

Entry Date 5-11-93
Data Base HDOCNDX
Index # INS. 0205963

ORAL HISTORY INTERVIEW

DATE OF DOCUMENT [Date of Interview] = 12-12-67
OFFICE OF PRIME RESPONSIBILITY = JSC
NUMBER ON DOCUMENT = 00
TYPE OF DOCUMENT [Code for Interview] = 1
PROGRAM [3-letter Program Archive code] = INS
AUTHOR [Interviewee's Last Name] = BYRNES
LOCATION OF DOCUMENT [Numeric Shelf Address] = 091-1

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

Oral history interview with Martin A. Byrnes, Jr.
[full name of interviewee]

about establishing Manned Spacecraft Center:
[main focus of interview]
facilities and personnel

Title: 1962 - Mgr, Center Operations Office
[interviewee's current and/or former title and affiliation]

1968- no

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

Historian at WSC
[location of interview]

Transcript and tape(s). [for inventory only: # pages 44; # tapes 3]

CONTENTS:**Biographical** - [date/place of birth; family background] _____**Education** - _____**Career Path** - 1959 Mgt Assistant to Director of Space Task Group

Topics - Space Crunch at Langley; Weekly STG Project Operations meetings; Sept 1961 STG Group to Houston; meeting w/ Corps of Engineers (74 words); Chamber of Commerce help with temporary facilities; urgency for leasing space; Richman Co, Houston Petroleum Center, Farnsworth-Chambers, Lane-Wells, UH Radio-TV Bldg, Canada Dry Bldg, Minneapolis Honeywell, Franklin Apts, Peachy Bldg, East End State Bank, VA Bldg, Ellington AFB, Uniform Color, Seal & Signage on all bldgs; ^{offices} move from Langley; tour of West Ranch Site; debris from Hurricane Carla; guests of Rice U. Pres Pitzer; State funding for roadways to MSC; community/business relations & speaking engagements; job applicants; Col. Paul West & Corps of Engineers relations; early ^{designs over} Budget; selection of SW Bell Phone Co; mail service problems; improvements at Ellington AFB; visiting Senior NASA personnel; shuttle plane from Langley;

Stahl-Meyers
Bldg's
offices

University

(OVER)

transportation problems; move Coordination
from Langley; early assignments from
Gilbert: (1) Communications tie-line to
Cape + St. Louis; (2) Charter air carrier from
Langley to Patrick AFB; daily ^{construction} site
inspections.

AEROSPACE CORPORATION



1322

Post Office Box 95085, Los Angeles, California 90045, Telephone 648-5000

11 April 1968

Mr. Robert B. Merrifield
Manned Spacecraft Center
Houston, Texas 77058

Dear Bob:

Returned herewith and somewhat late is an edited version of the taped comments on early MSC.

Note that we have retyped many pages and emphasized the sequence breaks by starting the new thought sequence on a new page (note page 5).

Best wishes. Things are going great. I'm back to work and feel fine. I hope to get to Houston again early in May. See you then.

Sincerely,

Martin A. Byrnes, Jr.

MAB/ch
Enclosures

INTERVIEW WITH MARTIN A. BYRNES, JR.

December 12, 1967

32
58
When NASA was formed, Walt Williams was the director of the Flight Research Center at Edwards. About the time of the Big Joe flight which was the first Atlas flight, Walt was called back to Washington and re-assigned as Associate Director to Gilruth in project Mercury. Charlie Donlon was the other Associate Director. Walt was to organize and unify the operational aspects of the program. He took Kenny Kleinknecht and me with him. I was assigned as a Management Assistant to the Director of the Space Task Group. That was December 2, 1959.

39
35
21
At this time, STG was preparing for first Mercury flight, trying to estimate STG growth requirements and working out its association with its parent organization, Goddard Space Center. We were to move to Goddard upon completion of construction of proper facilities. Kemble Johnson who was on loan from Langley with the people from Goddard had put together a budget presentation which covered the buildings and facilities which would be needed for this organization to move to Goddard and expand to the size necessary to perform the tasks that Mercury involved.

59
Meanwhile the operations were developing at the Cape and the size of the group there was growing. The Cape operations group then consisted of roughly 30 people and the plan was to move Flight Operations people and Engineering and Development people down for launches as required.

