

COMSAT HISTORY PROJECT

Interview with Donald Greer

Interview conducted by Thomas Maxwell Safely

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TMS: Why don't we begin with when you joined COMSAT and under what circumstances and we can kind of go from there.

DG: I joined COMSAT in August of 1964, a little over 20 years ago. At the time I joined COMSAT I was still in the Air Force. I had been working in the Air Force with Dr. Charyk when Dr. Charyk was Undersecretary of the Air Force. I was his Executive Officer at the time; in fact, the time that the Satellite Act was passed. It was in those days that I first, I guess we all first, started hearing about satellites: the global system, and so forth. It was all a mystery to all of us. But as I recall, when he [Dr. Charyk] was asked by President Kennedy to resign his job in the Air Force and take over the presidency of COMSAT, that's when I became very interested in COMSAT. After he had agreed to do this, I recall the first weekend he and his wife and I and my wife, we went over to visit Tregaron for the first time; where the place would be located. I was able to get the key for Tregaron from the Corporate Secretary, David Melamed at that time, who had probably been in place about maybe 3 or 4 weeks or something like that. Anyhow, we went over and we opened Tregaron and we

walked through it, we looked it over, we went down through the basement where all the spiders and everything were, we went through the wine cellar; I remember going out into the garage, looking through the garage. It was all in pretty much of a shambles. But, in the garage I recall, we found the old flag stakes to the nine hole golf course which was on the grounds, which gave a lot of promise. And then back into the main building and really not only looking the building over for interest sakes but to find an office for Joe -- which would be the most suitable place. We ended up by selecting, I think the master bedroom, probably for two reasons: one it was a fairly good size, it was on the second floor; but secondly, it had the largest bathroom with all the gold fixtures and everything right inside it. So I remember that very vividly. We walked through the building looking for places where other facilities might be located and we selected the kitchen, for example, to be our first general services area. In the kitchen was this mammoth black stove and as we cranked up business over there, we put our first little copying machine on top of this black stove and Gene Christensen and some of the earlier folks started business in that particular spot.

TMS: When you first visited Tregaron, were you, at that time, officially part of the staff of COMSAT or was this before you really joined?

DG: This was before. I was still active in the Air Force and I had about a little over 19 years of service. Even though I was very much interested in starting a second career because I had gotten my Master's Degree in Business Administration, I would have wanted to do that; but certainly was very reluctant to give up a retirement program that was only 6 or 8 months away. So, what I did was at the discussion with Dr. Charyk (and we were also very close friends of the Secretary of the Air Force at that time, Gene Zucker), the arrangement we made was that I would take a 6 weeks to 8 weeks administrative leave from the Air Force [sic]. I went over with Dr. Charyk in the beginning and helped set up the administration and hire chauffeurs and arrange for a limo and arrange for the logistical support for the first Board meeting; which we set up in a board room which we designated in the study of the building downstairs. And then [I] also arranged to travel in the first couple of meetings with the first group that was sent up over to Paris with [Phillip] Graham and that crowd. Then [I came] back and helped set up the different offices and where people would be located, reconfiguration of a couple offices and that was about it. That took the 6 to 8 weeks to get going. Then I went back to the Air Force and stayed for another year as aide to Secretary Zucker. Then after about 21 years of service I retired and came over to COMSAT.

TMS: And your official position when you joined COMSAT was essentially.....

DG: I came over as a Special Assistant to the President working for Dr. Charyk in an administrative support function in helping get the program going as far as housing was concerned and office support services.

TMS: Forgive me if I've mistaken what your duties are today, but essentially [that's] what you're doing now.

DG: That right, I'm Vice President of the organization now today, so it has [the organization] grown over the years.

TMS: Indeed, it has.

