data, so I got involved with that. Then I went back out there after Skylab. They sent me back out there to aircraft ops to do all that stuff. It was a good idea, but I decided that I couldn't handle doing this kind of stuff. I went down and ranched.

I mean, I know everybody must have gone through something there to make the turn from doing the lunar stuff to what they started doing. I don't know if anybody else talks about

it, but I just couldn't do it. It was like going to work and doing nothing. Have you ever had a job like that, that you had to make out like you were doing something? I hate that. I just can't handle it.

RUSNAK: You mentioned last time that after going down to Belize, you came back here to work on the Shuttle Program.

LLEWELLYN: Yes, I did.

RUSNAK: What kind of work did you get back into?

LLEWELLYN: When I first came back, it was neat. I got back and I worked in what they call LACIE, Large Area Crop Inventory [Experiment], which I just left, and it was really a neat program. That really was. We did the wheat thing all over the world. We started off saying that we were going to do it, and this is a typical State Department way to do things, to make sure the people were living up—I forget these kind of things, I forget the name of the thing because they made a big issue. If you said you weren't going to plant but so many acres of corn, they had no idea how they could measure that, so that's what we started doing. That's what we started doing. I guess it's some kind of [unclear].

But it didn't take us long to know exactly what they really wanted to do was to find out where all the wheat was in the world, because Russia had done a little trick on us during Nixon's thing. Russia went ahead, because they knew we had all this wheat and stuff, they went ahead and put all their money into beef and cattle thing. What happened is that when it did that,

it took the wheat market down. No, it took our beef market down, but wheat was so cheap. That's how they did it. They got it two ways. They got us both ways. They were clever.

Since there was so much, we had abundance of wheat and we grew so much of it, and then at the same time they had so much beef over there, they could get the wheat cheaper than they could raise it. They did it and sold the beef, and it ruined our cattle market. I don't know if you remember that. It was in the seventies when that happened.

Then that's what we started off as, was compliance. We said we were going to make all the farmers compliant, but it really got to the point that what we wanted to do, could we actually tell from a worldwide deal what was the wheat crop. Once you could do that, you could do it for anything, right? In fact, I'm not so sure that we didn't start the—I don't know if you know what you do. You look for a signature. Everything has a signature. Did you know that? It's a wavelength against energy. You reflected energy. Everything has one, wheat, people, everything. That's what this thing was based on. That was really interesting. And we had the Foreign Agricultural Service working with us, which was, I'm sure, not—and we actually did some really good work on that. That was a good job.

Then I went away, and then I came up with a position in Lunney's organization, was called [unclear]. That was before STS came along, at that group. What do you call it? Space Transportation System. It was an early part of that. When he brought the two things together, the Shuttle came together, it was called STS.

But what I did was a really neat job. I had all the expendable stuff, the payloads. That's when I learned so much about communication satellites, because most of them all in those days were commercial satellites, communication satellites, very few free fliers, had some DoD [Department of Defense] stuff that I didn't get into because I didn't want to go through all that

DoD evaluation again and take all those tests. I just got tired of that, and, besides, I don't want any more. I don't need to know any more need to know. I've had enough of it for one life. So that's what I did, and I really did that, and I really enjoyed it. I really did.

I just realized that NASA wasn't the place for me, because I think I had lost my class, you know. I came back and I joined another group that was coming through, and I don't know if that makes sense or not. I just never caught up. I felt like this is not any—so I just resigned and went and got my own company. Doing good.

RUSNAK: What kinds of things have you been doing since?

LLEWELLYN: Well, I did all kinds. I had a company. I had my stuff in Belize, the ranch. I went back down there after I resigned from NASA and did ranch for another couple years. This was a big ranch by this time. I have a big, big place. If I told you how big it was, you wouldn't even believe it—16,000 acres. I'm probably one of the biggest landowners down there. I'm in a lawsuit over it now. Again, things change. Strange. My partner's sons think I'm not supposed to have all that. Greed gets everybody.

But I've still got my businesses down there and all that. In fact, this latest hurricane just about wiped it all out. I'm going to have to start all over again. The hurricane just ground Belize down.

