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ORAL HISTORY INTERVIEW

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SUBJECT OF DOCUMENT: [use relevant bold-face introductory terms]

Oral history interview with Dave W. Lang  
[full name of interviewee]  
about Apello RFP  
Procurement, estab. of MSC.  
[main focus of interview]

Title: 1962 Procurement Division Office  
[interviewee's current and/or former title and affiliation]

1968 Dir of Program Control & Contracts

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

Historian at MSC  
[location of interview]

Transcript and tape(s). [for inventory only: # pages 15; # tapes 1]

Master 1

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Biographical - [date/place of birth; family background] \_\_\_\_\_

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Education - \_\_\_\_\_

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Career Path - Air Force Logistics Command, Wright Patterson  
AFB; 1961- STG

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Topics - July 1961 technical briefing about Apollo program;  
Request for proposals; Source evaluation board 4-6  
Week review; North American Aviation Co won;  
Mercury Prog ongoing; Procurement  
Staff-building; Houston  
relocation - site description; 1st industry briefing  
1962 lunar module RFP & selection (Grumman);  
Apollo Guidance & Navigation System (AC Electronics);  
Houston image; MSC impact on education in  
Houston & Texas; procurement activity:  
leases for 14 locations, rehab. of Ellington AFB,  
acquisition of equipment; incentive  
Contracting (Cost, performance &  
Q Schedule)



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August 23, 1967

Dave:

I am enclosing the transcript of our interviews, edited lightly to remove extraneous material. In case you feel that it doesn't read like a best seller, don't let it bother you -- I expect it will be of primary value as research data, and it is unlikely that I will quote anything you have said verbatim.

I would appreciate it if you would look over your statement and mark with brackets ([]) any material you think might embarrass the Center or some individual. I don't believe there is anything of this type in your statement, but perhaps there is, so I'll let you be the judge. If you want to add anything that you may have overlooked during the interview, just tack it on the end.

If you have any changes return the transcript to me and I'll return a copy to you for your personal file.

*Bob*  
Robert B. Merrifield

9/5/67

*Bob*

I have reviewed - the statement looks O.K. to me - sounded like I was running out of gas at the end - or hurrying to a meeting but otherwise is a reasonable synopsis of 50+6 busy years - *DKL*



Interview with D. W. Lang on 5/3/67 and 5/9/67

LANG: I guess my first recollection of the Space Task Group and the people that were involved in it goes back to about late May or early June of 1961. I had had a call from Gordon Tyler, the procurement officer at the Goddard Space Flight Center. He told me that there was some interest in acquiring another procurement officer for a position similar to his to be located initially at Langley Field, Va., but then to move to some new location yet to be selected but likely to be in Texas. He recalled that I was a Texan and thought I might be interested in being one of those interviewed for the job. It just so happened at that time we were going through a major reorganization at Wright-Patterson Air Force Base and while I had committed myself to a position at the Air Force Logistics Command, I was available for some transfer consideration. I went to Washington and talked to Wes Hjernevik. That was an interesting experience because nobody ever spells Wes's name right and I was not any different. I spelled it Yarnovic, the Polish spelling, I thought, and of course it turned out that he is Norwegian, and his name is spelled Hjernevik. That was the way I got started. Wes Hjernevik told me that I was one of several people being considered and he would let me know in a few days whether or not I had been selected. We talked about the fact that the site had not been selected, and the kind of program that it was going to have. I told him I already had a fairly successful career and it sounded to me like all he was offering was a chance to break it. We also talked about all the other things that are important -- certainly not money because there was very little monetary advantage in transferring from one part of the government to another -- the idea of this new challenge,

Note → See notes for other source materials



86 building a complete new major research and development center and the project to send people to the moon. Of course, this all took place shortly after the lunar program was announced by President Kennedy. I guess I was one of the large number of people that were later acquired and brought to the Space Task Group to help form the initial cadre that was going to become the Manned Spacecraft Center. Anyway, about a week or so later, I got a call from Wes and he told me I was the man that he had selected for the position of Procurement Officer for the Space Task Group and wanted to know if I would accept. I told him I wanted to think about it.