DG: Yes. What we did in those days, in the very beginning, was to not only have the housing side of the business, but also had what there was to personnel. Most hiring was being done mostly by Joe and the Board itself because basically it was for these key positions within the company. But I did, and there was a multitude of resumes coming in and requests for jobs and so forth. Finally, I inherited all those to set up into a system and basically I guess that's what started our personnel

shop. I had all that to handle. I was fortunate a little later on to be able to hire a lady by the name of Jimmie Jacks who was the Secretary to Pete Casada when Pete owned the baseball team. She started doing all the filing on these resumes and that's sort of how our personnel shop got going. Then I remember Lew Myer came over and then I remember Carl Reber came over from the Air Force. We looked for new offices, we moved up to the second and third floor areas of the Tregaron building. I recall we had Matt Gordon in one office downstairs and we had Johnny Johnson and Ed Istvan down there also.

TMS: That was quite a stellar group in the early years. There was some very intelligent personnel work done in the early going to get quite a coterie of leaders.

DG: That's the most amazing part, I think of, COMSAT in its beginning, as I look back to see what really made COMSAT go. I think I had the same apprehensions as other folks had in moving into a completely new business which hadn't proven itself yet. It was kind of shaky but to see the confidence develop as people developed the system was really interesting and reassuring.

TMS: One of the questions that comes to mind when I think

about Tregaron and especially some of the things that you were doing in the early years, is trying to set up a meeting for the Board of Incorporators or for the first Board of Directors in the study of Tregaron. You have a place that is charming but as you, yourself, said kind of down at the heels and what it must be like to arrange for office space and accommodations for the Incorporators or Directors who are really extraordinarily accomplished and well thought of businessmen in their right. What, as you recall, were some of the particular challenges or rewards or unexpected events that surrounded some of the early going? Today we have the 8th floor of COMSAT Headquarters which is spacious in comparison, at the very least. What was it like back then?

DG: Well, it was a challenge and, as you say, what compounded the challenge was the fact that these very prestigious gentlemen came from all walks of life and were used to the corporate scenery -- which wasn't true at Tregaron. It was a challenge, not only from selecting what would be the most desirable room in the building but having a table made and put together and the chairs that was fitting [sic], to get the proper lighting in there because it was an old, old building, the wiring was bad and we fought all those kinds of problems. At the direction of our first Chairman, Leo Welch, to the stop the sun from coming into the Board meeting room and getting the awnings

hung for that type of an operation measured [sic] -- insignificant little problems today but big problems in those days really. And not only that, but learning the likes and dislikes of a group like this -- even for what seems to be a simple thing and that is the planning for the Board luncheon, for example, and having it catered out there and the logistics behind that. That was kind of tough in those days.

TMS: I'm sure it was.

DG: We were fortunate in having a good nucleus of people, very small nucleus, in our reception area and the lady who put all of these books together on her own volition [sic] she did all this and kept them together; which will be very helpful to us today I'm sure. But, all of those things and we had a couple of chauffeurs who were handy men and would do anything. In those days, we had one car and that was it. Everybody was putting demands on that car and it was kind of complicated. At the same time as we started to grow and seemed to get our feet on the ground, then it seemed like just overnight we started looking for new facilities and places to really locate. That's when we turned and looked at the 1900 L Street operation. We finally leased those facilities and reconfigured for our move, and also on K Street, we put our technical staff on K Street. The evolution of that, of course, was the place to live was

1900 for a brief period of time and then we started working with Pete Casada on this particular location down here [L'Enfant Plaza].

TMS: It seems as soon as you got the K Street location you had outgrown it really, It was a brief kind of interval there.

DG: And that was the technical side of the house and it grew rather rapidly with Sig Reiger running the show and Don Groll who was an assistant to him. I remember going down there after our Early Bird launch and our first re-positioning maneuvers. This is all excitement -- wondering what's going on. On a Sunday, I remember going down there at 7:00 in the morning, meeting Dr. Charyk for the maneuvers and the city was just absolutely dead here. For the first time in the history of the world we were directing maneuvers from the city of Washington and the first satellite.... it was pretty exciting. Not on the spot really, but it was exciting.