RUSNAK: Yes, we saw that in the news. We thought of you and your businesses down there.

LLEWELLYN: Yes, kind of got to get started over again. In fact, I'm going there this month. We finally got back where we got our electricity back and got a chance and now it's started. No sense going and getting involved with the guys who are doing that and trying to start new businesses and see the bankers and stuff like that.

Then I had a company, a real good company. Star Technology and Science, I call it. That started in about '54 and ran to '56. I own two satellites. I bought those two satellites that NASA picked up. So I had a good company. The only thing wrong with me is that I really didn't realize what was going on when you get into high finance, borrowing money and putting big companies together and doing stuff like that. That whole bunch of people in Manhattan are really bad. The commercial world is a very interesting place. It's not like anything else. It's a bottom-line deal, and it's just different. You've got to learn how it works. It took me some time to do that. In fact, I lost my money. I lost everything.

After the *Challenger* [51-L] accident and then we had the whole thing, I had so many invoices out, I had everybody in the world looking for me. That's a real story there, trying to get out of that mess. What was lucky about it, I was the first guy to go to China, to get a China launch vehicle. I had these two satellites, and they cost me \$10,000 a month for bonded storage. Jesus, that's enough you can't sleep at night, especially when you're broke.

I went over and got the Chinese—got all involved in a Long March [rocket], too. That's a different story. I used to come back here. People used to call me a Chinese—what did that guy call me and I got really angry? A “red Chinese fag,” or something like that. I said, “Man.” Because I was over there. All the free world, our side, none of the missiles worked. The Shuttle blew up, that Lockheed thing went down, Titan, whatever it was, then the French thing [Ariane],

they had two losses. We didn't have anything. So I said I'd known about it, so I just went over there, and I was the first guy over there. Well, that turned out okay.

After I lost everything to big business, guys would come in, and one of the things you do, you get in something like this, people get into your company and they start owning—different deals and majority, they can do what they want to do. That's some cash calls all over. So if they can get you out.

But that turned out, what happened was that I got hired by a company in Shanghai to represent the Great Wall. Wasn't that great? So I had like almost a year of nothing but working for the Chinese. Probably I know Long March 2 better than most "round-eyes" ever. I know that thing. I went to all the meetings and stayed over there. That was a really tough one, but that allowed me to get out of this other thing.

I've always done well. I've always worked for people. I went all over the world on these communications things. There's hardly anyplace I haven't been. Uzbekistan, [unclear], and I just don't know all the places I've been putting systems in, plus Central and South America and China.

Then I started with these others guys at Skycom, and it looks like we're going to do well with that. It looks like we're going to take it public, and I've got some stock. I might just come out pretty good.

RUSNAK: When you were working on satellites in China, did you work with Don [Donald D.] Arabian out there?

LLEWELLYN: No, I didn't.

RUSNAK: Because I think he had mentioned, I don't know if it was a similar project or some peripheral involvement with this same one, but he had told a story about ending up out there working on some satellite project.

LLEWELLYN: No, I always worked with communication satellites, and I don't remember Don. I knew of him. Gosh, Don used to be a flight controller, a systems guy at the Cape. Arnie [Arnold D.] Aldrich took his place. Yes, I remember that. Then he had a bad wreck, on 517 [Farm-Market Road 517], I believe. That was about the time of Skylab. Head-on collision, I understand. How's he doing?

RUSNAK: He's doing really well. He's living down in Florida by the Cape, building a boat.

LLEWELLYN: Yes, he was always something else.

RUSNAK: We've heard some stories about him.

LLEWELLYN: No, I really did get into that thing. In fact, I helped him build that launch satellite, that LLMC that went on the Tibetan border. I was really new about that one. I don't why I didn't see him, but I saw a lot of commercial guys. I met a lot of them, the Hughes guys and what was Loral now, they were Ford Aerospace, I knew all those guys because they still were there. I worked for the Japanese, too.

RUSNAK: We've covered quite a bit of your career in the several interviews we've done here. I don't know if there are any segments that we've left out that you want to talk about.

LLEWELLYN: No, I'm just glad that you wrote me, and this can be the last one. I don't have much more to say.

