

**RCA**

Memo From

D. E. Wise

TO

LOCATION

DATE

*Florida*

*Dave Aters*

~~2/1/89.~~

~~One down and~~

~~18 to go.~~

1.

SATURN HISTORY PROJECT INTERVIEW WITH CARL DENEAN<sup>5</sup>

I don't know where you got some of your information here Roger but some of it is not quite according to Mr. Hoile. O.K., that's good, that's what we want to \_\_\_\_\_, and also at the outset, I don't like to see names being used. Now this is me personally, you can do whatever you want. I don't like to see names used unless you are going to use a hell of a lot of names. By this I mean you can go on and on. The names that you used in here, you used several Douglas people's names and one NASA man's name. Now as far as I am concerned Dr. Rudolph would be the only one that I recommend that you use in this area and let the rest of it go because there is many, many, many more people that was just as much or more so involved than the people you have named from DAC in all due respects to DAC, other than the fact that I know all of these people personally and I know their contribution and not that there is anything wrong with the statement, that the statement was made, just use an example if you haven't already heard you will know before you leave here that I am quite outspoken, Good, and Prentice has an example and you say here that he certainly played a single role in the Saturn program, it was at once I grant you complex and delicate. For instance, the Saturn logistics support manual for DAC fuse the historical development of Saturn logistics is a warning for future efforts. If you want to include what he said I would say that in case like this I would say that this was a statement made by someone from DAC<sup>c</sup> as an example, I could name you names of people like I say that contributed much much more to the logistics and Saturn program so far as the transportation is concerned, much more. Prentice had one just little small fact, and again I take my name out because he was only concerned about the Saturn IV stage. Well, that is why we tried to emphasize that these things are working papers are just beginning and will have to have a lot more added to it. Also, your comment is very correct because the bulk of this particular paper was prepared by Douglas. They were things papers from AIAA Meetings and things of that type, there are other things, now I regret to that there is not a bibliography on there, but again there was no bibliography attached because it is a preliminary run through. Unhuh, and also that's why we are having this today is to correct some of these. Well I just want to get my \_\_\_\_\_ in there as far

2.

as naming people because the first thing you know \_\_\_\_\_ and a guy that has worked his tail off as an example in this program from the time say back before the Saturn IV was even transported like back in the Jupiter days and the Saturn I as far as transportation and so that came into existence even before the IV, it doesn't leave a good taste in the mouth and I am not talking for Denean, please believe me. OK, so I would appreciate if you would take such notice on that, I think fine if you go to Dr. Rudolph and say since you are talking about logistics and he says here not the least of the problems in the Saturn V and stop there by using names and the rest of the times I would use other methods or something, of depicting something such as the guy smelling the skunk, well fine but have this as one of the instances in naming names, in fact, I didn't know that myself. If you wanted me to comment, as I say I read this thing too hurriedly unless you wanted to ask me questions, I think that would be better at this time, it was just kind of made to get your immediate comments and if there is any particular incident that you know of to your recollection there that would be useful because there will be more complete comment editions we hope coming out later on and there are some specific questions particular part of logistics for example that had to do with or what was your position at that time of overall management, I am remember a management chart of 1967 and was not quite clear I don't think, you had it broken down, was there some people more responsible for transportation some for supply and repair parts, or maybe for cryogenics, that is correct, that is, in fact the people that are in here \_\_\_\_\_ Mr. Walker had a moment ago <sup>Bud</sup> ~~but~~ Herman, being one man who had the cryogenics which was broken down into three areas, transportation, cryogenics, and Walt Kennedy's area, I can't think of the name of it, supply or something even though it has a different name, yes it has been practically always been broken down that way ever since we came in 1963. Ok, now where did that organization begin, was that carried over from the Air Force. No, not necessarily, it was not it was set up here by whenever we changed from