TMS: And the streets were empty that day.

DG: Yes.

TMS: Well, as you look back on your association with COMSAT, what are the contributions that you personally have made, the

ones that stand out in your mind? And if you had to kind of list them in an order, which do you think is the most important?

DG: Well, I think that the accomplishments are really in the area of unglamorous accomplishments because...

TMS: It's what makes a company go.

DG: Yes, you have to house and feed people to get the job done. I think that many historians will say that wars have been won on logistics alone.

TMS: It's true.

DG: It's sort of an unglamorous, not too often thought of, support type of operation; but it has to be done. I think that really has been my greatest contribution: being able to work with people within the company, analyzing the problems, staying within budgets, getting the maximum out of your budgetary dollars, and providing as much service, and housing as you possibly could. That way, if you did a good job, you felt you were contributing to the end product; in a different way, remotely, but you were really helping out. I think that's probably the greatest contribution.

TMS: I was wondering if you were involved in the setting-up, for lack of a better word, of COMSAT's technical staff out at Hughes Aircraft, where, I guess the arrangements for the first satellites were being made and COMSAT sent a team of technicians, really, permanently, out to Hughes to stay with them through the building of Early Bird. This was, at the time, really an unprecedented thing for a company ordering a bird of some sort from an aerospace firm to do. And that, I guess, as I understand talking to Sid Metzger and other people, was quite an accomplishment in its own right; to arrange for the transfer of staff and for the arrangement of space, all the way across country really.

DG: Yes, not only that, but the fact that our staff was so small and limited we must have put just about all of our technical staff out at Hughes at that time to live with the bird as it was being born and developed. I think one of the most interesting parts or sidelights to the technical of the house is, while doing my job out at Tregaron, observing the technicians in operation. I remember passing through the different offices, Johnny Johnson's, Ed Istvan's, Metzger's and the rest of them and seeing all these designs and drawings on the blackboards and not really understanding what the hell was going on. But, out of all of that I think came one of the biggest decisions that has contributed to the success of COMSAT

and the entire satellite system. Whatever drove them in this direction, I don't know, whether it was all science or science and luck, but at least the fact that we went into an equatorial orbit system rather than a random orbit type of system I think has been our big success.

TMS: It was certainly one of the dramatic decisions of the early going.

DG: Yes, and the Reigers and the Charyks and the people who put that whole package together, I think, are the ones who really founded this whole organization and got it going.

TMS: A lot of people refer to that as probably the key early decision that really set COMSAT up and put satellite communications on the map, so to speak. As you think back over the time that you've been with COMSAT, if you were to try to sketch together a time-line of major events, the things that stand out in your mind, what key events would you include; let's say starting with the decision to go with geostationary orbit? Following on that, what are some of the turning points from your particular perspective of the company now, it doesn't have to be cosmic necessarily?

DG: I think the highlights as we look back, of course, is the,

as we've just said, the type of system you were going to shoot for and see if you could do it. The next was letting the contract and the design and specs for Early Bird and the development. Then, certainly, very strongly, the arrangements for and the observance of the Early Bird launch with Hubert Humphrey and the crowd over there at this reception. That was a great time and a successful launch too, of course, made it even greater; those were big events. Then, [events] sort of turned away from the technical side, as far as machinery is concerned, and the other big thing I see in my vision here is the INTELSAT arrangements; which I don't know who you'd call the father- author of that operation, but Johnny Johnson's name certainly comes up forward. That was a very, very difficult task and a big operation to put that whole package together. I remember all that going on and arrangements, and the big meetings, and all the operations of the State Department's, all the receptions, the big dinners; all those things took a long period of time.

TMS: Were you directly involved in the arranging of that? I imagine the protocol for those things must have been very difficult.