RUSNAK: I guess the only thing I wanted to ask you about, if you wanted to talk about it for a few minutes, are some of the stories I guess that you become famous, or infamous for. Everybody we talked to that's known you says, "Oh, you've got to ask John Llewellyn about this or about this."

LLEWELLYN: I'll be glad to do that.

RUSNAK: So if you just wanted to comment on some of them for a few minutes.

LLEWELLYN: Certainly. And I do remember the one about—but I didn't think we was supposed to talk about that. That was kind of a DoD thing on that, the one about Jack Schmitt. Where did that come? Did that come in the book? I missed that.

RUSNAK: Yes.

LLEWELLYN: I'll tell you, that book of Gene's [*Failure is Not an Option*] is not bad. Of course, I've got to say that. I don't have to write a resume the rest of my life, I just say, "Get the book."

RUSNAK: That's a good point.

LLEWELLYN: But he did a pretty good job of writing. I didn't know he could write that well. I think he did a very good job of turning that thing around after the AS-204 or whatever Apollo that thing we called it [unclear] because I think he's right. I think that was the first time we all realized. I mean, we had had some really cliffhangers with Gemini, but that was the first thing that we were and we could hear it all and we couldn't do anything about it. I think that's the point he made, and I think everybody stuck in mind and made sure that no matter what we did, we'd have a way to do things. I think he set the stage for the way I handled 13, having that book available.

RUSNAK: His book has certainly been a valuable resource for us in preparing for interviews and finding other people to talk to.

LLEWELLYN: He did pretty well at it. He picked a lot of things up I had forgotten all about. That thing with [Alan B.] Shepard [Jr.], I had forgotten that.

RUSNAK: One of the recurring stories we get, and I think it even made it in his book, was the one about you getting your parking pass revoked and having to do the horse. I was wondering if you could give us your version of the events that happened there.

LLEWELLYN: Sure, I'll be glad to. It started with GT-8 [Gemini-Titan 8], and that was the one where we had the first dock burn. Since we launched the manned part of it later, I didn't have to come in until late. When I got here, there was no parking places. In those days, I hadn't got a pickup truck yet, so I had a [Triumph] TR-3. I don't know why I did this. I really don't know. But I got so berserk and I was getting late and I didn't want to be late for coming, I don't know what I did, so I drove my car up over the pavement. You know that thing between Building 30, it looks like a medieval castle, you know, crank it down, and it reminded me of some kind of fort that would drop and wouldn't let anybody out of there.

Remember those things that stick up in front of windows? Right under that I parked my car. It wasn't too bad, because my office was right above it, and I used to be in an office there. We used to have those offices, the flight dynamics program did. I don't know why I did it, and I didn't think. I knew it was a little out of it, but it was not any more out of it than the things we were doing anyway. I thought as soon as this thing got over, I was going to get a chance to come back and move it. I really did.

This is like 10 o'clock. Generally, things like that, it doesn't get noticed until about 1:00, because people go to lunch. At first you see it, and you don't think about it. Sooner or later, my secretary started calling me, about 1 o'clock. This was really getting—we were getting really into this thing. My job was getting longer and longer, because even though we had the handover, things were not going well with the docking and this. She said, "John, you'd better get over here, because I see all these policemen out there looking at your car."

I said, "Don't worry about it. Go down there and tell them that I did it, and I will move it."

Then, finally, the thing happened, and she says, “John, I think you’d better move it. Dr. Gilruth is down there.”

So what I had to do is I went down there, and he’d gone, and I took it and moved it down to the thing. But did give me a ticket. So I didn’t pay any attention to it.

Then we had GT. Do you remember that? We brought him in. Remember? And did all that. I took the thing home, and I saw this ticket, and I said, “Mary, this is too much.” I went by the next day, up to the guy, and said, “Look, somebody scraped my goddamn ticket off of this thing. You know they’re doing this over there for some reason. I guess they steal these stickers. Can I have another one?”

He said, “Sure, John, I’ll give you another one.” So I got another sticker. That was what started making everybody mad.

