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Paul^{E.} Purser
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MSC personalities

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Interview conducted by

Robert B. Merrifield - Staff
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PAUL PURSER INTERVIEW

May 17, 1967

18 Purser: The first thing that I can think of related to what eventually became the Manned Spacecraft Center, occurred around January 1958 just after Sputnik and when everyone was getting stirred up about getting into the space program. I spend 3 weeks on travel from Langley at the Lewis Research Center working with primarily Lewis people, although in the group there was also Bob Crane from the Ames Center. Among those in the group were people like Ed Cortwright and George Low and several others whose names escape me at the moment. We were looking at what NACA would need in the terms of a new center or an expansion of existing centers, should we wind up with the job of being the space agency. Enough had gone on following Sputnik that everyone was pretty sure that there was going to be a new agency.

18 This Lewis study was done under Abe Silverstein's direction at the request of Mr. Crowley and Dr. Dryden. Unfortunately, at least from my point of view, it was almost entirely based on the concept of a new nuclear rocket research and development center. [Abe was an extremely farsighted-shortsighted individual. It seems to me that he has a peculiar propensity to work either on yesterdays problems or the problems of 20 years from now, rather than problems of today, tomorrow and the next 5 years.] Most of that study effort went into what would be needed to develop large nuclear rockets that eventually would be required for real exploration of space. I think there was a lot of good work done, but I think a large part of it was then untimely. Some of the other people at Lewis and Bob Crane

and myself all felt this untimelessness, so we pressed for consideration of what we felt was more immediately important. We did get into this report (which wound up being about 1-inch thick by the time it got finished and got to Headquarters) about five pages on the manned spaceflight. The report begrudgingly^{ly} noted that there might be one or two laboratories connected with such a new center that would be devoted to manned space flight efforts. Very little more was heard, at least by me, about a new center. I did manage to kind of ring the bell to Gilruth and Floyd Thompson, and they in turn got hold of Crowley and Dryden who in turn got hold of Abe, and we redirected the study a little bit. Abe, however, never did give up the idea that what was really needed was a big, new (roughly 400 million dollar) installation for work on nuclear rockets, and all other work that would be done was subsidiary.


18 The next thing that comes to my mind about a new center was during the summer of 1958, when a group of about 30 field center and Headquarters personnel were called to Headquarters, to work under the joint direction of Silverstein and Gilruth, to look the whole spectrum of the space program. By that time nuclear rockets had assumed what I felt more proper proportions in our thinking, and although manned space flight still had not come up to what Faget, Gilruth, and I felt was the proper proportion, it had been increased to where it was at least a pretty fair sized effort. We considered all of what NASA's program for the most part now encompasses, and it was immediately apparent that we would have to have a new center, primarily for the space sciences effort. Dr. Dryden was almost adamant in insisting that existing NACA research centers not [become contaminated]

(That is, have their research interfered with)

by the development work that would be required for space exploration. It was thus obvious that we had to have a new center and it would have to be a combination of space science and space flight development. We made various looks, both in the January Silverstein study and during the summer at what might be places that such a center could be located, and naturally, I thought that the best place to locate it was in the big empty area on the west side of Langley Field. Others felt other places were better. Dr. Dryden decided that the present location of the Goddard Center would be the best place for it and he picked me of all people to write him a one-page justification! We heard no more about a center as such; we were more concerned with getting the program underway. Work got underway on planning the construction of Goddard almost immediately, but there was no indication at that time of any additional centers.

Merrifield: And this was the manned satellite program?

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Purser: No, this was the total NASA program that we had been working on during the summer of 1958, and the manned satellite program was only part of it. At the same time, of course, we had a group of people from Lewis and a group from Langley working at Langley on the manned satellite program. That eventually developed into Project Mercury. We were working with ARPA and it was decided sometime during the summer that whatever manned satellite program we had would be done under NASA's direction. This was after the Space Act was passed and signed, which was July 29, as I recall, but, prior to NACA closing up on September 30 and becoming NASA on October 1 of that year. I think it was decided sometime in August



that there would be a manned satellite program and that NASA would run it. We intensified our efforts to wrap up a proposal for the new administrator, whoever he would be. We later learned that it would be Dr. Glennan. We made the presentation to Roy Johnson of ARPA on, I think October 4, and then to Dr. Glennan on October 7, and he said, "Okay, get on with the job." I had been on the West Coast at that time talking to the Air Force about using the Atlas just as though Dr. Glennan had already approved the program, even though he was even then in the process of hearing the presentation. But anyhow, Gilruth, Faget, and the others came back to Langley with really nothing other than Glennan's verbal orders to get on with the program. We finally got organized after Dr. Gilruth wrote a letter to Floyd Thompson then either Director or Acting Director at Langley and asked him to assign 35 of us from Langley to a Space Task Group. I don't know how the paperwork ever got handled on transferring the 10 Lewis people, Andy Meyer, Scott Simpkinson, Merritt Preston, and so on, but somehow during the next few months they did get transferred from Lewis and the Space Task Group began operation in some offices on the second floor of the Unitary Wind Tunnel Plant Building at Langley. The first additions to the staff other than the original 45, 35 from Langley and 10 from Lewis, were Dr. Stan White from the Air Force, Bob Voas (a psychologist from the Navy) and an Army Flight Surgeon whose name escapes me at the moment. (That Army Flight Surgeon was with the group for only about a month or two, and then he was replaced by Dr. Augerson from the Army.) As the program began to get better developed, we added a few more people from Langley. Col. Lindell was assigned from

the Air Force as our major liaison man and point of contact with the Air Force, Col. Raines, from ABMA to help with the Army coordination work, and Commander Havenstein from the Navy to help with the Navy, primarily in terms of recovery requirements. This took us up, I guess, into roughly January 1959. During that period of time most of us were really more heavily involved in trying to get the contractor selected and onboard for the spacecraft than in anything else, although there were a few people working in the operations area. I don't remember exactly whether Lindell, Raines, and Havenstein came in while we were still over in the Unitary Plant Building, or whether they came in after we moved over into the East Area of Langley into the former Administration Building which actually was the first permanent structure that NACA built. It was the NACA Langley Center in about 1920.

