

COMSAT HISTORY PROJECT

Interview with Allen Puckett

Interview conducted by Nina Gilden Seavey

Interview with
Dr. Allen Puckett
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Nina Gilden: If we could just get a brief outline initially, of your first involvements with COMSAT and then we can take a chronological view of what transpired between Hughes and COMSAT.

Alan Puckett: Well, I haven't really tried to review the history or remind myself of some of the details, Nina, so this is going to be pretty much right off the top.

NG: Perfect.

AP: But of course, my first involvement, I suppose, with COMSAT was really before COMSAT was born, at a time when there was a great interest in the Congress--I'll say, in this country, in the industry, and in Congress--in the possibility that communications satellites were likely to be an important factor in future communications--long distance communications--but especially, particularly, international communications. There were very difficult questions raised

about how the U.S. interest in an international communications satellite system would be represented. There were a lot of possibilities: one would be that it should be strictly a government activity, another was that it should be the responsibility of the telephone company, after all, they ran all the domestic systems. Another possibility was that some new kind of a corporation might be formed or that some existing corporation could pick up the ball and, on a strictly entrepreneurial basis, would invest and solicit investment. So all this was before COMSAT was created. And I remember congressional hearings that....

NG: Let me just interrupt one second. You are now with Hughes, at this time?

AP: Oh, yes.

NG: Okay. Just wanted to make sure that we got that clear.

AP: Of course, our interest was that we had made, we had built some communications satellites under a NASA program, which had

operated successfully and we thought we had perhaps the right approach to a practical communication satellite that could be used in international service or any kind of service. So we had a great interest in seeing a new business created and a new business promoted. That was our interest. So anyway, there were a number of congressional hearings by various committees, and I can't even recall them all, but I'm sure you've dug them out of the archives.

NG: Absolutely.

AP: And they were quite interesting hearings. There was testimony by a number of the companies that thought they might have an interest in building satellites, none of which had built satellites. But Lockheed, and RCA and ourselves, we had, of course, I think we may have been the only ones who had actually built a communication satellite. There were several others.^{1/}

Was that the SYCOM prototype?

^{1/} change to: But Lockheed, and RCA and ourselves, were, I think, the only ones who had actually built any kind of satellite. There were several others who were interested.

AP: Uh, hum. It was the SYNCOM.

NG: It was the actual....

AP: It was called the SYNCOM program. There were actually three satellites launched in that program, the first of which failed during the time that it was being injected into orbit (or actually just after it got into its orbit). The other two were successful and demonstrated the feasibility of synchronous satellites for communication. That was all in the early '60's. I can't remember the exact dates: '62, '63. So in any event, there were the congressional hearings, and there were questions about who'd be willing to invest? Was there really....I remember this was really one of the interesting questions. We got quizzed by a number of these committees about, "Would you be willing to invest in a new company that was going to promote satellite communication and that might be involved in international communication," and so on. They all wanted kind of a yes or no answer.

NG: So as a manufacturing firm, then, you had been--and [as]

an engineering firm--you had been sounded out to that effect? Because the international common carriers obviously had been asked that question separately.

AP: Oh, yes. Yeah.

NG: And what you're saying is that Hughes had been sounded out as well.

AP: The same question was being asked of all the manufacturing firms. They were just trying to see of what the level of interest, or maybe the level of confidence was, in whether this would be a viable business and so on. So, it was not a question you could answer in a yes or no way. As I remember, my answer always was, "Well, if I thought that a new venture would select a satellite which had a chance of being economically successful, of course we'd invest. If they selected a type of system which I didn't think was economically feasible, then we wouldn't invest."

NG: Meaning if they chose SYNCOM?

AP: Yeah. Uh, huh, very simple. Or if somebody else happened to have invented a similar one, but that wasn't true. So, in any case, over a period of, gosh, I guess it must have been more than a year, the Congress finally enacted the legislation which did create the COMSAT Corporation. All this is history, which you probably know at least as well as I do. But it was quite an exciting period, because it really clearly put the U.S. on the map in the business of international satellite communication. It was the first step. Nobody else had taken such a step and the COMSAT Corporation was viewed as a kind of a quasi-government corporation. There were certain members of the Board who were appointed by the White House and, of course, the ownership was partly public and partly common carriers at that time, as you remember. It occurred to us that it was a strange kind of organization with all kinds of conflicts of interest.

NG: Well, that would be what my question is: is that here is AT&T on the Board, they have TELSTAR and you're trying to sell them [COMSAT] a geosynchronous satellite. What's the Hughes Aircraft view of that?