First thing, I parked. The next thing, I had no sticker. I was running around for a sticker, and all of a sudden, they brought this up in a meeting one time. Kranz was over there talking to everybody. I forget who was running all the administrative stuff, somebody. He said, “Look, you come over here to tell me that we can’t come in the VIP room and all that, we got a guy that we want to get. He has parked his car on the thing. He has violated. He went back and got another sticker. He’s riding around here.” So the argument got going on in this thing, and that got Kranz mad because he felt like he had to do something about it.

So he kind of got in it, and then it didn’t do any good to me, because it just got worse, because I said, “Who cares, Kranz? Who are those guys?” And all that crap? So it had gotten into that kind of posturing. So they decided that they were going to not let me have a sticker for a month.

I said, “How is this going to work? How am I going to get to work?”

Then they said, "We don't care."

So I went through several ways of doing it. By this time I had gotten a pickup truck, and I'd park over in Nassau Bay and I'd walk over. Sometimes I'd try to get a ride in. The guys made it like, I'd be out there thumbing, and they'd make it like they'd stop, and I'd run down the road and everybody was laughing. This was driving me crazy.

I forgot what else I did. I did something else. I forget what I did. It was almost childish, like we had some kind of a rent-a-cops playing around in this. I got it extended or something. I bought—remember these little bicycles that had the little small wheels? A big wheel. My kids had them. So I rode that in, and I kind of got in everybody's way with it. Not everybody, the guys—anyway, this thing went on and on. It really got to be a hassle because I'd have to get a ride out in the afternoon.

One Saturday morning, we had what you call a wet mock. This was probably Gemini IX. The crew is in and you take it all the way down to T minus 3. You do fuel and everything. Takes a long time to do it. I was on the launch team, so I came in. I brought my horse over in my trailer, and I came in, I guess about 5:30, 6:00. I rode him through the gate. They had a guy on, and I used to know him, he was pretty good. He said, "Llewellyn, you can't ride a goddamn horse in here."

I said, "It's a Farm to Market Road, FM, road. Don't tell me I can't. You ride horses anywhere you want to," because I used to know him. He's a black guy. He used to run cattle. I knew him. He said, "Go on Retro," and besides, he was on Okinawa with me. He was a Marine, and he was stationed there when I was there. I didn't know him too good, but we'd talk. He says, "Go on through."

So I parked. I took the horse up there and unsaddled him and tied him to that thing by the generator. I went on in. It was right in front of it. It was right—you couldn't miss him.

I was sitting in there and I guess it was about 8:00 o'clock, and Gene comes in screaming and hollering. "Whose goddamn horse is that out there?" You've got all these people around looking at him, and, god, they had all the cops. I got up and said it was mine. He said, "How come?"

I said, "I couldn't get to work and this was very important." I start all that out, but he couldn't handle it. Everybody was going berserk. How can I get to work, it's the only way left, and you can ride horses. That just made everything worse.

The good thing I did is, I went back and I had to go get my truck to bring it in to get the horse in it, because they wouldn't let me ride it out. So I loaded him and took him back out there and stuck him in it all until I got through. But that was true. I did it. It was so berserk. It was a berserk.

Let me tell you what happened. They gave me another, I forget how many more weeks, because of this. It was kind of like, I'm saying how can I do it, but I finally got through it. I really did. This is funny. It's a funny part of the story.

Dutch [Manfred H.] von Ehrenfried, have you talked to him?

RUSNAK: Not yet, but he's on the list.

LLEWELLYN: Dutch and I, he had just bought Shepard's [Chevrolet Corvette] Sting Ray, one of those 1964, the first ones that came here with the plastic point. He'd gone all the way to the Cape and got it. He was so happy and it was just beautiful. He was one of those kind of guys

that wanted to be like the astronauts, wore Ban-Lon shirts. It was raining, and my last night, and the next day I could drive in. We went out and we were riding out through the thing, and damn if he didn't run into the guard truck. The guy pulled out, and he pushed his brakes on, and he ran into it and broke the nose off his bird. He was going crazy. It was raining. When that guy, the guard, saw me jump out, he said, "I knew it was you. I knew you're the one behind all of this." It was so funny. No kidding. It was the funniest thing. In fact, I laughed so much I could hardly get up. I couldn't believe it, the way it turned out. I mean, I'm not making it. That's really the way it did. To this day I can't believe he did it. And he can't believe it. Ask him when he ran into the guard truck.