86 I thought about it for about a week and finally agreed. It was a traumatic decision. I think it was the kind of decision that a lot of other people who were going to be affiliated with this program were making about the same time. It meant pulling up roots. I had been at the Wright-Patterson Air Force Base in Dayton, Ohio for 10 years, was fairly well known in the procurement business from having been associated with most facets of it at Wright-Patterson, and this was kind of a jump off into the blue. But now that I look back on the past 5 or 6 years, it obviously has been well worth it from the standpoint of not only the experience, but the accomplishment, the way of life here in Houston and all of the associations that have come along with it.

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108 I arrived at the Space Task Group early in June under an arrangement where I could serve as a consultant until my transfer actually took place. The reason for this was we were then beginning to prepare for selection of the first major contractor who would build the Apollo spacecraft. There had been three study contracts up until that time that had been

awarded on the Apollo program. One was with the Martin Company, one was with GE, and one was with General Dynamics. These had been studies of about a quarter of a million dollars each. They had studied aspects of a manned lunar landing from information that NASA made available to them. They had done a considerable amount of research and had developed essentially a concept and a plan for accomplishing the lunar mission as it was defined at that particular time.

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The next really significant event that I can recall took place early in July. This was a very large meeting held in Washington at the Department of Labor auditorium. It, in effect, was a briefing for all of the contractors interested in the proposed Apollo program. At this briefing, representatives of the Space Task Group made a series of presentations on the research and development activities that had been conducted in-house at NASA. The major contractors who had performed various related studies, I believe, also made presentations. In any event, this was a very comprehensive, thorough technical briefing which attempted to bring all industry up to speed on what we knew at this time about the kind of spacecraft that we thought might be suitable -- the means and modes of attacking the job of landing men on the moon and returning them within the decade.

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After that major industry briefing, we went back to Langley Field and began preparing the requests for proposals to go to all of the various industrial concerns. I think you probably will want to go to some material that we can make available to you that would indicate how many companies were solicited, and who the companies were that responded. You might even want to know who the members of the source evaluation board were, and that information we can also make available to you. Anyway, we began

to prepare the requests for proposals, the source evaluation board was formed, and around October we released the RFP.

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After the proposals were received, we went through a lengthy and complex evaluation. We held this evaluation at the Hotel Chamberlain at Ft. Monroe, Va. We leased a couple of floors at the Hotel, locked all the members of the source board in the hotel, and they actually lived and worked there for about 4 to 6 weeks in detailed study of the proposals that were sent in. Some of these proposals were in five volumes. There were 50 copies of each, and some weighed as much as 1500 pounds. The RFP's themselves had weighed 300 pounds as we provided the competing contractors all of the data and information that had been accumulated by NASA, as a result of in-house and the various contract studies. The idea, of course, was to ensure that industry had as much information and as much knowledge as could be possibly provided about the program so that we, in turn, could be provided with the best possible proposal.

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We completed our evaluation sometime in November and we made the presentation of the source evaluation board to Mr. Webb on the day after Thanksgiving. I remember it well because I commuted between Dayton and Langley Field, Va. I flew on the Kittyhawk, which was the military plane from Dayton to Washington. I would sleep a few hours in the "Air-Wait" -- one of those airport hotels, and then I would catch NASA's morning shuttle flight to Langley Field. That was fine until winter began, and then it was a pretty sporty course. Little did I know at the time that I accepted Wes's offer in June that it would be 9 months before I ever got back to home living again, as it was that period of time before we actually got resettled in Houston, Texas.



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I don't recall when Mr. Webb made the announcement of his selection, but in any event, the North American Aviation Company -- their Space and Information Systems Division -- was selected for negotiation. As part of your research, you might want to look at the Administrator's Selection Statement, which we have as part of our contract files, and will give you some of the rationale behind the selection. As I recall, it was primarily based on the contractor's depth of experience in manned flight activities. NAA had built good airplanes, had been deeply involved in advanced research and development programs like the X-15 and the B-70, both of which were manned vehicles. The X-15, in many respects, was closely akin to space-type research and development.

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As I recall, the first meeting we had with North American was in early December. We called them to Langley Field to initiate our negotiations with them. We negotiated with them during the early part of December and finally awarded them a letter contract around Christmas. NAA officials went home with this letter contract in hand prepared to undertake the initial work that had been laid out for them. During that first year of effort in the Apollo program we were planning all of ~~that~~ <sup>The</sup> design and development effort that would lead to the building of an engineering mockup.