ye This was Building 58, the big Administration Building in the east area of Langley. The center portion of the structure was NACA's first permanent building. The two end wings, where the Director's Office was at one end and the cafeteria was on the other end, were added in the early 1940's.

25 We didn't actually get established in terms of paperwork, I guess, until sometime in January or early February of 1958. We moved into building 58, had a meeting with Dr. Dryden and Mr. Crowley, Dr. Silverstein and others from Headquarters, and reported on where we stood on the program. At the end of that meeting we held a smaller private meeting. I believe there was just Mr. Crowley, Silverstein, Gilruth, myself, and Charlie Donlan, at that private meeting in Gilruth's office. We pointed out to

Crowley and Silverstein that we had never received even as much as a piece of paper from Headquarters establishing the Group, and that the closest thing to an official pronouncement was the memo that Gilruth himself had written to Thompson back in ^{late 1958.} ~~early 59~~. We also pointed out that Gilruth had no official title; not even the title of Project Manager, or Director of Project Mercury, or anything like that. We had been typing Director of Project Mercury under his name on letters that went out, because we didn't know what else to use. I guess it was shortly after that meeting he was officially appointed. The papers may have been backdated, but I don't think they were. He was officially appointed an Assistant Director of the Goddard Space Flight Center and Director of Project Mercury, with the Director of Project Mercury title to be used as a normal working title, and Assistant Director of Goddard to reflect the intended eventual disposition of the Space Task Group. We would continue to occupy space in Langley and receive Administrative Support from Langley until such time as buildings were available for us to move into up at Goddard. This organization existed over a year, I guess, and after that we were supposed to depend on Goddard for our administrative support, although really, we didn't. We still depended on Langley to provide the manpower for the Administrative support, and forwarded all institutional paperwork, budgets, and requests for personnel through Goddard. Actual immediate program direction remained directly between Gilruth and George Low and Abe Silverstein at Headquarters. Later, I guess, in late 1960, it became evident that there wasn't ever going to be room for us at Goddard. I believe that we then became (and this is something that would have to be checked through whatever records exist in Management Analysis), just as arm of

Headquarters reporting directly to Headquarters and no longer a part of Goddard. We still didn't know where we were going to go, and we didn't know whether we would actually be a Center or not, although we had been working since about the middle of 1959 with the ^{Goett} ~~Chet~~ Committee in

64 looking to what our next program should be, the one that eventually developed into Apollo. The decision was made, finally, in early '61 that we would be a new separate center. I don't know whether that decision was actually made and announced before we were committed to the lunar landing goal for Apollo, or just afterward. Earth orbital and circumlunar aspects of Apollo had been approved initially by Headquarters and Congress and only later was the lunar landing aspect added. ^H During 1961 a Site

118 survey team was formed under Jack Parsons, the Associate Director at Ames. It had on it Ed Campagna who had come onboard because we knew we were going to have to start construction planning; Marty Byrnes who had come with Walt Williams from Edwards; Phil Miller, I believe, who was the head of the construction program at Goddard, and perhaps one or two other people. This was the group that made this survey of some 21 different sites around the country. They came up with two almost equal recommendations, Houston and the Benecia Ordnance Depot ~~of~~ northeast of San Francisco and north of Oakland. The Benecia Ordnance Depot looked attractive because it had, I think, around 2000 acres of land. It also had a lot of existing buildings that we could move into. It would take a certain amount of modification -- we would have to tear out a lot of ammunition storage bunkers and things like that, and it would take quite a bit of rework to the area, but it did have some existing buildings that we could move into. It also had the advantage

of being close to the Ames Research Center and relatively close to the California university complex, being not far from Berkeley and Palo Alto. Although it had such things in its favor, it was quite far from Kennedy (then Canaveral), where we were going to be doing our launchings, and it had the disadvantage of being too close to another NASA Center. Its distance or location from Canaveral at the time was bad because we had not yet gotten into the jet transport stage, and it was close to a 12-hour flight to the Cape. Also, even though we were connected to the Cape by water, it was a long trip from San Francisco to the Panama Canal and through the Gulf to Kennedy. I think it was that kind of consideration that made Houston look better, even though there weren't buildings immediately available to move into. Houston was better located with respect to potential contractors on either the East or West Coast, in respect to Washington, and not near another NASA Center where there would be competition between them. Other considerations -- good universities in the vicinity, good weather, and so on kind of balanced out, and pretty much justified the selection of Houston as the location. The fact that we did not have buildings already available, I think, was a blessing in disguise, because although we suffered a couple of years and were obliged to lease temporary quarters, we were able to start out from scratch with a master plan. We have adhered to this master plan fairly closely and got what we really needed. The Center is arranged in a functional manner, and all in all, I think we came out with a much better looking and functionally much more satisfactory center than we would have had, had we gone someplace where buildings already existed.