33
At the same time, an office was opened at the McDonnell plant under Bill Gray.

39
The estimating we did on the size of the organization indicated that before anything could be built at Goddard we would outgrow all of the avail-

26
122
able buildings in the East area at Langley. The old administration building and the old technical building right behind it at Langley were already full. The astronauts were in the old test building which I understand used to be a wind tunnel. Some of the technical people were in the East Machine Shop office space. Almost immediately we were out of space.

26
28
Approval was obtained from the Air Force to take over a wooden structure, which was across the parking lot from our Space Task Group headquarters. It and several other smaller structures were remodeled. The Public Relations Office, Personnel Office, Financial Management and Procurement and Contracts were put there. About the same time as I arrived Jack Donovan was hired as Financial Management Officer and Glenn Bailey came in as the Contracts Chief. These two functions started to be shifted from Langley support to an autonomous support under Goddard. The Space Task Group was becoming administratively self-supporting.

73
74
In discussions with Williams, Gilruth, and Donlon the need for an administrative chief for the organization was considered. This subject also was discussed with Vaccaro at Goddard and Al Seipert at NASA Headquarters. The importance of the selection was recognized as a key move in developing what would have to be a lot larger organization if we were to go into other space missions beyond the Mercury Program. Everyone was convinced that a search should be made for an administrator capable of managing a large affair. With the help of NASA Headquarters a number of people were interviewed by Gilruth and the STG senior staff. On one occasion a man from the Atomic Energy Commission was escorted to Langley by Wes Hjernevik and while Gilruth was interviewing him, I took Wes on a tour of our facilities. We speculated about how far the Space Task Group would

have to expand in order to accomplish both Mercury and manned space follow-on programs. He agreed that it was unrealistic organizationally to have anything big superimposed on the unmanned satellite effort at Goddard Space Center. I think we both felt that the Space Task Group was destined to be a separate organization.

Several days after this visit, Gilruth told me that along with others Hjernevik had decided he wanted to be considered for this assignment. I was pleased, as I felt that he and I could work together very well. He came down and we discussed this relationship briefly.

91 About this time a decision was made at NASA Headquarters that the Space Task Group would not be a part of Goddard. After Hjernevik came to STG I remained a special assistant to Williams in addition to my other duties and sat in Project Operations meeting which occurred weekly. I kept the minutes and action item lists for those meetings. These meetings included the astronauts, Doctor White and Doctor Douglas, Shorty Powers, 97 Chris Craft, Bob Thompson, a number of recovery, Preston from the Cape, and a number of Max Faget's people, usually including Aleck Bond. These meetings were a management tool for getting each operation off the ground and keeping abreast of the progress in the program effort. The whole complex system was reviewed by this group, whether the acceptance of a spacecraft at the McDonnell factory or boosters at San Diego (Convair). At the same time that we had the capsule and booster coming down the line and getting ready to go to the Cape from McDonnell and Convair, a booster and a spacecraft had already moved there. Problems and schedules were thrashed out in great detail in these Operations Staff Meetings. At these meetings there usually was someone representing the Langley Research

119 Center group responsible for the installation of world wide tracking met--17 stations. It was usually Barry Graves or one of his people from Langley's Special Mercury Instrumentation group. It was at one such meeting that Graves reported that there had been discovered a serious incompatibility between onboard instrumentation in the capsule and the instrumentation they were procuring for use in the tracking net, and this had to be solved in a hurry.

59 Right after coming to work for the Space Task Group, I went to the Cape with Glenn Bailey and Jack Donovan and we looked at Launch Operations unit's local purchasing requirements and overall contractual arrangements with McDonnell's Cape operations people. We established that an administrative office including all the administrative functions should be organized there. We hired Bob Clark to tie together these functions of the payroll, personnel activities, office services, communications and all the things that normally fall under NASA's functional administrative area.

86 After his arrival, Hjernevik set about getting the right kind of
81 key people and did an excellent job. Dave Lang was brought in from
Wright Patterson Air Force Base. He had just been in charge of B-70
procurement, and was a very capable man. Stu Clarke had been the
personnel officer for the Army at Redstone Arsenal and had also been
responsible for personnel activities at White Sands. When Von Braun's
transfer from the Army to NASA had taken place, the personnel officer
at Redstone Arsenal for the Army had transferred with him. Stu Clarke
who had been the number-two man at Redstone, became the personnel
officer. He supervised the hiring of 800 people in a very short time at
Redstone without incurring any problems of any consequence either with
the Civil Service Commission or anybody else.