Young

anyhow we became the Industrial Operations Division back then it was Bob Young from Aerojet in 1963 and that was when this type of organization was set up in 1963 and we haven't basically changed since 1963, transportation, supplies, and cryogenics, we haven't changed since that time. So each area has experience in whatever it was in Aerojet time, well I wouldn't say this not knowing his background, he was here only a short time and I can only know how the logistics office was set up, the logistics office was set up by a conversation between Dr. Reese and I want to say ~~Friday~~ <sup>Freitag</sup> up in headquarters, but it was headquarters personnel saying that you do need a logistics office and you will do these things such as transportaton, cryogenics, and supply. Was this about 63 then? It was 63, it was actually 63 that the letter was written. Was there some sort of crisis that precipated this? No, the change of the organization from the old Industrial Operations and I believe it was called the Saturn Systems office or something, for the whole Apollo program, whenever Dr. Monca <sup>Sanje</sup> was here and so they took those people plus bringing in other people, and I happened to be one of them and several others from Mr. ~~Huter's~~ <sup>Hueter's</sup> outfit. Mr. ~~Huter~~ <sup>Hueter</sup> became Deputy to this Industrial Operations under Mr. Young and continued on until after the Apollo moonshot and then unfortunately one of the best friends I ever had died. So actually it was set up by, like I say I can only talk for Logistics part because I have seen letters and wrote letters that set the thing up, now the entire operation, why the change was made, I do not know. When you had the office organized did you have a lot of input from the <sup>a</sup> von Braun team from their experiences from the Peenemunde days? Not necessarily. What about cryogenics? Did that create a lot of problems? No, I don't think so, they had to go like mad to get enough product to satisfy the needs, trailers, tankers, and things of this nature. Were those tankers and trailers supplied by MSFC? Some of them were. Or were you under contract? Some of them were still under Government and some were built by Air Products, etc. Are you talking about tankers and trailers that were used now I am not exactly sure to see how you transferred these to cryogenics. <sup>Tankers</sup> ~~Tankes~~ and trailers that say were used on the area here? What I am trying to get at is how did

you get the large amounts of cryogenics from the plant say in Louisiana, to KSC? Was that from your office? No, let's see, it was part of the office over here and part of them maybe say a mile or some thing, basically in the transportation area. What you need to do, if I may suggest this, Roger, is to talk to Mr. Walker, as well, so far as the other portions of this is concerned. The cryogenics, because I was at that time until just recently, I had nothing but transportation. Lets get into ~~t~~ transportation then. Can you pinpoint any outstanding difficulties or successes you had or things that stick out in the program that you remember? Well, many of them and one of them that we are quite proud of and I say it through all humility, we haven't damaged my fri end, that first piece of equipment yet in transportation. A perfect record, perfect. This means that this is inclusive of a little better than <sup>2</sup> 1 000 000 miles by airplane, around a million miles by water transporting cargo, shipping all the way from the west coast to Kennedy, we are very proud of that record, I take no credit for it, I give it entirely to the people who have worked with me , the dedication, and the number of hours that they have put in just being there and seeing that the job is done right. What does it take to do the job right? How did you accomplish such a fantastic record? Well, it is just a matter of just being on the spot and making sure that our motto then and is now is prepare for the worse and hope for the best and this is sort of like tieing down cargo it may be on an ocean voyage as an example, you may only tie down a bucket of paint because ~~it looks like~~ hell it is going to be a good smooth crossing from the weather bureau standpoint, we are going to have five beautiful days and you get out there to the point of no return and you are in ten feet of water, they always latch down to take care of all things that may come up and leave nothing to luck. Was there any phase of transportation any more difficult to compare were the <sup>guppy</sup> ~~government~~ operations more preparation before hand for example than barging? No I will have to say it is the other way around, though we had a procedure for handling and loading every one of the stages, however, in the airplane you go from point A to point B