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During 1961, Hjernevik and Whitbeck and Bingman were assigned to the Space Task Group to begin formation of what is now the Administrative Directorate. The Business Management Office was redesignated Office of Assistant Director for Administration with Wesley L. Hjernevik as Assistant Director on April 13, 1961. We had had a very small Business Management Office for a few months with really no head for it while we were looking for someone. We found Hjernevik to head it, and he brought Whitbeck and Bingman with him. That is when we really started working on trying to get a Center organization as opposed to a project type organization. Shortly after the site was selected (the announcement was made on September 19, 1961 by Mr. Webb), Gilruth, Williams, and Hjernevik, I believe, came down to look over the site. Within about a week, Marty Byrnes, Bill Parker, Christman, and about three others I think, came down and found an empty store in Gulfgate Shopping Center. They set up an office that had nothing more than desks, chairs, a telephone, a roof over it, and a door that could be locked at night, and started looking for more extensive office space for us.

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There are some real interesting things about finding the office space. One of the first office buildings that we found was the Rich Building on Telephone Road. The Bill^{Phil} ~~(??)~~ Rich Fan Company, a maker^{of} ventilating fans and air conditioners, was planning to expand and were building a new building for assembly of fans and air conditioners. When Rich heard that we were looking for space for short term occupancy, he said, "I don't need to do my expansion right now -- I don't mind putting it off for a couple of years if you want the building I'll lease it to you for whatever you

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can pay for it." The Farnsworth-Chambers Building which had become available looked like it would be a good place for a center headquarters. It was reasonably centrally located along the Freeway, near to town, and near to the Airport. It looked like all our temporary facilities were going to get located up and down the Freeway between the Airport and the middle of town so it made a pretty good central location. My understanding is that the owners of the building wouldn't lease it to us for what the General Services Administration would allow us to pay. Someone else in Houston heard about the situation and as I understand it, said, "Hell, I've wanted that building anyhow. I'll buy it and rent it to you for whatever you can pay for the next two or three years, and then, when you are through with it, I'll have it. I've always wanted it, and might as well get it now." This kind of attitude of being willing to delay business expansion for two or three years to help provide a space, or being willing to rent us the space for whatever the GSA would allow us to pay for it, is, I think, typical of the type of hospitable reception that we got in Houston. Before we moved to the permanent Site, we finally wound up, as I recall, with buildings at Ellington and over 100 buildings in 14 different sites scattered up and down the Freeway.

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The start of the planning for the Center out here as far as budget purposes were concerned, occurred when we proposed to the Congress that the new Center should consist primarily of four high-rise buildings, each of which would include a combination of office and laboratory space. As I recall, \$68 million dollars were appropriated the first year to get construction started. There was a lot of misunderstanding in the press about

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that \$68 million, and it was reported to be the total cost of the Center. Instead it was to be just enough to get started. For awhile we got a lot of flap about underestimating the cost of the Center when in reality we hadn't underestimated it at all. We had never tried to make a real estimate of what it would cost at completion. We just said that within the first year we could use \$68 million to get started. A master planning team headed up by Brown and Root, and several other architect-engineering firms (including Charles Luckman, from, I believe Los Angeles) established the general appearance of the Center, or what is called the "architectural vocabulary": A central mall encircled by buildings constructed of precast concrete panels with large windows, overhangs for sunshade, and so on. Other firms made studies of traffic flow and utilities requirements. We got out of these studies an extremely good master plan, one that we have had little need to deviate from.

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We used the first part of the construction funds to build primarily office and small laboratory space, things that we couldn't make much of a mistake on. The more complex facilities, such as the centrifuge, the large thermal vacuum chambers, vibration and acoustic towers, and so on were delayed until we had built up some of the staff that was going to be responsible for their operation to participate in their design. This way we avoided having one group of people designing something and then turning it over to somebody else to operate it. The people that were designing it knew that they were going to have to live with it, and so they designed it with that thought in mind.

149 We started out here in Houston with about 750 people. We had grown to about 900 in the Space Task Group at Langley and we made a survey of how many people wanted to make the move. I think that survey was made in November, December, and January of 1961 and 1962. Out of the 900, I believe over 750 agreed to make the move. Others wanted to make the move but for one reason or another, couldn't. One man in particular, had an aged mother that he was supporting who had been born and raised in Hampton, and at the age of 85 was not about to move away from Hampton, so he had to stay there. The people that were left in Virginia were well taken care of. Langley and the other Government Agencies in the area promised that anyone who did not want to make the move to Texas would be offered a job there in the Tidewater region.

149 To have 750 of the 900 in the Space Task Group willing to make a voluntary move, was, I think, unprecedented, and a strong indication of the loyalty and interest and enthusiasm people had for the program.

30 In the early part of 1959 we were having trouble finding highly qualified people needed by the Space Task Group to handle the jobs that we could see were coming. The Avro Company in Canada had just lost a big interceptor contract for the CF105 Arrow. Avro wanted to lend-lease to us a group of their engineering people. They came to us with a proposal to rent us 125 of their best people. We couldn't do it, first because we couldn't go to another nation for such a contract and second we didn't see how there was any way of giving these people a specific separate task that we could assign to them as we do the support contractors that we have now. We really needed people to fit into all parts of the organization