118 After the announcement of the site selection, I went to Washington with Williams, Gilruth, Powers, and Hjernevik and discussed the selection and the inherent problems with Mr. Webb and Dr. Dryden. Webb indicated that he wanted Ralph Ulmer from NASA Headquarters to go with us to Houston to make the first official appearance of the Director and his staff in the area. We went from Washington to Houston in a group, arrived on September 22, 1961. The objective was to show Williams and Gilruth what we had to work with. I'll discuss the visit in detail a little later. We went to the Rice-LSU football game on a Saturday evening and the following morning Gilruth, Williams, Ulmer and Hjernevik flew back to Washington. Meanwhile, Ed Campagna came into town. The purpose of his visit was that the Corps of Engineers had been announced by Webb as having been given responsibility for managing construction of the Center and it had been established at the Washington level that in order to get the job done properly, the Office of the Chief Engineers would

142

143 appoint a special assistant for NASA support. The District Engineer at Fort Worth, who was Col. Paul West, was to be our direct contact as far as the Center was concerned. All transactions would be carried on between the Corps and the Center and not thru official DOD and NASA Headquarters channels. The first steps toward establishing working relationships included a meeting between representatives of the Center and Col. West at Fort Worth. Campagna represented the Facilities Division of the Center. ^H On Sunday morning, September 24, newspapers carried the report that Dr. Gilruth was to be the new director of the Manned Spacecraft Center to be located in Houston. Early Sunday morning, all of the people except Powers and Ed Campagna and myself went back East. The rest of the day Campagna and I looked over the city and tried to understand its layout. 128 Powers had some conferences with the Chamber of Commerce, visited 132 with the local news media, and then left for Langley. Gordon Turrentine of the Chamber of Commerce indicated that there were something like 70 offers of industrial floor space in the Houston area as temporary locations for the new Manned Spacecraft Center.

126 Monday morning, September 25, Campagna and I went to the Dallas-Fort Worth area, where we met with both the Corps of Engineers and the GSA. We were going to tell the GSA what kind of space we required, and how fast we needed it. Campagna and I first met with the District Engineer. Col. West asked me to brief his people on what had to be done. We told 142 them that a \$60 million Center had to be constructed--a Center which would 145 house in the neighborhood of ~~five~~ five thousand people. The design time 148 would be six months, and construction time no longer than 18 months. The people in the room were aghast at this kind of schedule and there were all

all kinds of "you can't get there from here" comments. Several people declared that it was unrealistic to consider designing a project of this size in six months and construction of government structures always took a lot longer than 18 months. In the midst of what was a pretty uncontrolled meeting, since there wasn't a chairman, Col. West came into the room and said he had just talked with the Chief of Engineers and he had been told that the NASA schedule as we had just described it was the way things were going to be. There would be six months for design and 18 months for construction.

148 I regarded this \$60 million worth of construction for the Center to be my most important responsibility as center operations manager. After this came the centrifuge, the environmental chambers and the control center. These things were added to the first \$60,000,000 job and constituted the mounting cost of the Center, but when we first tackled the job, there was a \$60 million appropriation which we had to use and that was it. This was established about January 1, 1961 when Dr. Silverstein had established that \$60 million was what we ought to go after for the first cut. I think he also felt this should be the final cut of what this Center should cost. It is obvious that few of us really comprehended the size that the Houston Center would eventually grow to. Even at that we thought we were thinking big.

143 After Col. West's announcement, he looked around the room and apparently was making some mental determinations as to whom he needed out of that crowd to do our job for us. He told us that he temporarily had made the determination that he was going to establish a field office on the site as soon as we had somebody for him to deal with down there. I told him I thought that within a matter of a week we would have an office

142 established and we would welcome having his people with us. Campagna, representing the Facilities Division, established his original contact then and from that point on the Facilities Division was the key point of contact with Col. West and his staff. Later we went to the GSA offices in Dallas.

132 After our advance cadre was organized and arrived in Houston, we went to the Chamber of Commerce where its staff had been fielding thousands of phone calls for us. They provided me with an office in the Transportation portion of the offices of the Chamber of Commerce (the fellow who occupied this office was ill and they turned this into the Manned Spacecraft Center's first office in Houston). Turrentine told me that he had 70 - 80 offers of temporary quarters. Among them was an official offer for two stores in the Gulfgate Shopping Center from Marvin Kaplan who was active on the military affairs committee of the Chamber of Commerce and was public relations man for the Gulfgate Shopping Center. I am sure that the Chamber would have been happy to have us move this confusion out of their offices to some place else. But, they were most hospitable and their switchboard operator became a lifelong friend. Pat Patillo and Ben Gillespie of the Chamber worked tirelessly for hours and hours fielding phone calls and making arrangements for us to see people. Mr. Marvin Hurley and Mr. Gordon Turrentine were most helpful in assembling a list of places we might lease as temporary quarters.