and if you get or a guy sees a little ice or something like that get your wheels on the ground, or go around it or we just don't fly in ice, now with the barge operation it is a little bit more hazardous because you run and get away from something when you are at sea, you are more flexible in the air that the Gulf as an example or coming around from the West Coast, you might stay out there for 24 hours just steering without any power on because the water being so rough you just couldn't go anywhere, for example, you didn't want to get your tail to the waves so to speak, one of the things that is missing in this is the uniqueness of these barges that is difficult to control. Our river system there is a tow and 99.9 percent of the work on transporting the stages from here to New Orleans is by the remote control system, if you look at the picture you can see the gadget shoving those two barges, *Bill Fuqua* ✓ she is being controlled on the bridge of the barge in front, the reason for this is the reason for the remote control is this guy back on the standard bridge can't see over the barges, can't see through around or over them. This tow is actually being controlled by that barge right there on the starboard side. Every one of them and we have five barges are controlled by similar or in a similar manner. Tow has been shoving these barges since 1961. Now is that kind of unique for barge operation? It is the only one of it's kind and this was done before I got there in 1963, they were using these in 61 and were modified the first run was made in the Tennessee out here at MSFC in March 1961 by using the barge by the name of the *Palamini* Phyleman(?), and they got out here in the Tennessee and just had dummy runs to see how she controlled because this was new even to the pilot the captain of the tug boat, he hadn't done this before. *curves, maneuvers, etc.* You referenced in here, I don't know where your information came from, I don't recall this man's name and I talked with the man who has been with us since 61 and what you said about the system is true but as far as I am concerned I don't know the tow boat, it would have been Bill Dyer a commercial one at one time and again may I suggest that I prefer not to use this, that no one would know it, I didn't even know it. Well, in a sense the reason for doing that was just if possible bring a little life to the narrative.

Well I would suggest that since Bob Fuqua has done all the work on the Mississippi and Ohio and 99.9 percent of the work for the stages, in all fairness instead of using Hagard Bard Lines as the outfits as far as I am concerned you should use *Mechlin* Mechland Barge Lines out of Joliet, Illinois as the one who did the work and the Bob Fuqua. How much of this, the barges did NASA own here? We owned all the barges but Mechland owned the tug. All these barges, we have four covered barges, and they are all government owned, we have two flat deck barges, but the hull is the same as the Promise Proleman and the Oryan, which is the old YMB Barge, the basic hull is the same only they are not covered and the reason for those two not being covered is because we used them to take the stages from New Orleans up to *Little Lake, Pearl River* Mississippi Test and they had to be loaded from the barge and a covered barge a crane had to pick them up and set them in *flat deck* and we have two referred to as BG barges that used to and here again they put in an integrated tow or something like and maybe the dyer did shove some of them for the *Y rings* wirings for the 1C for the first 1C that was built up here. Whenever you talk of stages that covered barges, your facts are absolutely right about coming through the locks and so on, OK there is lots of other things too, like the promise and the compromise and really the barge story *isn't* is told here, it really isn't because you haven't mentioned the evolution of remote control system and you haven't covered the barge being covered or were ever covered. Why were they covered? For protection, this way the sun beam beamed down on them, it was hard enough to keep environmental protection to start with, they were covered for environmental reasons mainly. Was barging used at all in any logistic missiles prior to Saturn, or is this a new thing with Saturn? No, they were used in the Redstone and Jupiter. Did you get Navy personnel to do the barging work or *where* did you get the people? The barge crew handled the lines and the engine room for the tow and the barges was by contract. The people who rode shotgun or nurse maid or whatever you want to call them,