RUSNAK: We can do that.

LLEWELLYN: He didn't charged, but it dinged his car. That was the end of the story.

I understand that George Abbey said when I left NASA the first time he went to one of those interdivision things in Building 1, he brought up to the guy who was ever running, he says, "Now I think that you can get rid of a lot of these rent-a-cops because Llewellyn's gone. You can get rid of half of them." That's what I understand happened. They said, "It's all over, man." That did start up. That did do it.

I do think about that. The one I can't understand, I was walking. One day I was over there and it was kind of a nice day, and I says, because it's changed, "I want to go back to Building 30 because they've got that—" You can't really tell where I did it because they've got that glass thing. I says, "God, I can't believe I did that. I really can't believe I actually drove up and left it." It was really out of it. It's a really out of it deal. To me, it's funny. It was funny

when I did it. It wasn't funny the way it turned out with all that, but then it turned out okay, too, because it had the horse incident and then it had Dutch driving into the OD, which is great.

RUSNAK: That story seems to be the one that most of the people remember that involves you, so it was memorable for quite a few people.

LLEWELLYN: Oh, yes, why is that? It's another day. But there was a lot of stuff we did. Did anybody ever write—too bad you didn't get a hold of Mel [Melvin F.] Brooks. He just died.

RUSNAK: We did actually interview him.

LLEWELLYN: Did you ever go through him about that Hatch Act thing?

BUTLER: It didn't come up during his interview. Unfortunately, we only had one day to talk to him and had a lot to cover. We didn't get a chance to talk about that part.

LLEWELLYN: That was another—not only all the other stuff we did, but that turned out to be a long drawn-out thing. I don't think many organizations have had that kind of thing going. Has anybody ever talked about that?

BUTLER: No, we haven't gotten much on that.

LLEWELLYN: Lunney never mentioned it? He didn't get in it?

RUSNAK: No.

LLEWELLYN: Kraft?

RUSNAK: We haven't talked to him yet. He was waiting until his book came out, at least, to talk to us, which it should be out in a month or two, I guess.

LLEWELLYN: But that was kind of interesting how that happened. Again, it was kind of interesting that, remember, NASA was conceived right in the middle of the cold war. We had Korea and we'd really gotten warmed up, and in fact, Shepard's flight was during the Bay of Pigs because I was down there when it happened. I was on it when that thing happened. We were right in the middle of the whole thing, the Lebanon, all that stuff was going on. Of course, we were in the middle of all the other [unclear] stuff, the hippie movement. We got in the middle of that thing and, of course, we just did it. All that was going on, and then you had the anti-Vietnam War thing. We were never that. We were staunch conservatives, most of us were.

But out of that thing, I've lost track of him, but all of that stuff all kind of got back into what we were doing, except it never bothered us. You know, none of us ever really did anything but think about our jobs. None of that ever got involved. We kind of insulated ourselves. We knew what was going on, but we were so into this thing, we didn't see it. But we would catch things like this Johnson—when the Hatch Act things came up, when [Barry] Goldwater ran for President, that's when that thing came up, because that was such a—it really did show how people were thinking between Goldwater and Johnson.

Those things kept coming up like that, but it was all interwoven in going to the Moon. We never did ever think about anything but that. We never let any of that ever—because you had all that stuff [riots] in Watts [California] and then you had the thing about the shooting of those people at the colleges and all of that was. Then you had Martin Luther King getting wiped out and [John F.] Kennedy, and all that stuff seemed to be in it. But we always kind of kept on doing what we were doing.

It doesn't seem like it's like that anymore. It seems that NASA's gotten really political by its own—because of what it did and how it is. But it's a lot more political and gets more involved in those diverse things now than they used to be.

RUSNAK: We've heard from a surprising number of people very similar sentiments about how this area was insulated from these things that were going on. They were still aware then, but just the impact I think that it had on the rest of the country was lessened here because of this focus on going to the Moon.