126 We also had gotten in touch with Mr. McLarty, the Houston GSA field office manager and he and I looked at the 70 - 80 offers working with a map and visiting some of them according to their geographical location. They were nearly all on the south side of Houston. It turned out that in the group were four structures of major size in numbers of square feet within a reasonable traveling distance of the intersection of the Gulf Freeway and the Old Spanish Trail. We went out and took a

look at these and got floor plans, descriptions and pictures of the places. I took these back to Langley for review with Dr. Gilruth and Dr. Williams, and the Facilities Division people. We determined that these would be the buildings which we would try to lease first. It was important to get one of them available as quickly as possible so we could move out of the Gulfgate Shopping Center and into our own quarters.

126
128
Having obtained agreement that these were the buildings we needed, Mr. McLarty went to Dallas and talked to the GSA's regional Commissioner. There was a repetition of the scene at the Fort Worth Corps of Engineers office when we gave them an idea of how fast we wanted to move. First of all the GSA people were very upset that we had made preliminary determinations of exactly what buildings we wanted, rather than giving them the requirements and having them come up with some alternatives from which we would select. I made it fairly clear to them that it was essential that we keep a relatively closely associated group of buildings on the south side of Houston and after a careful look at what was available, we determined that these four buildings were what we wanted. Somebody in the room asked -- "by when". I said as soon as possible, and we were told it would take two weeks to get the men down to Houston and a month to get the property assessed, and another 90 days to write the contract and probably six months from then the buildings would be under contract. I told them that if it took more than 10 days to do the job, we would do it ourselves because NASA had the authority to lease property under the law created NASA.

126
128
I knew at the time that the people in Washington had already admitted that they didn't have the staff to hack this kind of job. Just about the time it looked like the roof was going to fall in on me because the GSA troops were rebelling against this kind of pressure, the Commissioner walked into the room very much as Col. Paul West had done and said his instructions from GSA Headquarters were that he would meet the schedules established by NASA. Everybody in the room was to understand that. We didn't meet a 10 day deadline, but we did have a building to move into in something like three weeks. This was the Rich Fan Company building. Shortly after that, we got the Houston Petroleum Center and the Farnsworth-Chambers buildings under contract. A little bit slower was the Lane-Wells building. I think some of the GSA Dallas people are still trying to get the paperwork straightened out. Everyone of the buildings had something peculiar about it that made it a difficult lease arrangement for anybody and certainly very difficult for GSA. The Lane-Wells building for example, had recently been acquired in a merger or similar business transaction by Dresser Industries and the company was relocating its people in new quarters. The building, which was going to be vacant shortly, was designed to mee the needs of the Lane-Wells Geodetic Survey people but it also suited rather readily the needs of the Life Sciences outfit under Dr. Stan White, it appeared that with modification, assuming authority to spend some money to modify it. The Rich Building on old Telephone Road would be ideal for Max Faget's division. The Farnsworth-Chambers Building was well suited for a headquarters. We had hoped that all the expansion would be absorbed by the Houston Petroleum Center because it had lots of space, and the company that built it, and was building its expansion, had been rapidly constructing additional floor space there as needed.