AP: Well, we recognized, and I think almost everybody did, that potentially there was an enormous conflict of interest there. But the AT&T interest didn't dominate COMSAT, so we weren't--we thought it was a little odd--but it wasn't going to be catastrophic to the new company. Then, of course, when the Board of COMSAT was selected, and then in turn the management and Joe Charyk was put in....Joe came with a different sort of background, he'd been in the Air Force as the Undersecretary and [he was] involved at that time in various black programs and knew quite a lot about the space business, such as it was at that time. The space business was still pretty primitive in those days. He certainly had no axe to grind and no special connection with any of the communications companies....

NG: Plus he knew a lot about it. It would be hard to be able to put anything over on him.

AP: Right. He had a good background. That's right. He wasn't going to be particularly influenced by the special interests of AT&T or ITT or anybody else. So it really got off to a pretty good beginning. The people that were then selected

to take part in the management of COMSAT were technically-oriented people. They had a lot of very capable technical people, who were in a good position to make some of those early decisions about which way to go.

NG: Well, let's talk a little bit about the beginning of your contacts with this new entity called COMSAT. You had SYNCOM, ATT had TELSTAR. My understanding is that Hughes Aircraft wanted to sell SYNCOM the way you would buy a shirt off the rack. They wanted to build the satellite, have COMSAT buy it, and then have NASA launch it. That doesn't happen. Why

not?AP: Well, as a matter of fact, that really is more or less what did happen. Now, I'd have to go back and review a little bit of history there. But basically, we did sell--or we contracted with COMSAT to build--a satellite (That's really what happened)--which later was called Early Bird. It wasn't exactly like selling a shirt off the rack, because we had to agree with COMSAT on what the characteristics of this satellite would be.

NG: That's what I guess I'm talking about, is....

AP: Well, no that was a very reasonable thing. That was entirely by mutual agreement. It was the right way to go. There was no disagreement on that. They had to describe what they thought would be a useful first step in terms of the physical characteristics of the satellite--by that I mean it's capacity and it's power, etc., etc. It had to be something that could be launched with the existing boosters. Then we had to describe what we thought was feasible in terms of the technology as we understood it at that time--so that we wouldn't be trying to build something that couldn't be built. So, we had to describe something that was feasible and they had to describe something that was useful. We got the two together and that was the Early Bird.

NG: Now, my understanding was, is that for the first time--in at least Hughes' history, and certainly it was a very innovative move--is that COMSAT had people coming out to Hughes to live, essentially.

AP: Oh, yeah.

NG: Marty Votaw goes out there and you all get in there together to build this satellite. What was the Hughes feeling about that arrangement?

AP: Oh, there wasn't anything unusual about that, because in many of our government contracts, we have had government project people essentially living with us and looking over our shoulder. There was never any confusion about the responsibilities. I remember, I knew Marty Votaw well and he was a great guy, very competent, but his responsibility was to look after COMSAT's interest, to be sure that what we built was in conformity with the contract that we'd written. He didn't pretend to be part of the design team. That was our responsibility; to design and build it. But, as a practical matter, there was a lot of collaboration because I think our guys were....they got along very well with Marty, they appreciated his abilities. It was a very cooperative sort of team effort. That's the way it worked. But that kind of participation, we felt was, certainly at that stage of the game, not at all unreasonable. It was a way of making sure that the COMSAT guys really understood and appreciated what was

going on--understood what the problems were--so if we bumped into a really serious problem, then somehow jointly we could work it out. It made sense.

NG: Well, there was another innovation that came along with COMSAT, which were these incentive contracts. Which is that, "The longer you all keep it up, and you keep it operational, the more money they...."

AP: The more we got paid.

NG: That's right. Now, that obviously is very beneficial from COMSAT's point of view, which means that if you don't build a good bird, nobody makes any money. How is it that Hughes decided to go into that arrangement?

AP: I think we proposed it, as a matter of fact. That's my recollection.

NG: Is that right?

AP: The reason we did it....in the first place, there had never been any commercial procurement of satellites at all, so this was all new territory. Nobody knew how to do it. So we tried to figure out a scheme that....well, to back up a little bit. We all recognized that there was an element of risk in this. In those days, satellites were regarded as a very new kind of an animal and we really couldn't assess the risks. So we wanted some way of dividing the risk in a reasonable way. We wanted a contracting method that would give COMSAT some confidence that it was very much in our interest to build the most reliable satellite that we knew how to build. We wanted to give them that confidence. We wanted an opportunity to make a little money, if the thing really did work, and at the same time to take our share of the risk if it didn't. So those were the general objectives and it was....the satellite was experimental, but so was the contract. It was a new kind of contractual instrument.