we used civil service personnel from the beginning and then the contractor became responsible. The contractors were Boeing, Chrysler, they were monitoring the instrumentation and we always tried to have at least one man one civil service man. I have a question about the guppy, Jack <sup>Conroy</sup> Connerly was apparently the man who pushed a lot of it. Did you approach him, or did he approach you? I think he approached the people here again before I got here for the little guppy, the pregnant guppy, and the first load was hauled before I came here, it was in September of 1963 and I came on this job in October of 1963. Did you ever meet <sup>Conroy</sup> Connerly? Oh, I had more arguments with him than you can shake a stick at, What did you argue about? Well, I got in on the second airplane and he took the bull by the horns in 1964 the day before Christmas we got the <sup>1st piece of metal at Van Nuys</sup> \_\_\_\_\_ for the big airplane, the super guppy, I saw the need for it and convinced the other people around here that we needed it to transport the SIVB but I tried to keep it out of that category, saying it's an SIVB airplane because the cargo we hauled in it was more far and above from what the SIVB we hauled, we hauled all the LEMS, the command service module, the IU'S. Since 1963 that 's every month cargo except the last two months, but this is the total cargo that is hauled on the plane and is far above the SIVB. On the SIV <sup>P-1</sup> we had one engines hauling before they got out of the business. Let me get this straight, <sup>then truck</sup> it was not necessarily just for the SIVB, you needed another big airplane, yes if for nothing else the LEMS, the LEMS wouldn't go on the pregnant guppy, and we couldn't haul the command service module all in one piece or in the same airplane. With the little airplane we had to split the loads because of the weight factor. The IU can't go in the little airplane, it has to go in the big airplane, it is more than 20 feet in diameter. Why is it you liked the idea of using the super guppy? Was it the schedule, the problem of getting the Saturn <sup>from</sup> I ~~from~~ Louisiana to the Cape but the SIV getting it to California? Yes, but the pregnant guppy can haul the SIV because it is under 20 feet but couldn't haul the SIVB because



it was 23 feet in diameter. It was the fact that there was a need for an outside airplane  
 in 1964 we could see the handwriting on the wall, the LEMS would be too big and too heavy  
 for the guppy, <sup>Conroy</sup> Connerly saw it and went ahead and built another airplane. Someone described  
<sup>Conroy</sup> Connerly to me as sort of a Smiling Jack character. Yes, he is, he is quite a character.  
 I have been knowing Jack since 1963 and we have had some doozies, it is a long story  
 about <sup>Conroy</sup> Connerly. I was just out Santa Barbara, that's where he is now, I talked to his wife  
 and he was in Los Angeles, I try to talk to him at least once a month to see what he is  
 doing, but unfortunately now, he did make a mint in this airplane business, he made about  
 a million dollars and unfortunately the IRS got after him and the story is his present business  
 out there is called <sup>Conroy</sup> Conger Aircraft, the sign on the door is closed, locked up, IRS sign.  
 Are they still flying guppies? Yes, but is under, Unexcelled bought out Aerospace Lines  
 in 1965, that is when Jack made his money. He went in there and got stock for his effort  
 and then in 66 or 67 he had a union problem and he and his office personnel was flying the  
 airplane, but the cargo had gone to Grum<sup>man</sup> <sup>man</sup> at Long Island and Unexcelled came to agreement  
 with <sup>pilots</sup> \_\_\_\_\_ which didn't suit Jack at all and Jack said to give him the GD money and thats  
 how he got out of the Aerospace Lines Company. The guy who rode the right hand when the  
 airplane first flew, his name was P.G. Smith, a fellow named Podesky rode the first flight  
 on the big airplane from Van Nuys in August of 1965. Six months it took them to build it  
 and fly it. I want to ask about the hurricane map on the wall, what about Camille, what  
 effect did Camille have? It was a little hairy, we had the barges the two barges but didn't  
 know where the storm was actually going to go for sure. We had two of the barges down  
 at Michoud, we only had about a day's warning before this thing started in and got so big so we  
 got a crew down from Mechland with the Fuqua and the Two barges the ORyan and the  
Polaymen in the lock of the Mississippi Test, we just barely got the last barge in whenever

Camille hit, we put her in the lock and let the water down, the reason I plotted those simply is we don't go out in that kind of stuff, I need to talk to you more about this thing, there are many statements that are no nos in here. One would be the airplane, after it was built and we flew it up to <sup>MOJAVE</sup> ~~Moje~~ California, it had only flown from Van Nuys up there so it only had a few hours on it and you may not want to print this because he <sup>wasn't</sup> ~~wasn't~~ suppose to be flying , the other was back in the Jupiter days you had a demonstration down here for the Air Force and I had the responsibility of getting some pictures and what have you of the demonstration, I had a little problem.