126
128
132
134
136
138
140
142
144
146
148
150
152
154
156
158
160
162
164
166
168
170
172
174
176
178
180
182
184
186
188
190
192
194
196
198
200
202
204
206
208
210
212
214
216
218
220
222
224
226
228
230
232
234
236
238
240
242
244
246
248
250
252
254
256
258
260
262
264
266
268
270
272
274
276
278
280
282
284
286
288
290
292
294
296
298
300
302
304
306
308
310
312
314
316
318
320
322
324
326
328
330
332
334
336
338
340
342
344
346
348
350
352
354
356
358
360
362
364
366
368
370
372
374
376
378
380
382
384
386
388
390
392
394
396
398
400
402
404
406
408
410
412
414
416
418
420
422
424
426
428
430
432
434
436
438
440
442
444
446
448
450
452
454
456
458
460
462
464
466
468
470
472
474
476
478
480
482
484
486
488
490
492
494
496
498
500
502
504
506
508
510
512
514
516
518
520
522
524
526
528
530
532
534
536
538
540
542
544
546
548
550
552
554
556
558
560
562
564
566
568
570
572
574
576
578
580
582
584
586
588
590
592
594
596
598
600
602
604
606
608
610
612
614
616
618
620
622
624
626
628
630
632
634
636
638
640
642
644
646
648
650
652
654
656
658
660
662
664
666
668
670
672
674
676
678
680
682
684
686
688
690
692
694
696
698
700
702
704
706
708
710
712
714
716
718
720
722
724
726
728
730
732
734
736
738
740
742
744
746
748
750
752
754
756
758
760
762
764
766
768
770
772
774
776
778
780
782
784
786
788
790
792
794
796
798
800
802
804
806
808
810
812
814
816
818
820
822
824
826
828
830
832
834
836
838
840
842
844
846
848
850
852
854
856
858
860
862
864
866
868
870
872
874
876
878
880
882
884
886
888
890
892
894
896
898
900
902
904
906
908
910
912
914
916
918
920
922
924
926
928
930
932
934
936
938
940
942
944
946
948
950
952
954
956
958
960
962
964
966
968
970
972
974
976
978
980
982
984
986
988
990
992
994
996
998
1000

The two people who were principals in the Farmsworth-Chambers Building had been involved in some type of legal problem with the Federal Government. One of the partners, Chambers I believe, had been killed in a hunting accident and the other partner was due to stand trial for whatever it was that constituted the charge of the Federal Government. This created an uncertainty on our part as to the advisability of renting the building. However, the external appearance and layout of the place suited us perfectly for a temporary headquarters and our lawyers insisted these problems need not concern us. The management of Space Task Group also had grave reservations as to the practicality of refurbishment of the interior of the Rich Building to house Max Faget's division, and therefore it was difficult to get anybody to agree to a fixed schedule of movement for the people who were to be housed there. It was decided that the E&D Divisions, the administrative divisions and the project offices, except Mercury, would move to Houston early in 1962. Flight Operations would move either between flights, or not until the end of the Mercury program. We planned that when that group moved it would go into the Petroleum Center. Stan White's Life Sciences people were scheduled to utilize the Lane-Wells Building.

140
142
144
146
148
150
152
154
156
158
160
162
164
166
168
170
172
174
176
178
180
182
184
186
188
190
192
194
196
198
200
202
204
206
208
210
212
214
216
218
220
222
224
226
228
230
232
234
236
238
240
242
244
246
248
250
252
254
256
258
260
262
264
266
268
270
272
274
276
278
280
282
284
286
288
290
292
294
296
298
300
302
304
306
308
310
312
314
316
318
320
322
324
326
328
330
332
334
336
338
340
342
344
346
348
350
352
354
356
358
360
362
364
366
368
370
372
374
376
378
380
382
384
386
388
390
392
394
396
398
400
402
404
406
408
410
412
414
416
418
420
422
424
426
428
430
432
434
436
438
440
442
444
446
448
450
452
454
456
458
460
462
464
466
468
470
472
474
476
478
480
482
484
486
488
490
492
494
496
498
500
502
504
506
508
510
512
514
516
518
520
522
524
526
528
530
532
534
536
538
540
542
544
546
548
550
552
554
556
558
560
562
564
566
568
570
572
574
576
578
580
582
584
586
588
590
592
594
596
598
600
602
604
606
608
610
612
614
616
618
620
622
624
626
628
630
632
634
636
638
640
642
644
646
648
650
652
654
656
658
660
662
664
666
668
670
672
674
676
678
680
682
684
686
688
690
692
694
696
698
700
702
704
706
708
710
712
714
716
718
720
722
724
726
728
730
732
734
736
738
740
742
744
746
748
750
752
754
756
758
760
762
764
766
768
770
772
774
776
778
780
782
784
786
788
790
792
794
796
798
800
802
804
806
808
810
812
814
816
818
820
822
824
826
828
830
832
834
836
838
840
842
844
846
848
850
852
854
856
858
860
862
864
866
868
870
872
874
876
878
880
882
884
886
888
890
892
894
896
898
900
902
904
906
908
910
912
914
916
918
920
922
924
926
928
930
932
934
936
938
940
942
944
946
948
950
952
954
956
958
960
962
964
966
968
970
972
974
976
978
980
982
984
986
988
990
992
994
996
998
1000

As we hunted for other building space the one division that seemed to really require some special considerations was Gene Brock's computer facility. He was anxious to start arranging for delivery of equipment. The Chamber of Commerce pointed out that the University of Houston owned an old building which was formerly a TV and radio station not far from the campus so we talked with the university people about leasing it. It was more attractive than most of the buildings we were leasing because if we spent money to air condition it for computer use, add false floors and

so the other things necessary to house computer equipment properly -- even if we had to go away and leave these improvements -- it could be contributed by the Federal Government to a public educational facility and thereby continue to make some sense as far as the taxpayers were concerned. At the time the university planned that if we used the building as a computer facility, then all we would do when we left was to move out and they would take it over and also use it for the same purpose.