DG: Yes it was, and our receptions were held at the State Department, or in the State building, which helped a lot too

because we actually had no facilities anyplace to hold those things. And that is where I first came in contact with the Ridgewell Caterers in Washington -- we started using Ridgewell's in the very beginning over there, and have used them off and on since in the last 20 years; we've stayed with them. But, I would say the Early Bird and then the international arrangements, and then you sort of had the feeling that you had a winning ball team here, at least you had one that was up and coming, and you could see yourself moving out into the future and getting bigger. [You] had more confidence in the fact that you were going to survive when you made arrangements for the 1900 L [building] and then when you made further arrangements for a location down here [L'Enfant Plaza]. The expanded space that we got at L'Enfant sort of was another big step in the confidence building that [said] we were going to have a successful satellite system. I think those are probably the big steps. Then, of course, on and off were the different series of satellites, the successes and failures of the INTELSAT Is, IIs, and IIIs. I think those are probably the big steps as I see them.

TMS: You know part and parcel of all of this was simply the building of a satellite communications system. But as you think about that, what do you think that COMSAT's most important contributions have been in this field? A lot of

people have moved in now -- a lot of companies -- there are competing systems going up and in a lot of ways satellite communications, as an industry, is changing and changing very rapidly now. The pace seems to be picking up all the time. But, as you sit back and kind of think about the way the industry has developed -- not just the technology -- but the whole business, what do you think that COMSAT's most important contribution has been? Obviously, a trail blazer.

DG: No question about it, I think its just like the Orville Wrights were to the airplane, we are to the satellite system. There are times when I get a little discouraged [by] the way government has handled the industry itself. Back in the early days the investors or the shareholders dollars went into an unknown investment and fortunately into the hands of some very capable people and they came up with the system that we have today. I think that if it hadn't been for those investors in those days, with the confidence in the people that were set up to manage the system, we wouldn't have the system we have today. I think it's a little discouraging as we move forward and new people come into decision positions in the government where they can change the rules and regulations and take away from COMSAT what COMSAT had in the beginning. After all, it was the shareholders of COMSAT who made this gamble in the beginning. And I think, on down the road, should have deserved

some protection; more than their getting today, I really think.

TMS: This suggests kind of two or three related questions: the first of those is the kind of problems that COMSAT has faced -- that in facing them have proven to be kind of key turning points or key points at which COMSAT has developed in a new direction based on the way they've responded to a given challenge or a given problem. Government relations has always been an issue with COMSAT -- sometimes better, sometimes more problematic. Can you think of some other similar kinds of problems or challenges (if you don't like the work problems) that COMSAT has had to face and deal with over the years?

DG: Well I think I 'd still go back to the government problems we've had to face. As you know, when we were constituted and put together, not only did we have the private shareholders, this is a different series of stock voting, and we had the carriers on board and we've always continued to have government control, government meetings. That is sort of something that is unheard of in private industry before, really. The whole speech in the beginning was, and the fact the government got into it so strongly was, because of the national interest, of course, in the global satellite system. We were put together under those specs and rules and operated under those specs and rules and I think it worked well in the very beginning --

having the carriers on board and bringing what they could to the meeting and to the ballgame -- it worked well. But they were phased out at a time later-on when they weren't needed any longer. I think that the government control in all other areas could have been handled the same way. It seems like somebody has taken over and again expanded on the accomplishments of COMSAT in the interest of various groups; in some cases to the detriment of COMSAT and in other cases maybe not. I feel that COMSAT has been taken advantage of in those areas, especially by the government.

TMS: You don't feel, the way some people do, that relations with the international common carriers have been a particular problem for COMSAT? There are a number people who have studied satellite communications and say, well, "The company's relationship with AT&T, for instance, or its adversarial relationship with ITT and Western Union have been, and continue to be, problems for COMSAT. COMSAT was never placed in a position that it really could compete with these companies in its own particular area." From your perspective, having seen the representatives of common carriers on the Board and watched COMSAT down through the years, has that been a particular problem?