and it wouldn't have been legal or right to try and fit them in as non-Government employees. The Avro management understood and said, "Fine, will you just offer them jobs." Within about a week we got approval from all the proper places in Washington to go up and hire up to 30 of their best people. Gilruth, Faget, Matthews, ^{DONLAN} myself (and I believe that was all) went up to Toronto over a weekend and conducted the most peculiar raiding effort by one engineering establishment of another that I know of. We were extremely well taken care of by the company that we were raiding. They met us at the airport, put us up in good hotel accommodations, fed us bountifully, took us on a tour of their plant, contacted the kinds of people that we had indicated that we needed, and lined up for interviews those they felt were really their best qualified people. They provided us office space for the day. In effect, they had Vice-Presidents of the company acting as errandboys for us, racing around gathering up people and information. At the end of a long day's work we made a selection of 30 of the people that we wanted. We wished that we could have selected twice that many, but 30 was the limit that had been set for us. Twenty-seven of the 30 accepted and came to work for us. They all stayed with us until we left Langley and then, I think, three or four decided not to make the move. Stan Cohn, who was the senior computer man, I believe went to Goddard; Jack Cohen, who was also pretty much of a computer and trajectory analysis man, I believe went to work for IBM in the Washington area. I think probably by that time one other of the group who was a British citizen went back to England. The rest of the group made the transfer. Since that time, one I believe, was assigned to the Apollo Office at

Downey, one, Tecwyn Roberts has gone back up to Goddard and maybe one other has left. I think that we still have here around 21 or 22 of the 27 we hired from Avro. They are all well established in the organization.

149 To get back to the subject of the move down here, Marty Byrnes and his crew had rounded up a pretty fair amount of office space during October, November, and December 1961. We made the first major move of people (primarily those that are now the Engineering and Development Directorate under Dr. Faget), around January, February and March, 1962. Some of them moved just before the school semester ended, some of them at the time the school semester ended, many of them came early in January and then brought their families down at the semester break. The project office people and the operations people were left at Langley because we were in the process then of putting off, kind of day by day, the first Mercury orbital flight, and we felt that we just could not afford to interfere with the ongoing program by moving the program office and the operations people. I came down in the first part of March. Williams continued to make his headquarters there at Langley. Dr. Gilruth kind of divided his time between Houston and Langley, although he spent most of the time at Langley. Hjernevik came down, I guess, at the same time I did. He and I and Faget kind of ran the southern branch of the business while Dr. Gilruth and Williams and Chris Kraft and Mathews and Jim Chamberlain as Gemini Manager ran the northern and eastern branch of the company. During June and July between Scott Carpenter's flight and Wally Schirra's flight, the rest of the move was made, and by around June 30 of 1962, everybody that was going to move from Langley, had been moved and furnished office space

down here. In that general period of time, the Mission Control Center that was seen as being needed both for Gemini and Apollo had not been fixed in location.

It was, I guess, really right after the completion of the move down here, during the latter part of 1962 that we really started trying to develop a Center organization as opposed to project organization and that was where we ran into some of our major problems, some of which we didn't realize until much later. Later it became evident, and this part is kind of sensitive and must be treated with care when it is written. [We found out later that Walt Williams was busily engaged in doing his best to try to duplicate in the operations side of the organization everything that Faget had in the Engineering and Development side. He was doing his best to cut Faget out of the picture as much as he could. We found out later he was also doing his best to cut Dr. Gilruth out of the picture. He even went to the extent, which is hard to believe for a mature and intelligent man, of telling business leaders and other people downtown in Houston that Gilruth really wasn't running the Center and probably wouldn't be Director much longer and that he, Williams, would wind up as Director of the Center.] It didn't quite work out that way, and the organization really got, I feel, kind of straightened out when Mr. Elms came down, in, I guess, late 62 or early 63. It was Elms' efforts that really got what I felt was a sensible organization into the Center and I think it would be interesting as part of the pictorial part of the history to get a picture of a little plaque that was given to Mr. Elms when he left the Center. The plaque was composed of an organization

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chart made on brass plaques mounted on a walnut background with the signatures of the principal people in each organizational block engraved into the brass. The organization has not changed in character a great deal since then. We have maintained the same type of organization.

[Merrifield: Paul, would you like to comment on the fact that Elms only stayed one year and left relatively soon after Williams left. This was commented upon by press that he had served his purpose and was now moving on -- his purpose being to get rid of Williams. Is there any truth to that assertion? X

Purser: So far as I know, there is no truth to him having a purpose of getting rid of Williams and I base that to a large degree on the kinds of discussions that I had with Elms about the Center and the people involved in it.] When he first came down, he came to help get the Center properly organized to support the Apollo Program because we began to realize during that time period that Apollo and Gemini both were going to be much larger and more complex to run than Mercury had been. For example, we had been given a fairly generous promise of 3500 positions for the Center when we first came down here. We would not get them when we first came but would be allowed to grow to about 3500, all of whom would be Civil Service personnel, as we felt that we could handle the program with very few support contractors. We now have over 4500 Civil Servants and almost 6000 support contractors. We had underestimated the complexity of the task and Elm's job was to help determine the best way of organizing to do the job [and was not, so far as I know, in any way to get rid of Williams.] In part, this belief is based on a little personal interchange between Elms and me. When he

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first came down, he held quiet talks with almost all of the senior people on an individual basis, just to get acquainted and to find out how things operated. [I realized the rather tough position he was in coming in as another Associate Director or Deputy Director along side Williams and realizing the kind of devious role Williams had been playing in the organization, I told him that the only way that he was really going to get around that, was to arrange it so that he and Gilruth and Williams worked as a team on things that affected the whole Center.] From that kind of first teamwork fanned out to where Williams ran the operations part and Elms ran the development part. He continued, however, his kind of individual approach to problems. Whenever anything really cut across Directorate lines or Division lines he would talk to individual Directorates or Division Chiefs, reach his conclusions, and then announce them to the group. [About the time that he was leaving, we were having another general bull session and he reminded me of our first discussion and said that he would just like to let me know that he had disregarded my advice and he had been wrong in so doing. It took a big man to tell somebody something like that with no prodding and nothing to gain from it since he was leaving. Also, had there been any indication that he was supposed "to get Williams", Williams would not have come to Elms when he decided to leave headquarters and ask Elms to help him in getting a job in industry. This is a little private aside that can only be used with Elms permission; in fact, all of this last paragraph can only be used with Elms permission.] Otherwise it will have to remain hidden in the files until everybody dies. But, based on that kind of discussion, I don't feel there is any truth at all to Elms being here to get rid of Williams.