After interview, D. recalls  
the winds blew out of PG around pretty  
well once. Sitting apart at the time  
Tied to low tractor, but even  
dug it around.

RB OK  
SATURN HISTORY PROJECT INTERVIEW WITH CARL DENEAN

I don't know where you got some of your information here Roger but some of it is not quite according to Mr. Hoile. O.K., that's good, that's what we want to \_\_\_\_\_, and also at the outset, I don't like to see names being used. Now this is me personally, you can do whatever you want. I don't like to see names used unless you are going to use a hell of a lot of names. By this I mean you can go on and on. The names that you used in here, you used several Douglas people's names and one NASA man's name. Now as far as I am concerned Dr. Rudolph would be the only one that I recommend that you use in this area and let the rest of it go because there is many, many, many more people that was just as much or more so involved than the people you have named from DAC in all due respects to DAC, other than the fact that I know all of these people personally and I know their contribution and not that there is anything wrong with the statement, that the statement was made, just use an example if you haven't already heard you will know before you leave here that I am quite outspoken, Good, and Prentice has an example and you say here that he certainly played a single role in the Saturn program, it was at once I grant you complex and delicate. For instance, the Saturn logistics support manual for DAC fuse the historical development of Saturn logistics is a warning for future efforts. If you want to include what he said I would say that in case like this I would say that this was a statement made by someone from DAC as an example, I could name you names of people like I say that contributed much much more to the logistics and Saturn program so far as the transportation is concerned, much more. Prentice had one just little small fact, and again I take my name out because he was only concerned about the Saturn IV stage. Well, that is why we tried to emphasize that these things are working papers are just beginning and will have to have a lot more added to it. Also, your comment is very correct because the bulk of this particular paper was prepared by Douglas. They were things papers from AIAA Meetings and things of that type, there are other things, now I regret to that there is not a bibliography on there, but again there was no bibliography attached because it is a preliminary run through. Unhuh, and also that's why we are having this today is to correct some of these. Well I just want to get my \_\_\_\_\_ in there as far

as naming people because the first thing you know \_\_\_\_\_ and a guy that has worked his tail off as an example in this program from the time say back before the Saturn IV was even transported like back in the Jupiter days and the Saturn I as far as transportation and so that came into existence even before the IV, it doesn't leave a good taste in the mouth and I am not talking for Denean, please believe me. OK, so I would appreciate if you would take such notice on that, I think fine if you go to Dr. Rudolph and say since you are talking about logistics and he says here not the least of the problems in the Saturn V and stop there by using names and the rest of the times I would use other methods or something, of depicting something such as the guy smelling the skunk, well fine but have this as one of the instances in naming names, in fact, I didn't know that myself. If you wanted me to comment, as I say I read this thing too hurriedly unless you wanted to ask me questions, I think that would be better at this time, it was just kind of made to get your immediate comments and if there is any particular incident that you know of to your recollection there that would be useful because there will be more complete comment editions we hope coming out later on and there are some specific questions particular part of logistics for example that had to do with or what was your position at that time of overall management, I am remember a management chart of 1967 and was not quite clear I don't think, you had it broken down, was there some people more responsible for transportation some for supply and repair parts, or maybe for cryogenics, that is correct, that is, in fact the people that are in here \_\_\_\_\_ Mr. Walker had a moment ago <sup>Bud</sup> ~~but~~ Herman, being one man who had the cryogenics which was broken down into three areas, transportation, cryogenics, and Walt Kennedy's area, I can't think of the name of it, supply or something even though it has a different name, yes it has been practically always been broken down that way ever since we came in 1963. Ok, now where did that organization begin, was that carried over from the Air Force. No, not necessarily, it was not it was set up here by whenever we changed from