DG: Evidently it has and I'm sure that there are people who

could speak to that question a lot better than I can, but I believe, once again, that the carriers on the Board, in the very beginning, was a big plus for COMSAT because they brought an awful lot of experience to the ballgame and there were a number of very, very intelligent folks who worked with us in those days to help us along. I think it was a big plus and probably a right move. And the fact that it was phased out when it was phased out was a proper way to do it. I don't necessarily agree with the way that we have to deal with the government today in our operation.

TMS: When you think about COMSAT's success, I think it's a success story still, what do you think are the factors that have contributed most?

DG: Well I think that one of the biggest factors is probably personalities. I think it's people who make things begin and grow and I think in this particular case it's true in COMSAT. I think back to the fact that we were very fortunate in the beginning to be able to get a President to start the company like Joe Charyk -- his expertise, his interest, his vitality in this area -- I think, was a big plus for COMSAT. And some of the early staff folks like Sig Reiger and Sidney Metzger, and Johnny Johnson I think have been a big plus for the company. Also, I think one of our biggest benefits or pluses has been

the Board of Directors that we have had over the years. We've had a very, very prestigious Board. I think that's one of the biggest factors that's helped keep us airborne. You can look through the names of the folks that we've had on the Board from the very beginning until today. Not only that, but the leadership on the Board starting with Leo Welch, and Jim McCormick, and Joe McConnell, John Harper. We had people on the Board who could open any door in Washington or in anyplace around the world: very prestigious, big, successful businessmen. I think that core at the top has been one of the greatest factors in carrying us as far as we've gone.

TMS: How do you account for that? It really is remarkable when you think about it -- not personalities and the Board members -- but the fact that you did bring together and still do bring together a group of rather remarkable individuals. Is it just luck or was there a kind of a moving genius behind the business? You're not really in control of it the first time around, at least not with the Board of Incorporators, but to keep that kind of good fortune rolling, that takes a certain amount of management and a certain amount of insight. How do you explain it?

BG: Well, I really don't know how to explain it. I think maybe you explained it just now in mentioning the word

"management." Perhaps that's where it came in and somebody had the vision, the foresight, and the contacts to bring a group as prestigious as our first group of incorporators together for the company. When you look back and think, "Well gee, why would the Chairman of the Board of Maytag, or a soap company, or something like that, why would he be interested in something like a satellite system?" Well, from his viewpoint it must have been the excitement of the whole thing and what the future had to hold and not only that, but also the other names of potential Board Members. That must have created quite an interest. And I think once you put this prestigious group together in the beginning you had an evolution that just kept going and going and going and it stayed there. Once again, you had the foresight of good, strong, highly recognized, Chairmen of our Board which kept this thing going. Again, I say, I think the biggest downfall we will ever have in this Company will be if we ever dilute the quality of the Board of Directors.

TMS: The one word that you used that I like very much is "excitement." Because it certainly was an excitement that the country felt, if you think of the response of the initial stock offering for instance, the tremendous risks involved with an unproven technology (not only in terms of the satellites but even would satellite communications prove economically viable), and yet, the response was overwhelming to the stock offering.

It seems only reasonable that Board Members would feel that kind of excitement too.

DG: Well, it may have been since they were successful in their own endeavors in life and the companies they were with, those kinds of things, that may have been one thing. With COMSAT coming in view, it might have been a national pride and effort that got them coming in this direction, because it was a nationally-oriented activity rather than a private activity, really. And perhaps that's what did it and that's what brought them really out to the front -- this national effort to do something for their country -- which eventually involved and transferred over into a private system. I don't think it was thought of in those days as a private industry, really. We had a hard time shaking (we may not have gotten it all off yet), is the fact that we are tied to the government; partly government oriented and controlled and owned even. I think that had a big influence in the very beginning in getting a lot of folks on the Board.

