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**ORAL HISTORY INTERVIEW**

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Oral history interview with D. Brainerd Holmes  
[full name of interviewee]

~~NASA~~ ~~Manned Space Flight Office~~  
about Overview of Personnel & Operations & center relations  
[main focus of interview]

Title: 1962 - NASA, Director, Office of Manned Space Flight  
[interviewee's current and/or former title and affiliation]

Interview conducted by Robert B. Merrifield, Staff  
[interviewer's name/position]

Historian at ~~MSC~~ ~~DMST~~ ~~HR~~ ?  
[location of interview]

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enthusiasm.

July 3, 1968

Mr. D. Brainerd Holmes  
Executive Vice President  
Raytheon Corporation  
141 Spring Street  
Lexington, Mass. 02173

Dear Mr. Holmes:

At the request of Dr. Eugene M. Emme, the NASA Historian, this Center has agreed to assume responsibility for the preparation of an MSC history. This effort will place primary emphasis on the Center as an institution. That is, its general management philosophy, the evolution of its major organizational elements, growth and modification of its staff, management of its financial resources and contracts, acquisition of its facilities, and its impact on the economy, culture, and society of the community in which it exists.

This project is what can be termed a "contemporary history" since many of the people who played key roles in the establishment and evolution of the Center are able to give credible witness to the events and decisions occurring in this period. It is vital that these participants be consulted. This pleasant duty is mine as I have been commissioned to prepare this history. I am a professionally trained historian with considerable experience in research of this type.

I would very much appreciate the privilege of spending an hour or so with you in an interview for the purpose of recording your personal recollection of significant details that have a bearing on the Center's past. If you have no objection I would like to use a tape recorder while I am with you as it is a convenient way of obtaining a lot of information quickly and economically.

I recognize your time is valuable and limited and will leave to your discretion what you will want to comment on. I am interested in any information you consider to have been important to the development and growth of the Center. Please feel at liberty to go into whatever depth of detail you feel advisable and within the limits of your available time.

July 3, 1968

Sometime during the last week of July and the first week of August, I plan to be in your area conducting other interviews in connection with this project. If you have some open time during this period I would greatly appreciate the opportunity to talk to you. NASA's travel funds are extremely tight this year and I would like to schedule several interviews during this trip in order to avoid the necessity of a second trip to the same area. I realize also that this is vacation time for many families and thus will constitute another handicap to seeing a large number of people during such a brief period. So if you can fit me in, I will appreciate it very much. May I call your office in a few days to arrange for an appointment that will be mutually convenient.

Sincerely,

Robert B. Merrifield



INTERVIEW WITH D. BRAINARD HOLMES

July 30, 1968

I went to work for NASA at the time when Webb, Dryden and others were making the decision to select Houston to be the site for the MSC. In those days, the people at Langley were pretty happy being at Langley and most of them didn't look forward to going to Houston, primarily because of the strangeness that is always involved in going to a different place, and especially because living at Langley was very satisfactory. The decision from where I sat, which admittedly was on the periphery of things, was a socio-political one. It certainly wasn't a technical decision, and it wasn't program oriented. On the other hand, I think it was a decision that didn't controvert any goals of the program and when you are spending that kind of dollars in the country at large, it is important to think of the social and political implications. Even though there was resistance from the people moving from Langley, once moved and gotten over that traumatic experience, they liked Houston very much. I think this was due in a large part to the very warm welcome they got from local people.