anyhow we became the Industrial Operations Division back then it was Bob <sup>Young</sup> Yourn from Aerojet in 1963 and that was when this type of organization was set up in 1963 and we haven't basically changed since 1963, transportation, supplies, and cryogenics, we haven't changed since that time. So each area has experience in whatever it was in Aerojet time, well I wouldn't say this not knowing his background, he was here only a short time and I can only know how the logistics office was set up, the logistics office was set up by a conversation between Dr. Reese and I want to say Freitag up in headquarters, but it was headquarters personnel saying that you do need a logistics office and you will do these things such as transportation, cryogenics, and supply. Was this about 63 then? It was 63, it was actually 63 that the letter was written. Was there some sort of crisis that precipitated this? No, the change of the organization from the old Industrial Operations and I believe it was called the Saturn Systems office or something, for the whole Apollo program, whenever Dr. <sup>Sarge</sup> ~~Monca~~ was here and so they took those people plus bringing in other people, and I happened to be one of them and several others from Mr. Huter's outfit. Mr. Huter became Deputy to this Industrial Operations under Mr. Young and continued on until after the Apollo moonshot and then unfortunately one of the best friends I ever had died. So actually it was set up by, like I say I can only talk for Logistics part because I have seen letters and wrote letters that set the thing up, now the entire operation, why the change was made, I do not know. When you had the office organized did you have a lot of input from the von Braun team from their experiences from the Peene days? Not necessarily. What about cryogenics? Did that create a lot of problems? No, I don't think so, they had to go like mad to get enough product to satisfy the needs, trailers, tankers, and things of this nature. Were those tankers and trailers supplied by MSFC? Some of them were. Or were you under contract? Some of them were still under Government and some were built by Air Products, etc. Are you talking about tankers and trailers that were used now I am not exactly sure to see how you transferred these to cryogenics. <sup>Tankers</sup> Tankers and trailers that say were used on the area here? What I am trying to get at is how did

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you get the large amounts of cryogenics from the plant say in Louisiana, to KSC? Was that from your office? No, let's see, it was part of the office over here and part of them maybe say a mile or some thing, basically in the transportation area. What you need to do, if I may suggest this, Roger, is to talk to Mr. Walker, as well, so far as the other portions of this is concerned. The cryogenics, because I was at that time until just recently, I had nothing but transportation. Lets get into rransportation then. Can you pinpoint any outstanding difficulties or successes you had or things that stick out in the program that you remember? Well, many of them and one of them that we are quite proud of and I say it through all humility, we haven't damaged my friend, that first piece of equipment yet in transportation. A perfect record, perfect. This means that this is inclusive of a little better than 1 000 000 miles by airplane, around a million miles by water transporting cargo, shipping all the way from the west coast to Kennedy, we are very proud of that record, I take no credit for it, I give it entirely to the people who have worked with me , the dedication, and the number of hours that they have put in just being there and seeing that the job is done right. What does it take to do the job right? How did you accomplish such a fantastic record? Well, it is just a matter of just being on the spot and making sure that our motto then and is now is prepare for the worse and hope for the best and this is sort of like tieing down cargo it may be on an ocean voyage as an example, you may only tie down a bucket of paint because it ~~looks like~~ hell it is going to be a good smooth crossing from the weather bureau standpoint, we are going to have five beautiful days and you get out there to the point of no return and you are in ten feet of water, they always latch down to take care of all things that may come up and leave nothing to luck. Was there any phase of transportation any more difficult to compare were the <sup>gypsum</sup> government operations more preparation before hand for example than barging? No I will have to say it is the other way around, though we had a procedure for handling and loading every one of the stages, however, in the airplane you go from point A to point B