NG: Now here, obviously, everybody is going into this thing with great risk. There's never been a geosynchronous satellite that's been operational before. Why were you so convinced that

this was going to work? I mean, you had to sell this idea to COMSAT over what was more of a....

AP: Over a lot of objections.

NG: Over a lot of objections and over a technology that we did know would work (i.e., a medium random satellite).

AP: Well, to just disagree with you. We were quite convinced that wouldn't work.

NG: Why not?

AP: Economically.

NG: Economically. Okay.

AP: You could build them, but there is no way in the world that you could ever afford to put that kind of a system in competition with cables or radio or anything else. There were too many satellites and too many earth stations. It was just impossible.

NG: Ok. Well talk from a technical point of view, however. Because you all had to deal with a real technical problem here.

AP: Well, we had built the SYCOM satellites and it used some technology which was quite new. It made use of some inventions that our guys had made, which we felt were sufficiently simple and straightforward that a lot of this mystique about a synchronous satellite was gone. Even before we'd launched the SYCOM, we were pretty well convinced that this was a very--technically--a very practical approach. Then, after the two SYCOM's had been successfully put into orbit and operated (and in fact, one of them, I think, was still operating ten years later, about five times as long as it was supposed to) we were then absolutely satisfied that this was a perfectly practical technical solution. Economically, the facts spoke for themselves. You could do the arithmetic on the back of an envelope. If you could cover the globe with three satellites instead of 30 or 40 or 50, well, that's quite a difference. NG: Well, I think what, that's 20 million as opposed to 200 million....

AP: Exactly.

NG:you know, to go into it, much less try to expand the system. SYNCOM goes up. Early Bird goes up....

AP: Early Bird went up.

NG: Early Bird goes up. It is a success. It far outlasts it's targeted lifetime. We get INTELSAT II, finally, from Hughes. Let's go on to INTELSAT III. We don't go to Hughes for INTELSAT III. Hughes wants that contract very badly, however. What happens?

AP: Well, I'll tell you what my perception was. I think I understood the COMSAT point of view, even though I didn't agree with it.

NG: What did you perceive that to be?

AP: My perception was that there were a lot of people in COMSAT who were afraid of being locked in with one supplier.

Because we were clearly out in front. We were the only ones who had built satellites of that type successfully--the geosynchronous and if we had build the next generation, the INTELSAT III, it would have been awfully tough for somebody else to come in. I think it wouldn't have been impossible and it could have been decided on it's merits, but my perception was that there was essentially a policy decision that they'd just buy it from somebody else that next time around. TRW was handy and they essentially copied our design, so they got the contract. We weren't very happy about it, but I understood it.

NG: But it doesn't work out so well, actually.

AP: No, it didn't work out well at all.

NG: I was being generous. And COMSAT decides to come back to Hughes for INTELSAT IV. Now, had things changed in the relationship between COMSAT and Hughes after having missed that INTELSAT III stage?

AP: No, not really. We regarded COMSAT always as a good

customer, a good potential customer, like we'd regard any other customer around the world. It was our job to put our best foot forward and do the best marketing job we could do; which we tried to do in the case of INTELSAT IV. By the time we got to INTELSAT IV, which was a little later in history, there were other companies in the country that had developed more of a--I'll call it space technology capability. Other companies had built satellites for other purposes. By that time there had been weather satellites built, there had been scientific satellites, there had been various experimental satellites, so we weren't, by any means, the only ones who knew how to build satellites anymore. So by that time COMSAT could mount, I'll say, a very realistic competition. So of course, in the case of INTELSAT IV, it eventually narrowed down to Ford Aerospace and ourselves and it was a pretty intense competition. I think, in the end, price had a lot to do with it. In fact, that was one thing we weren't very happy about. It turned into kind of an auction, which really wasn't very good for anybody.

NG: Yeah, because then everybody sort of underbids.

AP: It got out of control. It was not a well managed procurement at all. But, in any event, we came out on top on that one and the INTELSAT IV program, of course, was very successful. The satellites worked and they represented an enormous step forward for COMSAT in terms of capability and capacity and global coverage and so on.