While all of this activity was going on we were still concerned with a couple of other things. We were still deeply involved in the Mercury program and the contract with McDonnell. At this time only the very early Mercury suborbital flights had taken place. We also had started some study effort on a program we called Mercury Mark II which later became the Gemini Program. It began as a study effort under the old Mercury contract.

86 Also during this time we were busy building an organization. When I arrived at the Space Task Group, the total staffing of the procurement organization was 26 people, and that was the total authorized strength. This covered not only procurement activities, but transportation functions, supply fuctions, and the industrial property function as well. Later on we decided to split off supply and transportation functions as separate activities. This move permitted the procurement and contracts division 94 to concentrate primarily on its relationships with industry and the award and management of contracts rather than in-house logistics problems inherent in transportation and supply. This was, I think, a good decision because it allowed us to concentrate our efforts on the building of a procurement organization and to prepare for the kind of growth and program that was obviously upon us.

81 About this time I began to acquire the staffing that became the hard core of the procurement organization. Glen Bailey had been the contracting officer for the Mercury Program. He remained with the organization and has been with it ever since, as contracting officer not only on Mercury but on the Gemini Program and still later as head of our Advanced Applications and Flight Support Procurement Branch. Bill Parker, my Deputy, I acquired during this period of time. I met Bill at the airport at Washington on one of these fly thru's on the way to Langley and interviewed him. At that time, he was at the Goddard Space Flight Center, but was an old Louisiana boy who understood that there was a possibility that this center was going to be located in Texas and he didn't mind being transplanted there. I discovered since then that Texas is full of transplanted Louisianans.

As we built the organization we acquired people throughout the fall. Those who came understood that MSC was going to be moved shortly. The announcement as to the location of the Center didn't take place until September 1961. We moved the first people to Houston in October 1961. Bill Parker led the first cadre of our Procurement people. Some of the technical staff also moved to Houston. We acquired some quarters, a couple of rooms, in the Gulfgate Shopping Center. Marty Byrnes was more or less the Project Manager down here.

This was an interesting environment to be in because Houston was quite happy with the thoughts of having acquired this major center and there was little that they couldn't or wouldn't do for us. The shopping center made these offices available without charge, and various companies around town offered furniture and equipment to help us get started until we got our own. It was a very pleasant reception that the city and the entire area gave our initial cadre.

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We established the air shuttle service between Langley and Houston and I came down on it early in October to see the Site, check the activities and more or less get prepared for my own move. I remember vividly my first impression of the place. Bill Parker picked me up at the airport and we drove over to the Gulf Freeway. We turned right on the Gulf Freeway, and we drove and we drove and about all we could see was flat barren prairie. Finally I asked Bill, "Where is Houston?" He said, "Well, it is 23 miles back the other way!" Finally we turned off on FM528 (I found out later that FM stood for Farm to Market). We crossed over the Freeway and drove through a little town called Webster. At that time Webster was a village of maybe 300 people, with a one-pump gas station and a little country



store. We drove down a 2-lane road scored on either side by fairly deep ditches, through an area of flat prairie land. Off to the north there was an old decrepit windmill, a water tank and some cows. Bill said, "Well, there is the site."; and I said, "Bill, you must be kidding! Nobody could have done this!" He said, "No, this is where it is." Over on the right was another stretch of prairie, this with some trees on it. There were also some big white cows, and I found out later these were a fine breed of cattle, Charolais cattle. This was a 600-acre cattle ranch that later was to be sold to a group of developers for about \$3.1 million and is now the major commercial, industrial and residential complex called Nassau Bay.

118 We drove on down FM528 toward the next little town, Seabrook. On the way we passed the old Silver Dollar Jim West Mansion, and crossed a bridge over a small estuary that led into Clear Lake. Of course, that was obviously a misnomer because Clear Lake wasn't very clear. Near the bridge, across the highway from the lake, a 60-foot yacht was lying on its side in the mud. I inquired as to what had happened and Bill said that this was part of the damage caused by Hurricane Carla which had moved through the area within the last several weeks. As we drove on to Seabrook I saw what he meant, because much of the shoreline of Seabrook and the adjoining community, Kemah, had been moved back about a half a mile from its former location. Scattered along the railroad track was all types of household items. A house had been blown completely off its foundations and was leaning against the railroad embankment. The ditches were full of furniture and clothes, and as we drove along the shore we witnessed a picture of severe devastation. We drove around a couple of nearby

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residential areas, Timbercove and Swan Lagoon. There weren't very many houses in these residential areas, and those along the water front in these areas had been severely damaged by Hurricane Carla. Bill had already acquired one of two homes that were available in Timbercove and Hal Christman our Small Business Officer had purchased the other. I made a committment for a lot in Timbercove because this looked like a likely place, but I thought to myself, how in the hell am I going to bring my wife down here? At the time, we lived in the beautiful rolling hills of the Miami Valley in Ohio and now I planned to bring her down to this flat Gulf Coast prairie. That was going to be a real experience I felt sure.