The Center's first budget was to be something around \$90 million and it has more than doubled that. The fundamental decision was to form a hard hitting manned spacecraft organization that had to do with man in space, and would involve personnel, equipment and facilities to carry the Apollo program through to completion. If all we were really worried about was the program dollar and the program schedule it would have been far better to stay at a place like Langley, than go to a new area. The most important ongoing work at the time was the Mercury Program--Grisson and

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Shepherd had flown and Enos the Chimp was flown shortly after my arrival. That was my first indoctrination to an orbital space flight. That was followed by many unsuccessful attempts to get Glenn off the ground, aborted by weather and sea conditions. Those Mercury flights brought me very close to the management and key people at MSC, probably in a much faster way than would have happened otherwise because we were going through the strain of those dramatic efforts more as brothers in arms than as a bureaucrat in Washington directing a field center. I didn't look at my office as a Washington headquarters or the center of bureaucratic activity, but rather as a program office, and I wouldn't let people call it Headquarters. I am not sure but that it would have been better located elsewhere than Washington, but its function was to pull together the two and later three major centers associated with manned flight. In those early days, Cape Canaveral was not a NASA center but had elements from both MSC and from Huntsville located there. The major job of the program office was to be the coordinating and integrating factor.

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An interesting sidelight--Gilruth and von Braun with the support of their organizations were barely speaking to each other upon my arrival. I felt there was one thing I was able to contribute in the two years was to become enough of a target myself that the relationships, understanding and communication between Huntsville and Houston materially improved. I hope that has continued. When one runs out of dollars, and they will get shorter than they are now, that competition gets involved a bit, but in those days there wasn't a shortage of dollars it was a matter of time and effort to accomplish what we had to do.

I was one of the few people in the Headquarters environment that had

any experience running large programs successfully. I tried to gather around me the others who had done that. Therefore, I wasn't too tolerant of accepting theoretical and untried practices involving huge amounts of paperwork and great expense. In scheduling and control my staff and I insisted upon procedures we felt were simple, direct, and streamlined. A real case in point was how to schedule, and there were many fads for scheduling including PERT and variations of PERT which <sup>are</sup> as the old Gant charts except overlay so you can interrelate relationships and applied through a computer. In many cases, PERT which when properly applied is very useful, but <sup>not</sup> when arbitrarily applied, and costing a great deal of money. Our contractors would say they filled out all the data and sent us the bill; we never look at the data. I didn't support that whereas I would have supported any form of helping to schedule from which we would realize benefits. Further there is in Washington a tendency to have great meaningless meetings that go on and on. There is not time for that in running a hard hitting program not if it is run on time and within a budget. We would have stayed reasonably close to schedule, barring the catastrophe as was done in Gemini to a remarkable degree, and probably would have stayed within the budget predicted. It is difficult to look back and know whether we were on schedule. I think the schedule slipped tremendously. Instead of having many unmanned flights before we put a man on the booster, that number got cut back and cut back and our program today has much less conservatism. On the other side of the coin is that the history of the unmanned launches of the Saturn Program were so good that surely one could afford to say it's man rated earlier than we thought we could in the past. Regardless of that, a great deal of time was bought by this

approach to fewer flights scheduled in advance. The tragedy of the fire didn't help any.

184 It was apparent in those days that it was absolutely necessary to get some stronger people in the organization. Joe Shea was brought to my attention by the Bell people and I brought him in. He had had a very distinguished career and a very fine reputation both at Bell Labs, AC Spark, and General Motors and he had just left AC Sparkplug to go to STL. He agreed to come <sup>to</sup> head up our systems engineering which I felt was one of the best things that could have happened to NASA. Shea in leaving NASA after the Apollo fire tragedy wasn't much loss to Shea, but it was a great loss to NASA. We don't have men like that walking around to latch onto very easily. I also met at that time, Jim Elms. He seemed to be a man of experience and management talent that could bring organizational concepts to MSC with its great growth that neither Gilruth or Williams with their background seemed to be able to bring. Gilruth a good part because he was and is a technically oriented man. Even though I might add he is one of the men I respected the most <sup>in</sup> for the entire organization. Williams was much more of a field operator, support man for the field, a pragmatic man. Elms seemed to have a flair for organization and I came to learn later that he had almost no personal organization--he was a very disorganized person--but he does have and did a wonderful job in formulating for others how to organize and the methods of organization. I feel he made a major contribution though he was there less than a year before he joined me. The reason I brought him to MSC was to furnish expertise in management during that very difficult period of extremely rapid growth.