and if you get or a guy sees a little ice or something like that get your wheels on the ground, or go around it or we just don't fly in ice, now with the barge operation it is a little bit more hazardous because you run and get away from something when you are at sea, you are more flexible in the air that the Gulf as an example or coming around from the West Coast, you might stay out there for 24 hours just steering without any power on because the water being so rough you just couldn't go anywhere, for example, you didn't want to get your tail to the waves so to speak, one of the things that is missing in this is the uniqueness of these barges that is difficult to control. Our river system there is a tow and 99.9 percent of the work on transporting the stages from here to New Orleans is by the remote control system, if you look at the picture you can see the gidget shoving those two barges, <sup>Bob Fuqua</sup> she is being controlled on the bridge of the barge in front, the reason for this is the reason for the remote control is this guy back on the standard bridge can't see over the barges, can't see through around or over them. This tow is actually being controlled by that barge right there on the starboard side. Every one of them and we have five barges are controlled by similar or in a similar manner. Tow has been shoving these barges since 1961. Now is that kind of unique for barge operation? It is the only one of it's kind and this was done before I got there in 1963, they were using these in 61 and were modified the first run was made in the Tennessee out here at MSFC in March 1961 by using the barge by the name of the <sup>Palaimon</sup> Phyleman(?), and they got out here in the Tennessee and just had dummy runs to see how she controlled because this was new even to the pilot the captain of the tug boat, he hadn't done this before. <sup>Curves, maneuvers, etc</sup> You referenced in here, I don't know where your information came from, I don't recall this man's name and I talked with the man who has been with us since 61 and what you said about the system is true but as far as I am concerned I don't know the tow boat, it would have been Bill Dyer a commercial one at one time and again may I suggest that I prefer not to use this, that no one would know it, I didn't even know it. Well, in a sense the reason for doing that was just if possible bring a little life to the narrative.



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Well I would suggest that since Bob Fuqua has done all the work on the Mississippi and Ohio and 99.9 percent of the work for the stages, in all fairness instead of using Hagard Bard Lines as the outfits as far as I am concerned you should use Mechland Barge Lines out of Joliet, Illinois as the one who did the work and the Bob Fuqua. How much of this, the barges did NASA own here? We owned all the barges but Mechland owned the tug. All these barges, we have four covered barges, and they are all government owned, we have two flat deck barges, but the hull is the same as the Promise Proleman and the Oryan, which is the old YMB Barge, the basic hull is the same only they are not covered and the reason for those two not being covered is because we used them to take the stages from New Orleans up to Mississippi Test and they had to be loaded from the barge and a covered barge a crane had to pick them up and set them in and we have two referred to as BG barges that used to and here again they put in an integrated tow or something like and maybe the dyer did shove some of them for the ~~wirings~~ <sup>4 rings</sup> for the 1C for the first 1C that was built up here. Whenever you talk of stages that covered barges, your facts are absolutely right about coming through the locks and so on, OK there is lots of other things too, like the promise and the compromise and really the barge story ~~is~~ <sup>isn't</sup> told here, it really isn't because you haven't mentioned the evolution of remote control system and you haven't covered the barge being covered or were ever covered. Why were they covered? For protection, this way the sun beam beamed down on them, it was hard enough to keep environmental protection to start with, they were covered for environmental reasons mainly. Was barging used at all in any logistic missiles prior to Saturn, or is this a new thing with Saturn? No, they were used in the Redstone and Jupiter. Did you get Navy personnel to do the barging work or <sup>when</sup> did you get the people? The barge crew handled the lines and the engine room for the tow and the barges was by contract. The people who rode shotgun or nurse maid or whatever you want to call them,