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This was in October 1961 and we were beginning to prepare for the major move of people to Houston. The major portion of the MSC management staff moved to Houston during January and February. I arrived early in February, and about the 8th or the 9th we had our first big industry briefing. We held it at the Shamrock Hilton Hotel and used their display room.

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The purpose of this briefing was to introduce the Manned Spacecraft Center and its business operations to the local community. We invited local businessmen, bankers, and all the various groups that would be interested in the growth and development of the Center, particularly in how to do business with the Center and its contractors. We held this meeting in conjunction with the Houston Chamber of Commerce, and we had quite a session. I guess there were around 3,500 people who visited our displays and those of our various contractors. We had a luncheon for about 1,500 people in the Emerald Room at the Shamrock Hotel. There we

made a presentation on the general program of the Center. It was a very successful meeting. We told them a little bit about what we expected to be doing in the next few years, what we expected to be buying, and how, in effect, they could do business with this major government installation.

From then on a heck of a lot of things began to take place. By this time the Gemini Program had pretty much firmed up and we were deeply involved in its contract negotiations. We were also beginning work on the Lunar Excursion Module procurement. We prepared the RFP's that went out to industry later on in 1962 and here again I think you ought to be sure you know what the dates were for the Lunar Excursion Module RFP because there were also some important decisions that were made as to operational mode. Our initial contract, with North American had contemplated a direct lunar landing and later on it was decided that the lunar orbit rendezvous mode would be employed instead.

272 In any event, during the early part of 1962 we began preparation of the lunar module RFP, established the source board, and the source board received the proposals from the various companies. I was a member of that source board and as I recall the dates, we made the selection of the contractor, in the fall of 1962. The final selection, of course, was made by the Administrator again and the Grumman Aircraft Engineering Company of Bethpage Long Island, New York, was the successful bidder. We invited company officials to Houston for negotiations with the idea that we would negotiate a definitive contract rather than the usual initial letter contract. A letter contract, you know, is a preliminary instrument that says go to work and here is some broad general details, don't spend anymore than this specified amount of money, and we will get



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together with you on the details when we've got them all defined. In the case of the Grumman contract, we made a decision to define the program in advance as well as we could and to make a definitive contract for that portion of the program that we could define. We met with the entire Grumman management and negotiation team for about a month. We took over the Franklin Apartments and used them as a meeting place for our negotiation effort and discussion, and concluded that contract around October. When we were through, we had a contract for \$486 million dollars, one of the largest R&D contracts of that nature that had been awarded. This was on a cost plus a fixed fee type basis.

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We had several other major competitive procurements that went on during this time period, one being the procurement of the Apollo Guidance and Navigation System which was awarded to AC Electronics. It was really awarded in about three pieces, and started off as a contract with MIT.

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I have had many discussions with Houston businessmen concerning the economic impact of the Manned Spacecraft Center. You can find a substantial amount of data on this subject in papers I have presented to groups like the Gulf Coast Area Development Committee and the Houston Chamber of Commerce. A lot of people expected that with the establishment of the Manned Spacecraft Center, Houston would become a mecca for the Aerospace Industry. Companies would move plants and facilities for research and development operations into the area. It is certainly true that there has been a large number of companies who have sent representation into the area, but there has not been a major growth in manufacturing or R&D facilities as a result of the establishment of the Center here. Most of the contractor

people that are here are in a supporting role to the Manned Spacecraft Center, such as Philco personnel who support the Mission Control Center, IBM personnel who support the Real-Time Computer Complex, Graham Engineering and others involved in facility support, and Brown-Root-Northrup combination engaged in laboratory support. I guess there are 6 or 7 thousand of these people supporting the activities of the Center, but few companies have moved manufacturing or research and development laboratory operations to the area because the Manned Spacecraft Center is here.