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The type of organization that we have now is worth a comment. We started out in the Science area with just a very few space scientists, primarily to act as translators between the scientific community and the Center and to convert data on the space environment, such as micro-meteoroids and radiation, into spacecraft design criteria. Toward the end of Project Mercury in the early stages of Gemini and Apollo, when we started conducting more scientific experiments during the space flight, we began to build up more of a space science group. We realized for a long time that we needed an accepted space scientist to head the group eventually. It took a long time to find one who was willing to take on the job of plowing new ground, of building a science effort in what was primarily a hardware research and development center. To be perfectly frank about it, we couldn't find a well enough accepted space scientist who had the guts to do something like that, until we got Dr. Hess, and he was willing to tackle the job. The addition of the lunar receiving lab, I think, halped make the job somewhat more attractive, [although it is getting tangled with Headquarters and the National Academy of Sciences in an attempt to bring the "scientific community" to bear on its operations.] *
The Medical Directorate started out pretty much as a staff position and as we grew it became evident that it had to be split out as a separate Directorate. This was done.

Merrifield: In addition to Walt Williams, there have been many changes in key personnel. Some people left for industry after being at MSC for a relatively short period of time, others have been shifted from top

management jobs to staff positions. I realize this subject is a sensitive area and must be handled with a great amount of discretion, but I think it has to be faced squarely. For example, in the Apollo Spacecraft Program Office there has been several important changes. Would you care to comment?

64 Purser: Yes. Bob Piland originally assumed the job as head of the Apollo Program Office, not because he had any particular ambitions to be the Apollo Spacecraft Program Manager, but because he was a good smart guy who had been involved in the Program since its inception and was perfectly happy to keep it going until such time as we could find someone who really wanted to be its program manager. We got Charlie Frick from Convair as the first official full-fledged Apollo Spacecraft Program Manager. Charlie began his career at Ames Research Center about the same time that I started out at Langley. Around the early 50's, he left for industry [because it looked like there was little hope of financial advancement with NACA, which had entered a leveling-off period. People really couldn't see much chance for advancement until others retired, and as he had children who had reached college age, he just felt that the best opportunity for advancement was with industry. Here again, I wouldn't discuss these reasons without checking with him -- he may have had other personal reasons, and might not want that kind of personal reason to be used.] 38 He was a very smart guy, and well known to all of us because of our many years of association with him in NACA. He was known to be kind of rough-and-ready; in many ways, like Walt Williams. [Walt, of all people, had the nerve to describe him as coming into the office every morning like a drunken cowboy firing off 6-guns in all directions. Unfortunately, that's about the way he ran his

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business. He was firing off everything in every direction and was just too brusque and abrupt. He was dealing with equally brusque and abrupt people at North American and just couldn't manage to pull them together as a working team, so he left.] At the same time a change had been made from Brainard Holmes to George Mueller in Office of Manned Space Flight, and NASA Headquarters management philosophy changed somewhat. Not as much of the detail design would be done at Headquarters rather it would be done at its proper location, the respective field center. Joe Shea was offered the chance to come down and be Program Manager.

[Merrifield: Is there anything to the widely circulated rumor that the principal reason Frick left was that there another management level had been inserted between him and top management -- in this case Elms as Deputy Director?

Purser: It may have been, I honestly don't know, but to me, it just seemed that Frick realized that he couldn't pull us and the contractor together as a team and he gave up and went back to industry. It wasn't worth the struggle for the pay cut that he had taken to come back to work for us.

Merrifield: The second rumor was somewhat related to that, namely that Holmes in Headquarters was overcontrolling the field center. Frick felt that his office supposedly had the responsibility for specific decisions and was being overruled or second guessed from Headquarters.

Purser: Whether Frick left because of this, I can't say, but in truth, it was what was happening.] I just mentioned the change in Headquarters management philosophy between Holmes and Mueller. Mueller was more amenable to allowing detail design being done in the field centers.

Joe Shea was really more of a Headquarters type manager than the detailed engineer type manager such as Chuck Mathews and George Low, and it was felt that he could really contribute more to the Program from a position in Headquarters than from the field position. Here again, I am not sure to what exactly the reasons were for the change, and I think that sometime later, maybe 6 months from now, you could find out more than that through an interview with Dr. Gilruth.

Now another major change that created a fair amount of discussion was the switch in the Gemini Program Management from Chamberlin to Mathews.