LLEWELLYN: Because it was so positive. Because all that other stuff was, to me, negative. In fact, I was wondering why it even happened. I didn't see any of that. But you can't say we were insulated, because we were all over the world. The guys that maybe worked in engineering might have felt it, but even they—I mean, we went everywhere. I was on remote sites teams that went—and that's probably one of the best jobs that we went to that you could possibly have. I went all around the world. A lot of guys did. Most of the guys came in to work for us were those kind of people, they'd been everywhere and done everything just to be

here. I think we were insulated by our own dedication, if that makes sense. I don't know if it makes sense or not.

RUSNAK: Yes, it does.

I wanted to give Carol a chance to ask some questions if she had come up with any.

BUTLER: Just two. My first question is, how much did your work on the Earth Resources impact your ranching work?

LLEWELLYN: It did a lot. It opened my eyes a lot. In fact, really, I probably miss that more than going in and working like that. In fact, I sat down at night and wrote a lot of stuff on infrastructure and why that kind of thing that we were doing there wasn't going to work, on my own, without this whole thing about knocking the jungle down and putting cows on it and all that. It's just not the kind of place to do that, and everybody knows that. Not unless you get near a river bottom or something where you've got a built [unclear]. Most of that stuff, and I can't even remember all the words now, but once you chop it down, it doesn't have the humus like it does in cooler climates. But the infrastructure itself, Belize just didn't have any. I mean, we didn't even have a [unclear].

What could I do about guys stealing cows? I had to do it myself if I was going to do anything if we had cattle sales. I sold all my stuff at [unclear], but based on all experiences I had to that, yes, it did. I thought a lot about it, and I took a lot of pictures of Belize because I knew I was doing it. I did become very interested in the stuff in that part of the world in the tropic conditions. I really did.

BUTLER: What had led you to Belize in the first place for ranching?

LLEWELLYN: A really strange set of things. I had a really neat life here in Houston, really, when you think about it. Not only did I have a good job with NASA, and I really did have one. There couldn't have been a better one. I had started kind of being a cowboy. I started kind of late, but I always wanted to be one, so I got myself a horse, a good one, and started roping, one of these little jackpot ropes around Alvin. Alvin still was a cattle town then. I mean guys still rode their horses into town, even in the early sixties. It was still rice, oil, and cattle, and it was easy to do it. Guys liked me because I was different, but I would go along with all that stuff.

So I started working cows with them because that's how you do it. You could get paid if you had a horse, you'd get so much a day. I had some time. I could take off and do that. In the spring, it's just beautiful here in Texas in the spring, especially down on the Gulf coast. It's all grass. I kind of got into it that way.

The next thing I did since I was fairly—I had a way to borrow money and nobody else did. Most of these guys worked in—they were either pole climbers. They had all kinds of jobs. They worked for the chemical—whatever you do here, welders. But I had a leg up on them. I could actually go to the bank because of what kind of money I was making. I could actually buy stuff. So I started leasing land and running cows on it so I had my own thing. Then I got in with a guy who was a dentist and he did the same thing with me. We started doing that.

The next thing I did is, it didn't take me long. If you're a rancher, it didn't take you long to know that you've got to learn how to work on all kinds of equipment and be a welder, and I knew a little of that. So I got me a welding shop, and also I had a place I could work on tractors.

I wasn't doing it all, but I had guys mowing hay and stuff like that. So I kind of had that all going plus my job.

Now you've got the picture, so you had to know that much. One day I was up there right after the lunar thing and I had some time off after Apollo 11. This guy came in and he says, "I've got a one-ton Ford truck I'd look to put an oil-field bed on." I said, "Sure." I was there with the welders, because if you didn't have something for those welders to do when it was raining, they'd get—don't ever go in those days south Texas when it was raining for three or four days and those guys have been drinking beer, because it's all over, man.

So anyway, that's what I did. We were doing stuff in the shop when they wasn't working. So, sure, and we got to doing it. I said, "Well, where is this truck going?"

He says, "It's going to Belize." British Honduras. They didn't call it Belize at that time.

I said, "Is that right?"