TMS: Do you think that that kind of feeling was transmitted to the employees of COMSAT as well -- this notion that it is not just a kind of a step into the unknown, which in itself is very exciting -- but there's really something kind of patriotic about it as well; that this is a service?

DG: Yes, I think that probably true. We used to think in terms of government operation, the national interest much more in the early days than you do now. You think much more of COMSAT as a private-oriented company right now than you did in those early days. You used to think government control, government backing; they were behind you all the time and working with you to get this system up and going. It might be a little bit different now.

TMS: We've been talking about the personalities, the strong personalities with which COMSAT's been blessed. If you could think, I'm sure you can think, of at least four individuals who had really played a major role in COMSAT. But, if you had to reflect for a moment and pick out the four who, down through the years, (perhaps not even down through the years, they may have only been associated with the company briefly), but their association with the company was really critical for COMSAT's growth? Who would the four people be, in your opinion, and what have they done that puts them in that kind of "super group?"

DG: Well, there is no question about number one is Joe Charyk. Everybody knows what Joe has done and what he's brought to the ballgame and his selection of people. He was in a very tough

spot over there in selecting key people, in an unknown venture, that would get the job done. As the coach of whole operation he put a great team together and he had to have a pretty good vision of the types of talents that he needed to do this job. I think fortunately, he was the technician, as well as the manager, of this whole organization. He had the technical mind to have the vision of what was required in people, and I think thats how we got Sig Reiger on board. Not being a technician, I don't know what was added, but undoubtedly, Sig added an awful lot to the first program that was developed and that was the satellite system we have today. Sig was a big factor and a very, very, confident individual who was so successful.

Probably the father of the whole operation as far as INTELSAT is concerned is Johnny Johnson -- a very highly respected gentleman who had a tough job over there and he put together a great organization.

The fourth person would be pretty hard to identify as an individual because there are so many around. Again, I'd almost take that fourth person and select that name from a group of names and again, I refer to the Board of Directors and the four Chairmen that we've had on the Board: that would be Leo Welch, Jim McCormick, Joe McConnell and John Harper. Not only what those gentlemen did in running the Board and helping to direct the funds and energies of the company, but even more so, their connection and association with the people in the business

world and their ability to select additional members for the Board, or succeeding members to the Board of Directors, and to maintain the status and the quality of the Board that we have today.

TMS: We've been talking about the up side thus far -- the kind of factors that have most contributed to COMSAT's success -- and I don't feel like I can pass over the business without asking your opinion about the down side. That is to say, the factors that have most limited COMSAT, in your opinion. We've already talked briefly about the government and we can enlarge on that if you'd like to or we can go in a different direction; whichever you think is most important. The thing that has kind of kept COMSAT back in some ways....

DG: Well, probably governmental controls have probably been the biggest draw back. I don't think that once we started off in the right direction in this ballgame that the technical side of the house was the real problem. I think it was the red tapes and the government controls. Now you had to accept certain controls. If you're going to be a utility, that's the way it's set up; if you're governed properly. But, when you start dividing and going into gray areas where you are no longer completely in a monopolistic arena and they're trying to break you out into competition as well, and the dividing lines

are no longer clear, I think then the government controls have been a tremendous handicap and a drawback to COMSAT. If you were able, in those days, to have jumped into the arena, like ITT was for example, and done anything you wanted to with your bucks (regardless whether it was owning car rentals or communications systems or whatever), I think with those constraints off of COMSAT we'd probably be a lot farther along than we are today. I really do. If they had wanted us to continue to be a complete monopoly in the interest of the U.S., then I think that they should have played that rule properly and they should not have permitted the breakdown in the rules which permit other people to enter the system. That's happened today and is even forecast to happen.....

TMS: Are you referring to the recent decision by the Commerce Department and the State Department in regards to competition.