Despite all the pressures from various areas in the south (so much



so there were jokes about Webb rebuilding the South), White Sands was chosen not for that reason at all, but because it was the most economical place to go. As an instrumented range did exist, we had to do very little investment--none in land--as it was government property, and not very much in support, since it already had a fully supported range operating there. There might have been some overtones, but it wasn't apparent to me of not wanting to go to either to Mississippi Test Facility because it was a Huntsville-type environment. I think the only place we could have had a firing range was either Canaveral or White Sands. White Sands was chosen.

After my departure there was a great increase in support contractors. There was great pressure from the President on down to keep the government payroll as small as possible, and in keeping the government payroll down, it was necessary to go to industry for support. One of the serious mistakes that NASA made was the lack of appreciation at the top for the fact that NASA had to be extremely careful in its total administrative growth, or a large percentage of the budget would be used up just to support in-house people, and which eventually could be self defeating, especially in a period of declining budgets. The general administrative philosophy that Webb used was one I think might be expected from a man who is skilled in politics but not administration. He compromised so that instead of having the funds flow to those Centers for which the funds were authorized to promote the growth of the manned flight program, he had the majority of it flow there, but all the other Centers grew too. They grew whether they increased mission or not, and they made increased missions by growing. This created a considerable problem for the investment both in manpower and the capital equipment. It behooves any agency during its growth period

to keep to a minimum the number of key government people. They should be permanent, high quality, and well paid. Everyone else should be hired to do routine work. The Agency people would lead and manage, set up the controls and in any cutback, the contract people would be dumped, and protect the agency staff from that type of fluctuation.

210 All the data that was brought forward showed that the small local organization that was part of the General Telephone system that would have served the MSC was much shorter on facilities and had a much poorer record for consistent service than Southwestern Bell. On top of that, we were quite worried in those days about making certain that all the data processing equipment we intended to put in at MSC would be easily tied into the national telephone network. It seemed to us that Southwestern Bell was by far the more qualified to do that job. Politics did not really enter into it. I don't think Thomas got into that at all. He didn't make a call to me (and he called me quite often), nor did anyone in his office, nor did anyone at NASA say we want to do this because of Thomas. The only time I got a call as far as pressure was from the representative of General Telephone to come see me. It certainly wasn't a hot political issue, at least not when it got to me.

248 The loss of Williams was extremely important. There was some friction between him and Gilruth, mostly from him toward Gilruth. I never found the working relationships seriously impaired by this. They worked together quite well. It was mostly talk and frustration--to get off of one's back. I think Elms contributed significantly to the split-up and to Williams leaving. Despite the complimentary things I had to say about Elms ability to professionally plan an ~~organization~~ <sup>ed</sup> ~~ed~~, which he does have,

I think Williams was worth far more to the organization than Elms, and if it really were that Elms entry on the scene caused Williams to leave, then it would have been a wrong thing to have brought Elms to NASA. That's how strongly I feel about Williams' contribution and his abilities. On the other hand, he might have left anyway. During Elms eight or nine months at Houston, however, he didn't help that situation any. Neither did Williams. Williams was a very strong, able man and helped materially in getting Mercury going and making it as successful as it was.

yo I think without a doubt, the wisest man I knew at MSC and perhaps the second wisest man in NASA, in my judgment, is Bob Gilruth. I think he is an extremely sound, well oriented technical man. But to administer a Center of that size, he needs a solid administrator. I had always thought that George Low was a very able administrator. He certainly was when he worked for me.

vs One of the wisest people and the most competent individuals I've ever met was Hugh Dryden. I think he provided a certain balance because of his seniority and statesmanlike attitude while he was alive. His departure was indeed a very great loss. I don't think it will be fully recognized how great a loss, how many mistakes were made at NASA after he died, until some years have passed.