75 ✓ [Here it was a question, I think, primarily of Chamberlin wanting to make every detailed decision himself. He just couldn't turn loose of any authority; he couldn't work as the head of an organization. He could work fine as the head of a small high-level team. As an engineer he is a genius, let's face it. But, as a manager he just wasn't what we needed.] Mathews is just as good an engineer in many ways, but in addition, had the ability to run a large organization, to delegate authority and responsibility where it needed to be delegated and yet retain the basic decision making authority where it needed to be retained. I think another personality difference that crops up in many ways, and particularly with very smart or very dumb people is that they feel that there is only one way to do a thing. [Jim Chamberlin was rather intolerant of anyone else's

suggestions about how to do things.] Mathews was much more willing to realize that there are several, in most cases, right ways to do something. I think that when people look back they see that as a preliminary designer, as a conceiver of the spacecraft systems and requirements, Chamberlin just couldn't be beat. There was not a single change made in the basic design of the Gemini spacecraft or its systems once they were established by Jim. The basic design and systems that he established were workable ones and it turned out to be a highly successful program. I think that many people tend to forget that part of Chamberlin's contribution. But you really have to have both proper initial design and good management. [Jim was wonderful in the original design but, unfortunately, was not quite as good in the management area.] Mathews, on the other hand, was outstanding in the management area as well as being an extremely smart engineer.

250 [Barry Graves was another kind of major organizational problem. This goes back partly to something I alluded to before about Williams trying to build up a duplicate of everything that Faget was doing in order to cut Faget out of the loop. He set up Graves' Assistant Directorate pretty much to try to cut Faget out of the Electronics Systems area. When Elms made sense out of the organization, he got that work back into the Engineering Development Directorate and Graves became Deputy to Faget. I think the combination of that change plus the personal desire to return to the Hampton area that led Barry to go back to Virginia. My own feeling is that it was more the personal desire on the part of himself and his family to get back to Virginia than anything else that led him to make that move.]

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The Shorty Powers episode is a rather long and involved one. Shorty was getting a little bit power mad, I think. He was backing Williams covertly rather than Gilruth. I believe he resented Slayton becoming head of the Astronaut Office, because Shorty couldn't be as much of a spokesman for the Astronauts as he had once been, as they now had a designated leader and spokesman. Furthermore, he really didn't try to make the situation work. He was also often at odds with Julian Scheer in Headquarters. That takes no special talent, as almost anybody can be at odds with Mr. Scheer. Finally things reached a kind of intolerable situation where Shorty just flatly disobeyed some direct orders that he had been given. As I recall, the straw that broke the camel's back, was when Shorty took a month leave of absence to make a tour for I think, World Book-Field Enterprises. He went around the country explaining primarily to World Book-Field Enterprise regional sales forces, something about the space program. I don't know how much money he made out of it, but it was a fairly large sum -- I would say more than several months of his normal pay. He asked Gilruth's permission to do it, and Gilruth approved it with the proviso that he get Scheer's approval and through Scheer Mr. Webb's approval. He found out later that Shorty had not gotten their approval. That was when the blowup came. Every effort was made to find some way in which Shorty's talents could be continued to be used, and an arrangement was made for him to work in Washington for Scheer, I believe, directing NASA's efforts in connection with the World's Fair in New York. Apparently he continued to over-exercise his talent for antagonizing Scheer and this new job didn't last very long.

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He reached the years of service at which he could retire from the Air Force and he retired and went to work on his own.

As another aside, again not from first hand knowledge but from reports from people who were involved, Williams got his Honorary Doctorate from LSU during the period when he was apparently doing his best to displace Gilruth. He got it by having Shorty go over and talk to the Public Relations people at the University, getting them to get the University president's ear, and having the orders for the Honorary Doctorate come down from the President rather than as is the normal practice of having recommendations for honorary degrees come up to the President from the Faculty Committee. The way it was handled left such a bad taste in the mouth of the faculty that when some of the faculty proposed that Faget be given an honorary degree because of his contributions as the real creator and father of Project Mercury and his continued engineering excellence since then, the faculty committee just wouldn't hear of it because he was connected with the same organization as Williams, and Williams had been jammed down their throat. It was that kind of operation that I think led to the eventual absence of both Shorty and Williams from the NASA scene. Some of this wasn't realized after they had left, but I think the effects of it were felt pretty continually while they were here. Now, you are going to have to be real careful how you treat every bit of this stuff.


Charlie Zimmerman, I guess, was the first senior person to leave Project Mercury. This was, to a large degree, professional personal preference. Zimmerman had always been extremely interested in aircraft

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capable of short takeoff and landing, vertical takeoff and landing, and combination of very slow and very high speed flight. He came into the Mercury Program, really by request, because he had both NACA and industrial experience. He started out with NACA in much the same way Gilruth and I did in the middle to late '30's. I guess he started out well before either of us did, because he was gone by the time Gilruth got there in 1937 and I got there in 1939. He must have started in the very early 1930's or late 1920's, doing basic aerodynamic research. Later he left for the Vought-Sikorsky Company, primarily to try to develop the Zimmerscooter, or Flying Pancake, the ^{V-}B173 or XF5U1 -- various designations by which this aircraft was known. It was basically almost a circular plan-form aircraft with great twin propellers, one on each tip. It was supposed to be capable of landing at speeds under 40 miles an hour and flying at speeds of over 400 miles an hour. It was to have the greatest range between high speed and landing speed of any aircraft that had been conceived up to that time. He stayed in industry for quite awhile and then came back to NACA, I guess, following some kind of reorganization that Vought-Sikorsky had when it became Chance-Vought, about when it was planning to move to Dallas to eventually become Ling-Temco-Vought. He came back to NACA during the late '40's or early 50's I guess. His background in both NACA and industry led to his selection as one of the major management elements to work with McDonnell in getting the Mercury spacecraft designed and built by them. We were all operating under a really forced draft at that time, and that combined with the fact that he was working in a field that was not as professionally dear to his heart as the other led to his leaving and going back to aeronautics research.