NG: Now this is a point at which--at least from COMSAT's point of view--the company starts to have some problems with INTELSAT as an organization.

AP: Oh, yes, I remember that well.

NG: And I was wondering how that affected you? I mean, did it affect you at all?

AP: Oh, yes.

NG: Were you at all involved in the discussion?

AP: Well, only in the sense that we recognized that our customer was no longer just COMSAT the corporation, but our

customer was really INTELSAT the international consortium. There was a transition there in which INTELSAT--you've got the history on this, I'm sure, better that I--but it's just my recollections, that in a sort of gradual fashion, INTELSAT assumed more and more of the authority for the management of the whole international system, for the selection of the suppliers, and really just generally the management of the whole thing. There was a particular point at which an existing agreement ran out and it was replaced with a new agreement--I've just forgotten the details of that. But, it did mean that we had to treat INTELSAT, as a customer, equally with COMSAT itself. COMSAT had a large voice in what was going to happen, but all the members of the INTELSAT Board of Governors and their Technical Committee, now became very important in our marketing operation.

NG: Now, does that provide a problem for Hughes, do you think?

AP: No, no. After all, if you have something to sell, why the first thing you have to do is figure out who you want to sell it to, and we sell to all kinds of customers.

NG: Although the pressure was really on at that time to use foreign procurement--to use companies that were in other countries--that were not American companies and who would have had different alliances.

AP: It made it a little more complicated, yes.

NG: Well maybe that should be my question.

AP: It really did. It was a sort of a problem in the sense that, naturally, we felt that we probably could have built the entire system a little more efficiently and a little more economically if we'd done the whole thing all ourselves. But, for good economic reasons, the INTELSAT people wanted to spread the base at least a little bit and the foreign content became important. It was understood that there would be a price to be paid for the foreign content. It would cost them more, but that was acceptable. As it turned out in the end, it was probably a good thing, because it allowed us to spread the procurement across a broader industrial base. It relieved us of the problem of building-up totally to, that is, manning-up

to do the entire job with then a question about what happens when the job is over. We could spread that across a number of companies. Of course, as I'm sure you know, we did involve some top notch companies around the world: [companies from] England, France, Japan, [and] Germany. It worked very well.

NG: Well, now here we are at INTELSAT V and they've gone to Ford for INTELSAT V. What's the Hughes' view of that?

AP: That was another auction. It was a price competition and we didn't....

NG: Although it's a different kind of a satellite.

AP: Well, it's bigger, yes. That's right, it was a different kind of a satellite.

NG: Was Hughes ready to make the innovations that Ford was suggesting or what was....

AP: Well, we could have gone either way. The thing we proposed we felt was the best way to solve the problem, but you

know, there are always differences of opinion. We felt it was a more....that there was less risk and more....that we'd have more confidence in the proposal that we made.

NG: What about INTELSAT VI?

AP: What about it?

NG: Well, is Hughes going to come up with a different kind of design to bring INTELSAT back to Hughes, or are you....

AP: Oh, INTELSAT. We're building INTELSAT VI, as you know. It's a much more advanced version of, but still similar to, some of the early satellites we built. It's a spinning satellite, but very much larger and with a lot of much more advanced technology involved; higher power and different antenna configuration and so forth. So we think it's very well matched to the particular job that it is supposed to do. We think it's, obviously, we think it's the best solution to the problem or we wouldn't have proposed it.

NG: Obviously not, I suppose. There is an issue, now of separate systems.

AP: An issue what?

NG: The issue now, of separate international systems.

AP: Oh, yes.

NG: This puts COMSAT/INTELSAT--and I'll put that under the same rubric--into a somewhat more precarious position than they had been in the past.

AP: I suspect that's true.

NG: What's Hughes' involvement going to be in the competitive situation?

AP: Well, of course, in that world of international communication, we have been a supplier, not an operator. Therefore, to some extent, we're a spectator. Now as, of

course, COMSAT would say....[COMSAT] has been a very valued customer and a long-standing customer and we don't want to see COMSAT get hurt in this process. We'd like to think COMSAT will continue to be an important player in that game and that somehow they'll continue to have an important role. We recognize that, in some degree, that's being challenged by the possibility of separate international systems, and some of these separate systems could exist in parallel with the INTELSAT consortium. I don't know what the eventual outcome of that will be. So on the one hand, as I say, we have a lot of sympathy for COMSAT. But on the other hand, as a supplier, why we're ready to sell satellites to anybody.

NG: Okay.