He said, "Why don't you take it down there for me? I don't want to take it down there. Besides I don't like going through Mexico."

I says, "How much money?"

He says, "I'll give you whatever expenses."

I had some time. We had all that time that we never took. In those days, you could—so I said, "Okay." So that's how I did it. I had some time between 11 and 12 that fall, because in July we didn't do anything. So I just kind of took off and took the truck through with some horses. That got to be a real long involved story. But I got down there and I met some guys.

Belize is just beautiful. This place was like the U.S. was, must have been fifty, sixty years ago from the sixties. So it was like turn of the century. People had big ranches and there was hardly any roads. It was just neat.

The guy I met down there, I took the truck to, was from Jamaica, but he had an American down there with him that was from Alvin, by the way. We got to talking and he was hunting jaguar, him and his son. That's when you still could hunt them. This was before they became endangered. So that kind of got me all involved in that. So I started going down there doing that.

I had some time, and, remember, those were the years of the toys. Three or four of us had a good airplane and I could borrow it and fly. I used to fly down there. I really did. That was kind of neat. So I started doing that and then I got more.

This guy, his name was Dr. Colby [phonetic] from Beaumont [Texas], had bought a sugar cane plantation, or whatever you want to call it. During the time he was involved, when Cuba went communism, they had a real problem with sugar, so all these countries all of a sudden became places you could raise sugar and had a good market. He was wanting to use the sugar where he'd grown cane and turn that into pasture for cows and cut down more bush and new bush to put sugar cane in. That would work.

I went down, so he talked to me about that. I kind of went around with him and he liked me. We'd kind of go all the places to go look at cows, and we went to all kinds of places. I got to go in everything. I even went down to Ghana to look at that one time.

He told me one time about the time of right after—somewhere about the time of the end of Apollo and beginning of Skylab, he said, "Look, John, why don't you do this." He says, "All you're going to do is work here, and you're going to have a job and everybody knows what kind of money you get and the taxes would be this and you'd retire. I've got a better deal for you. I've got 4,000 acres of land. You come in and take these cows that I buy, stay there three years, run the cows, and then you can have 500 acres."

I thought that was a pretty good deal because I always wanted a ranch. Anyway, I didn't have one, and this was a good way to do it because there was no way for me to do that here. I didn't have one I was born in, and I couldn't marry anybody that had one, because you had to kill all the brothers. You know what that is. You can't take them anymore, like they used to.

So I went down and did that. That was my dream, to become the baron of the Caribbean, but I've got a wife now that thinks I'm manic. I go through things like that. That's just another one of them. I actually thought I could do it. I really did. I did almost did it. I don't see any Llewellyns coming along that want to go down there and finish cutting that bush down like I did, though. My kids are not the same way. Maybe a grandkid will come by somewhere.

But to answer your question, I did that. It didn't take me long, young lady, to decide that when my second wife left me during the second rainy season, that kind of got me down, but it didn't take me long to know that I had to do something else besides do that. I couldn't believe how much I was tied down with that. I mean, I couldn't do anything. I had to stay there. I had to get somebody else to stay. It was either me or I mean it was just that kind of a deal.

That's like this job I had flying to Moon. I mean, it's seven days a week, 365 days a year, and you just can't—I needed something else to do. I just couldn't. I had to do something, go somewhere. I just couldn't stay down there on that ranch all that time. Even though I went hunting a lot. I had a perfect place, because once I was down there, especially during the rainy season, we couldn't do anything, I'd take people hunting. People would come down, so I got to know the place real well. I probably know Belize really well. That's how I did so well in the tourist business, because I knew so much about the bush and stuff. That's what Belize's tourist business is really about. It's more of an adventure than anything else. That's what I did. I

knew a whole bunch about it because I went to most of the places. That's how I did it. It wasn't anything that I had planned.

BUTLER: Thank you. That certainly was a new challenge there that you faced.

LLEWELLYN: Yes, I sure did, and then I got through it some way. Appreciate it.

RUSNAK: It seems like you had a lot of adventures through your career.

LLEWELLYN: It sounds like it.

RUSNAK: We're glad you could share them with us.

[End of Interview]