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Donlan on the other hand, started out in the manned space flight program very enthusiastically, did an excellent job as Deputy Manager. Williams was brought in to manage the operations side of the picture, and Donlan remained to handle the engineering and development side. Dr. Reed retired from Langley and Thompson became Director. He badly needed an Associate Director preferably one who had grown up with the place. He asked Donlan to come back to Langley to take that job. [Again, you would have to go to Donlan to get the reasons behind this decision, but I would not be at all surprised if he told you that he just was tired of fighting the power struggle with Williams and the Associate Director's job at Langley was just as interesting as the Associate Director's job with the Space Task Group.] It would not require any move on his part and would allow him to utilize possibly better all the experience that he had acquired during years at Langley. There may have been a good bit of that in it, but so far as I know, the prime element in that move was the desire on the part of Thompson to have what he felt was a good Associate Director and when he asked for Charlie, Gilruth was willing to give him up. *

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[In the area of intercenter relations, primarily MSC-Marshall relations, this has been a sore point from the beginning because I think that many of the people at Marshall resented being in what you might call a sub-contract role to NASA while they were part of ABMA and were furnishing the Redstone vehicles to us.] Marshall personnel had always prided themselves on being really the pioneers in space flight. As far as they were concerned, their rocket developments in Germany for the military was just an expediency by which eventually they could indulge in space flight operations. [On the *

other hand, they looked upon NACA and its successor, NASA as an old stodgy short-sighted research organization that kind of got into the space flight game politically. There was always this background of resentment between ABMA and the Space Task Group and then between Marshall and MSC.] There was also a difference in mode of operation between von Braun and Gilruth. Von Braun, for many years, ran his organization at Marshall with an iron hand and nothing was ever decided there without holding a big committee meeting over which Wernher presided and made the final decision. In more recent years, it has gone to the other extreme. Now the place has gotten so big that a lot of his people have held their own little committee meetings and gone off and done things before he found out about them, sometime to his embarrassment later. Gilruth, on the other hand, didn't hold formal committee meetings as such, but worked closely with his people and tended to delegate more authority and responsibility to individuals from the beginning than Wernher did. I first got involved with the ABMA group because in the early days of the Space Task Group, one of my primary jobs was to establish the initial relationship between Space Task Group and ABMA for the Redstone and BMD or SSD for the Atlas. Wernher and I developed what I think is mutual respect and friendship for each other. For quite a long time, I think I was really the only one in the Space Task Group that he trusted to be honest with him, not because the others were not honest, but because they were possibly more distrustful of him and his people than I was. In some cases I was more trusting and in some cases I was maybe less trusting, but at least with my discussions with him I was frank. I didn't try to play games. If there was something



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his people said that I didn't believe, I would tell him why. I think we developed a good personal working relationship. [Wernher has a tendency, to use an old American expression, "to run off at the mouth." If nobody else says anything, he just keeps right on talking. Gilruth, on the other hand, likes to wait until there is a break in the conversation so he can say something. He won't butt in on anybody unless he gets extremely agitated about something, and with Wernher there is never a break in the conversation. This little bit of personality difference created tension between the Centers, and was added to by the fact that during this period Wernher lost some degree of control over his people. Marshall had gotten so big that they were going off doing things that he didn't know were going on. I continually pecked away at trying to improve relationships between Wernher and Bob. About a year and a half ago, I spent a couple of hours sitting with Wernher in his office and saying some of these things that I have just been saying to get Wernher and Bob more willing to trust each other and to work together. I think the presence of Bill Davidson here at MSC has done a lot to help smooth relations between the Centers. Here again is another place where I think Williams did us a disservice. For some reason, he just purely despised Wernher and missed no opportunity whatsoever, to cut his throat behind his back. (Williams never cuts anybody's throat from the front -- unless he is of much lower stature than he is, but to an equal or higher person, he will always cut it from the back. You may detect a note of personal bitterness here, if so, you are right!)] But with Williams gone and with

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Bill Davidson here, with me working to pull the two Centers together, with Wes working with Harry Gorman whom he knows and has a great respect for, I think we have accomplished something. [On the other hand, I think that George Mueller and some of his troops in Headquarters have been somewhat less helpful in this area. I think they have been very much of a divisive element rather than a cohesive element.] I think as time goes on, the two Centers will grow closer together. I think we are making progress along those lines. I think the kind of things that you can put in your history are probably better obtained from Hjernevik.

[Wernher likes to consider himself now as kind of an all-American boy, and once in the very early days of the Space Task Group, he wrote Bob a very condescending letter, about how we were all working together as a team, and it was the duty of a teammate that whenever he saw one of his teammates with his shoelaces untied to tell him about it. He felt that Bob's shoelaces were untied. He had seen some very poor workmanship in the wiring of a spacecraft at McDonnell and thought Bob ought to look into it. He would be glad to have some of his experts help if Bob needed some help. Well, as it turned out, what he had seen was a hastily thrown together mockup. It was not a spacecraft and our shoelaces weren't untied.