AP: Our primary job is to make sure we understand what the requirements might be of anybody's new system. We want to anticipate what new operational requirements may come along so that we're prepared to meet those and get into that market, whatever it may be.

NG: Okay. Let's go back in time just a little bit. We've been talking now more about the present. COMSAT has initiated research and development initiatives on their own. When COMSAT Labs was built, was there a feeling at Hughes that this might degrade the influence that Hughes was going to have over the building of satellites?

AP: Well, we didn't really know. We certainly had a lot of questions about what the real purpose of the Lab was. Because, if on the one hand, it was COMSAT's intention to get into the satellite-building business, then we felt that was a terrible conflict of interest. We wouldn't really have been very happy with that. On the other hand, I understood the rationale and it's not an unusual rationale in an organization of that sort. The rationale was: that in order to attract people with a very high technical competence, you had to give them something to work with beyond just paper and pencil. You had to give them an opportunity to experiment in a laboratory, to do some inventing and come up with new hardware elements that might have application; so I understood the rationale. However, I guess I have to say, I didn't entirely agree with it. I think

the real function of COMSAT, which was to act as operating and a procurement agency, could be carried out without the necessity of a major laboratory in parallel. So....you know, that's a judgment call.

NG: Because my sense of it is, after having spoken with many people, is that there was a feeling that COMSAT could have, in essence, built their own satellite, if they'd wanted to. Now, that never did happen, for whatever reasons.

AP: Well, my recollection is that--I guess this would be a little matter of interpretation--but the way that the original legislation was written, I don't think they'd have been permitted to do that. The legislation required that there be competition. Well, they could not very well have conducted a competition in which they were both a competitor and the selector. They couldn't do it. We would have all been in court.

NG: Did that put any pressure though, on Hughes to....

AP: Not really.

NG: So you didn't feel that it pushed you in any direction that you weren't willing to go or didn't desire to go?

AP: No.

NG: All right.

AP: To the extent that....there were some things--I can't even recount what they were, but I know some of our guys could probably help you a little more on this--there were some things that came out of the COMSAT Labs I believe that were helpful to us, I just can't recall what they were. But, I wouldn't....we could have gotten along perfectly well without it.

NG: Maybe even better than you might think. Let's talk a little bit about the people involved that you have dealt with over the years. Obviously, Joe Charyk is retiring very soon, within the next week or so. There is going to be a new regime at COMSAT. that's literally a whole different kind of a ball team. What's Hughes' view of that? What are you looking forward to?

AP: Well, this isn't the first time in our lives that customers have changed management and changed faces. I mean we deal with the Army, the Navy, the Air Force, with NASA. People come and go and there are new faces and new people that you have to work with, so there's nothing new about that.

NG: So you're not looking forward to any large change in COMSAT as a customer?

AP: Oh, no. From our point of view, one of the very attractive features, good features, of working with COMSAT has been that there has been a lot of continuity. I mean, Joe Charyk has been there right from the beginning and a lot of the other characters have been there for a long time. And frankly, it does make it an awful lot easier to work with a customer when there's that kind of continuity. You develop personal relationships. They understand our strengths and weaknesses and we know theirs. It's a lot easier than, I'll say, other situations that I could name, maybe working with one of the military departments, where you'll work with a few generals and colonels for a couple of years, and then they go, and you've

got new ones and you've got to educate them all over again.
About the time they learn what they're doing, why they go....

NG: And everybody's got a new idea about how to improve the old design.

AP: Exactly. Everybody wants to throw out all the old rules and write their own. So, there has been a lot of, I'll say advantage, in working with an organization that's had a lot of continuity. But just the fact that a couple of guys leave, doesn't necessarily change the continuity, because there are a lot of people in COMSAT who're staying on. People have retired from time to time, and new people have come in and taken their places. From a personal point of view, I'm sorry to see Joe go, obviously, but when he gets to a certain point, why then you've got to retire.

NG: Those are basically the questions that I wanted to talk to you about. Are there any things, and I guess these are less technical in nature--because obviously, I don't think we need to get into all the technical differences between the different

INTELSAT satellites--but are there any anecdotes, any kinds of issues that you think have been important in your dealings with COMSAT? I know that obviously you're not on the staff level, dealing with these people on a daily basis.

AP: I haven't really dealt with them that closely in a personal sense.

NG: I mean, there may not be.

AP: Nina, I can't think of any off hand. If I think of something that might be fun for you to use, I'll let you know. I don't think of anything right off.

NG: Good.