we used civil service personnel from the beginning and then the contractor became responsible. The contractors were Boeing, Chrysler, they were monitoring the instrumentation and we always tried to have at least one man one civil service man. I have a question about the guppy, Jack <sup>Conroy</sup> ~~Connerly~~ was apparently the man who pushed a lot of it. Did you approach him, or did he approach you? I think he approached the people here again before I got here for the little guppy, the pregnant guppy, and the first load was hauled before I came here, it was in September of 1963 and I came on this job in October of 1963. Did you ever meet Connerly? Oh, I had more arguments with him than you can shake a stick at, What did you argue about? Well, I got in on the second airplane and he took the bull by the horns in 1964 the day before Christmas we got the last piece of metal at Van Nuys for the big airplane, the super guppy, I saw the need for it and convinced the other people around here that we needed it to transport the SIVB but I tried to keep it out of that category, saying it's an SIVB airplane because the cargo we hauled in it was more far and above from what the SIVB we hauled, we hauled all the LEMS, the command service module, the IU'S. Since 1963 that 's every month cargo except the last two months, but this is the total cargo that is hauled on the plane and is far above the SIVB. On the SIV we had <sup>f-1</sup> ~~one~~ engines hauling before they got out of the business. <sup>(Then truck)</sup> Let me get this straight, it was not necessarily just for the SIVB, you needed another big airplane, yes if for nothing else the LEMS, the LEMS wouldn't go on the pregnant guppy, and we couldn't haul the command service module all in one piece or in the same airplane. With the little airplane we had to split the loads because of the weight factor. The IU can't go in the little airplane, it has to go in the big airplane, it is more than 20 feet in diameter. Why is it you liked the idea of using the super guppy? Was it the schedule, the problem of getting the Saturn I form Louisian to the Cape but the SIV getting it to California? Yes, but the pregnant guppy can haul the SIV because it is under 20 feet but couldn't haul the SIVB because

it was 23 feet in diameter. It was the fact that there was a need for an <sup>outside</sup> airplane in 1964 we could see the handwriting on the wall, the LEMS would be too big and too heavy for the guppy, Connerly saw it and went ahead and built another airplane. Someone described Connerly to me as sort of a Smiling Jack character. Yes, he is, he is quite a character. I have been knowing Jack since 1963 and we have had some doozies, it is a long story about Connerly. I was just out Santa Barbara, that's where he is now, I talked to his wife and he was in Los Angeles, I try to talk to him at least once a month to see what he is doing, but unfortunately now, he did make a mint in this airplane business, he made about a million dollars and unfortunately the IRS got after him and the story is his present business out there is called <sup>Conroy</sup> Conger Aircraft, the sign on the door is closed, locked up, IRS sign. Are they still flying guppies? Yes, but is under, Unexcelled bought out Aerospace Lines in 1965, that is when Jack made his money. He went in there and got stock for his effort and then in 66 or 67 he had a union problem <sup>w/ pilots</sup> and he and his office personnel was flying the airplane, but the cargo had gone to Grumann at Long Island and Unexcelled came to agreement with pilots which didn't suit Jack at all and Jack said to give him the GD money and thats how he got out of the Aerospace Lines Company. The guy who rode the right hand when the airplane first flew, his name was P.G. Smith, a fellow named Podesky rode the first flight on the big airplane from Van Nuys in August of 1965. Six months it took them to build it and fly it. I want to ask about the hurricane map on the wall, what about Camille, what effect did Camille have? It was a little hairy, we had the barges the two barges but didn't know where the storm was actually going to go for sure. We had two of the barges down at Michoud, we only had about a day's warning before this thing started in and got so big so we got a crew down from Mechland with the Fuqua and the Two barges the <sup>v</sup>ORyan and the <sup>v</sup>Polaymen in the lock of the Mississippi Test, we just barely got the last barge in whenever

Camille hit, we put her in the lock and let the water down, the reason I plotted those simply is we don't go out in that kind of stuff, I need to talk to you more about this thing, there are many statements that are no nos in here. One would be the airplane, after it was built and we flew it up to <sup>Moje</sup> California, it had only flown from Van Nuys up there so <sup>VB flew it</sup> it only had a few hours on it and you may not want to print this because he was'nt suppose to be flying , the other was back in the Jupiter days you had a demonstration down here for the Air Force and I had the responsibility of getting some pictures and what have you of the demonstration, I had a little proble,A.