Another time, when we were just beginning to get things rolling for Gemini, trying to decide what we were going to do, Wernher and his people came up to Langley. We discussed things for I guess close to four hours, and right toward the end of the session, Wernher started ranting and raving about us planning to use the Agena in the Gemini Program without having

contacted him first. At that time Marshall was in charge of the Agena. We shouldn't, he declared, be planning to use Marshall hardware, which would throw additional workload on Marshall, without checking first with MSFC to see if it could handle it and so on. He raved on for about half of an hour. Bob just sat there getting madder and madder and madder. Finally, Wernher kind of ran out of gas. The whole bunch of us went down to the Officer's Club for a reception and dinner. I got Jack Kuettner off in the corner and told him that Wernher had not helped intercenter relationships one damn bit with all of that, particularly in view of the fact that just two or three days before, a friend at Headquarters had given us a proposal that Wernher's people had sent to Headquarters that would let Marshall into the manned spacecraft business with a large orbiting laboratory using Mercury and similar spacecraft as ferry vehicles for it. He said, "My God, Jimmy, we did something like that?" I said, "Yeah, and it is kind of small potatoes for Wernher to be screaming about us talking about Agena in very preliminary stages within the Center. We haven't proposed this to Headquarters yet. Marshall has just finished making this proposal to Headquarters and didn't even have the courtesy to send us a copy of it, much less call us in to have a briefing on it, like we did you today." And Kuettner said, "Just a minute," and he went racing across the room, got Wernher, dragged him back, and he said, "Tell Wernher what you just told me." I told Wernher what I had just told him, and Wernher said, "My God, Jimmy, we did that?!" This is just at the time when he had lost control of his troops and he didn't know what in the hell they were doing. He went over and hunted Bob up and apologized profusely

to him for having spent a half an hour blowing his top. I told Bob later what had happened, so I think he was ready to forgive and forget, but I don't think Williams would ever let him. Whenever there was an opportunity, Williams would remind Bob that his shoelaces were untied, that he shouldn't use the Agena, etc. Those are interesting little personal sidelights on the intercenter relationships. Here again, it might never appear in anything except the Archives.]

15 Concerning our reception in Houston, and the way our people took to Houston, I'd like to make several comments. Houston was simply intrigued by the idea that we were coming here. As soon as the announcement was made Bob came down for a quick inspection trip, and practically before he got to Houston, Marvin Hurley and Ben Gillespie and somebody else came up to the Space Task Group. They spent a week holding a series of meetings with our people for about an hour at a time with anywhere from 50 to 100 people in attendance at each, talking about Houston -- what was here, what the housing was like, where good housing areas were, which were the better schools, and just any information that the people wanted to know about Houston from the standpoint of personal living. They offered to help in any way possible. I think they were the ones that helped round up Grace Winn, who was extremely helpful in finding housing for our people when they first arrived. [There was one minor problem, in this regard, and that was that Grace decided that anybody above division chief level must be rich. She tried to find a house for Hjernevik, and he had told her he wanted to buy a house in the \$35,000 to \$40,000 range. She rounded

160 up five places for him to see one afternoon, and all except one was between \$65,000 and \$75,000. There was only one \$50,000 house in the lot. She did the same for all of the senior officials; she just couldn't get it through her head that none of us made that kind of money. Finally, after about a year I guess, it soaked in that when people said they wanted \$20,000, \$25,000, \$30,000, or \$35,000 house, that's what they meant.] X ↑

151 The individuals in Houston are basically much more friendly and outgoing than the people we encountered in Virginia. My family felt as much or more at home after two years as we felt in Virginia after almost 23 years, and we were among the few NACA people who came from outside the area that were made to feel at home in the Hampton area. I don't mean to leave the impression that it was all the fault of the Virginians or Hamptonians, because NACA people had a very bad habit of trying to see how nasty they could be to the natives. NACA people had a pretty bad reputation, and some natives just wouldn't deal with them. Little anecdotes like the one about a hardware dealer that I dealt with all the time and also knew socially. He was a good friend, and told me one time, "You know, you are one of the few NACA nuts that I deal with." I said, "How come?" "You know, the kind of things you have to put up with. One guy bought an ice cream freezer from me, nice galvanized bucket in it, guaranteed rust-proof. About six weeks later he brought it back to me all rusted up, so I gave him a new one, and about six weeks later he brought that one back all

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rusted up. I gave him another one, and about six weeks later he brought that one back all rusted up. This was just too much. I said, what the hell are you doing with this ice cream freezer? It is well galvanized, rust proof; I've never had any complaints on them before and yet, three times in a row, you have brought them back after a month or six weeks all rusted up." And the guy said, "Well, it is guaranteed rust proof, and I've just been leaving it out in the back yard full of salt water to see if it really is." One guy, who is down here called up a contractor once to talk to him about building a house for him, and the contractor wanted to know what kind of house he wanted and the guy described it to him pretty well. "You seem to be pretty well fixed on what you want, did you design the house yourself?" The guy said "Yes." "You work for NACA?" and he again said "Yes." The contractor said, "That automatically adds \$5,000 to the cost." That is the kind of reputation those NASA people had. But here in Houston we were extremely well received. I think you will find, if you can dig it out of the personnel records, that close to 700 of the 750 people that moved down here are still here, and are happy. Of course, some of the wives, and the men too, made up their mind before they came down that they were going to be unhappy and so they were. Some of them are still here and still unhappy just like they said they were going to be. Some of them have gone back to Virginia or to other places. I would say that from the way we were received, not only as NASA people but as individuals, because my reception has not been really any different from others who came down, that Houstonians are just an outgoing, friendly, warm-hearted bunch of people in general. The whole city has a dynamic

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atmosphere about it that I and most other people seem to like. But it
is a good thing that air conditioning was invented, I'm not sure I would
have come down here if it hadn't been!