143 One of the primary needs that became evident at NASA if we were to succeed with a manned space venture, was to pull it together at the Centers. It seemed impossible to pull together the Centers unless their leaders would talk with each other, so I conceived the Management Council. I believed that if I set up a regular meeting between the leaders at the same table, with me as a moderator, the communications and understanding would

improve. This proved to be correct. It started improving with the first management council meeting and got better from that time on. The second very important advantage of the management council was that it allowed us to take the leaders responsible for the three major elements of the manned program with their informed judgement and through interchange of ideas to arrive at the best possible divisions. Some felt that it was their business, but it wasn't really an individual Center's business, it was the nation's business to go to the moon, and as such it deserved the best possible judgement in that direction. To my mind, the best way to accomplish this was to have a board of directors or a Management Council with in-house heads and senior people responsible for each major activity. I felt that judgement was tremendously worthwhile. I also believe that we would never have achieved a decision as to the method of going to the moon with all the many people with different ideas representing strong organizational elements in government and out in the time scale we were facing if we hadn't had a unanimous position taken by the Management Council and presented with the management council present, by me to Webb. That group of individuals with all their different backgrounds and different pressures couldn't possibly have taken a unanimous position if they hadn't been sitting together working on the problem and each element of the program with me so they could be equally well informed and ready to reach such a decision. The fundamental significance of the Management Council lay in its communications interrelationship starting at the top between Centers. The judgement of that informed group helped me lead the total program from the program office.

Shea stayed five years as head of ASPO, which was a major sacrifice



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for an industrial manager, and I think he still would have stayed longer except for having been made a scapegoat by political Washington for the Apollo tragedy. In Shea's case, while he made a <sup>great</sup> contribution, he didn't plan when he came to NASA, to stay his whole career, although I think he probably would have stayed until the lunar landing if it hadn't been for the difficulties that arose. In the case of some of the other people, they really weren't hacking it so they were gotten rid of. One fellow was gotten rid of after a short tenure. [Jim Chamberlin, even though he was a very able individual, was more technically oriented than manager oriented and the Gemini program wasn't being managed the way it should have been. I concurred in that decision.]

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Our advanced planning related to the Apollo program--we were looking out five years. Program planning out much beyond five years isn't usually very practical or pragmatic. We were more program oriented than we were total planning oriented for the operation. Which wasn't any cause for concern because the program extended out so many years--it was still early in the 1960's and the lunar landing wouldn't be until the end of the 60's or 1970. I felt the planning on the Apollo Program was quite good and quite thorough. I think, however, in such an environment institutional planning, especially in new institutions does get neglected. It would have been a better organization if the Headquarters staff, which was probably several times too large anyway, had addressed itself to institutional planning for all of NASA: the total manpower budget within the organization, the facilities, how these would be supported once the programs were over. If the Headquarters staff had addressed itself to that instead of duplicating program management it would have benefited everyone. I don't

think there was enough experience at the helm to see this. No one had ever run an enterprise of this administrative complexity and size. Although they were doing their best, they were inexperienced in management. The one man who had an innate wisdom to see the problems was Dryden, and he was a sick man.

I don't agree with the statement that the politicians sold the MSF program. That is sheer nonsense. The President was an exception and he was perhaps more statesman than politician. He was a creative leader of the people who contributed the most of anyone to selling the program as an individual. However, the single strongest consideration was the fact that the Russians were ahead of us. The American public was very willing to be extremely interested and it is hard to compare anything that could be more thrilling than the act of putting an American in orbit. I feel it was the contribution of the technical people plus the President of the U.S. plus the pressure of the Soviet Union's accomplishments, plus the thrill of witnessing a great adventure--and all these caught the attention, imagination, enthusiasm of the American people. Now with stretchout flights, the Russians have fallen behind, and essentially no replacement for Kennedy as a national creative leader whose indorsement of the Space Program is meaningful. I am not critical of Mr. Johnson, because even Mr. Kennedy today with Viet Nam, etc., might be less enthusiastic in his support. If alive, with his flair and imagination, I'm sure he would find a way that we might continue in space.