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Nevertheless, I think that over the past 5 years Houston has developed an image that never existed before. Houston has always been thought of as a center of the oil and gas industry and it now is beginning to be recognized in roles other than that. An increasing number of computer companies have moved into the area -- for example, McDonnell has an automation center here. Computer Sciences also has a group here, and there have been other small companies who have established operations here, such as the Spacecraft Group out of Huntsville and Gulf Aerospace, just to name a couple. I think the general anticipation of the local business community has not yet been fully realized, although I do feel that the dynamic nature of the Houston business activity has become much better known to companies who never thought of Houston as a potential location before. In the next 5 to 10 years I expect a further growth in the business activity of Houston in areas that are directly related to aerospace work.

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Another significant area of impact that we have had, has been in the field of education. As you know Rice established a Space Sciences Program, as did also Texas A&M. We have had a number of research contracts

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with Graduate Research Center of the Southwest in Dallas, the Southwest Research Institute and the Houston Research Institute, all of whom are nonprofit organizations. The Corps of Engineers, as you know, was responsible for supervising the building of the Center here, and we funded the substantial amount of dollars expended for that purpose. Procurement played a role in the development of the facility here in three major areas. First of all, we entered into all the leases that were involved in our initial move to Houston. We had about 14 different locations and leases for everything from warehouses to office facilities in apartment houses and these were all temporary installations that in anywhere from a year to 2 years after we had acquired them were turned back to the original owner or lessor. We rehabilitated a good share of Ellington Field for use by MSC. Even after we remodeled those barracks at Ellington Field into offices, when the days were warm the bugs would come out of the walls. Also one unhappy aspect of a barracks: after 17 years as a BOQ, you can't get rid of the BOQ odor. They looked pretty good with paint and a little bit of paneling, and the air conditioning we put in there helped, but they still smelled like an old BOQ.

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We were also concerned with the acquisition of the equipment that had to be installed in many of the facilities. Equipment that was an integral part of the facility as in Chambers A and B, we did not buy. That was part of the Corps of Engineers construction contract. We did buy the peripheral test equipment, the solar simulation equipment, and much of the refrigeration equipment that was installed in the buildings. In the Mission Control Center, Philco won the contract for the design, development, and initial implementation of the control center equipment.



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Since then we have contracted with them for the continued upgrading and development of the equipment for future mission purposes and also for the continuing maintenance and operation. Correlary with the equipping of the MCC was the real time computer complex procurement awarded to IBM. The installation of computer equipment in the Data Reduction Facility was awarded to Lockheed. Around the Site there must have been about 100 million dollars worth of laboratory equipment purchases for testing and evaluation purposes basic to the mission of the center. The simulation and training equipment we procured in large measure from General Precision Equipment. Practically all of the major technical equipment suppliers of this country have participated in this program to some degree.

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Another thing I think that you ought to be aware of is the whole business of incentive contracting. When we started in 1962, we didn't have a single incentive type contract, but as a result of some of the emphasis that the Department of Defense was putting on incentive contracting, and our own examination of the appropriateness of incentive contracts here at the Center, we began using these contracts, not just as a new contracting technique, but literally as a part of the management practice of the Center. In 1963 we began to enter into a few contracts on an incentive basis and by 1966 we had converted practically all of our major systems and equipment contracts to some form of an incentive arrangement. Most of them were on some structured form, the more popular form being what we call the planned interdependency incentive method and there is a good paper on that written by George MacDougall that explains that particular method. It is one of the innovations of the Center and you might

want to take a look at it, because I think we pioneered in that particular field. The first very large contract that we entered into on that arrangement was Gemini, and that was a pretty successful incentive-type contract. I think we have a direction from Mr. Webb to develop a complete chronology and history of the incentive aspects of the Gemini contract. I think you probably will want to talk to MacDougall about it. There is a lot of history that is connected with it. We made a major study, in conjunction with the Gemini Program Office, of all experience that had been gained up until that time (around 1964) by primarily DOD organizations who were in similar developmental type work. Then we hired a consulting firm, the Management Systems Corporation, and finally, after considerable period of negotiations with McDonnell, entered into this incentive arrangement. Cost, performance and schedule were placed on an incentive basis, and the contractor earned a substantial incentive award as a result of the quality and success of the Gemini Program.