TMS: Yes, I really think when you take a look back at the original investors and the way they set-up the INTELSAT rules in the beginning, and you take a look at this today -- 20 years after that -- you can see somebody taking advantage of the system that was developed back 20 years ago and I really don't think it's fair. If they want to keep us a pure monopoly, then I think they ought to play the rules of the monopolistic game right to the letter and they haven't done that. Otherwise, I

think the government ought to get out of it and we ought to be competitive and go our own way.

TMS: I'd like to take a minute to look forward a little bit -- the future of COMSAT. That's kind of hard to do given the rate changes are occurring in satellite telecommunications these days but, how does the future look to you and how do you think COMSAT can best prepare itself for that future, or what should COMSAT do in your opinion to meet that future; what lies ahead?

DG: Well, I sort of have a split vision on this whole thing and not being a technician as far as the mechanical or technical side of the house are concerned or the government rules and regulations (how they're set up), but sort of a layman's view of the whole thing, my split vision is like this: had COMSAT been able to continue on its own original charter, I think the limitations were not there at all. I think we had a great world to go out in and I think we could have gone forever competing worldwide under the INTELSAT agreement. I think COMSAT representing the U.S. in this arrangement, had a great future. Now with the government intervention and really laying on to the success of COMSAT in this whole area and trying to break up the monopoly side of the house and inject [us] the competition side, it seems to me like the future is really limited. Not that we aren't a

competitive company but I think when you get so many people into the competitive field, that is like a COMSAT field, that is basically designed and run in the interest of the country, I think you dilute the whole system so that everybody's effectiveness comes down. With a future like that, I don't see it as great as it would have been had we continued under the other program.

TMS: In your opinion what should COMSAT do to kind protect it's niche or to carve out a new one for itself; given that there are going to be more and more players now, in the international side? There already are a great many [players] in domestic satellite communications. Do you see a particular direction that COMSAT might go where its real strengths are, so it could play those and perhaps flourish in spite of a changing market?

DG: Well, there may be something out there but I can't see it. I don't know what it is. You go back 20 years and you're excited and you see this and you think of space and..."God, of all that space up there and if they could put these satellites up, if they can get them up there, and if they can get them to work and do that, and that's pretty exciting." Now 20 years later, you look ahead and you say.... "My golly, there is a lot of space up there but there are a lot of satellites up

there too." You never thought you would hear anybody saying that you're going to have to file and get a parking space for a satellite, because of the limitations of space up there, and that's what we have now. So, if out there somewhere in the future, with all this competition going on [it] maybe efficient on one side and maybe not efficient on the other. But the space is taken -- the satellites or the birds are up there, maybe it is a limited field -- after all. Maybe space isn't as big as we think it is.

TMS: That really completes the questions that I have now. Is there anything that we haven't covered that you think would be worth mentioning at this point? As you've kind of glanced over the scrapbook there or as you've talked a little bit on the basis of the questions, does anything come to your mind that you'd like to include in the business?

DG: No I don't think so. I can recall that we used to.... a number of years back when we used to give briefings to industrial groups and other people, I remember the briefings used to include some of the exciting programs that we saw for the future which we don't seem to have today. There are probably good reasons for it, maybe they weren't viable programs. But we used to talk about the aeronautical satellite, for example, which was a very exciting thing in

those days. Not only what it could do for station-keeping on airplanes and communications and navigation, I think that was very exciting. We talked, in those days, about the electronic mail programs. We always included in those briefings the satellite that was going to bring the store into the home to the housewife. It was going to deliver her mail there, she would do all of her banking from the home, she would do all of her shopping from the home. In the early eras of the satellite, with the glamour of the satellite, and throwing those programs and ideas at people, you could create interest in one big hurry. And those were exciting programs. But, all those things have gone by now for one reason or another and you don't see exciting things like that on the future right now. It's almost like it's no longer a good open ballgame, we're going to have to keep fighting and getting it yard by yard right down the middle and that's about it.

TMS: Well, very good. Thank you very much.

DG: I hope this helps something.