128
140 Among the buildings originally offered for lease by the Center was one formerly occupied by Canada Dry Bottling Company. It was off the Gulf Freeway north of Gulfgate. This was an initial location for some of our smaller and more precise machine shop and instrumentation activities. The building was undesirable for the most part as office space but it served the purpose of a good shop area very well.

128
140 Another building on the west side of the Gulf Freeway just north of the Old Spanish Trail was Minneapolis Honeywell Building. Here we located a portion of the Public Affairs Office's photographic activities (as distinct from the photographic activities in connection with instrumentation and flight, which were under John Brinkmann and located at Ellington AFB). Parking was meager and a problem. Both Minneapolis Honeywell and Canada Dry Buildings were difficult to approach from the south. There was nothing that could be done to improve the situation.

211
128 We also leased the Franklin Apartments to add to our temporary facilities while construction of the permanent site was underway. Unlike previous leases, this contract was negotiated directly by NASA. The agreement provided that since the buildings were still under construction the apartments would be tied together and certain baths and all kitchens would be eliminated. The

swimming pool was left empty. The carpets were left where they had been already installed. The newspapers when they learned of the lease reported, "astronauts to be housed in the Franklin Luxury Apartments". Dr. Gilruth was upset and wanted me to explain how we got into this position. To show Dr. Gilruth that the apartments were not what the newspapers had portrayed them to be, I took him over to see them. As we approached, we saw a sign that proclaimed "Franklin Luxury Apartments". Actually it is anti-climatic to say that this was misleading, and MSC was not paying for such "luxury". Everything had been amoratized under the contract and although MSC had difficulty with the heating and air conditioning of these buildings, they provided useful temporary office space.

As additional office space was required, the Peachy Building on Griggs Road was also leased. A part of the Facilities Division and a branch of the Public Affairs Office were located there.

Because we anticipated a growth in the number of MSC lease buildings, site designations were assigned to each as they went into use. Sites were numbered, starting with Clear Lake as site #1. The Fransworth-Chambers Building was MSC Site #2 etc.

Another leased temporary facility was the East End State Bank Building. MSC occupied the entire second floor and housed its Personnel and Security Divisions there. About this time the Center was reorganized, a number of divisions were placed under my supervision. Personnel, Financial Management, Security, and Procurement Divisions, however, were left to report separately and directly to Hjernevik because of their close ties to the Mercury Gemini and Apollo technical programs rather than the day-to-day operations of the Center. The East End State Bank Building was not a major problem except in so far as parking was concerned. The owners of the bank felt that NASA should lease the required parking space. The Federal Government,

precedent and practice however, was opposed to such expenditures.

Had there been only the NASA employees at this site it probably would not have been a real problem. However, by virtue of the fact that the Personnel Office was located there, parking space was needed for job applicants. The haggling over the parking space went on for months and wasn't actually resolved until we vacated the building. The continued buildup of staff increased the pressure on existing leasing facilities.

When the Veterans Administration moved to a new building and vacated their old facility a vast amount of floor space was available in central Houston for NASA use. The building was reconditioned and the Gemini Project Office and the people supporting it from Procurement and Contracts Division were moved in. An Air Force team had been sent to MSC to coordinate the AF participation in the Gemini B program and the work on Gemini experiments. They also were housed in the VA Building. This site as has been said, was downtown, which was inconvenient, in comparison with the other facilities grouped near the intersection of the Gulf Freeway and the O. S. T. and was further disliked by employees because of the limited parking space in the vicinity.

Ellington Air Force Base facilities were used by MSC from the beginning. The base was under the command of a Brig. Gen. Russell Gustke. He was actually a civil service employee but was commander of the 445th Troop Carrier Wing which was headquartered at Ellington. He was invariably helpful in locating space and in resolving problems.

MSC facilities at Ellington initially were utilized by Reproduction, Financial Management, Facilities and Tech Services (including machine shops which were located in one of the big hangars). Our aircraft maintenance people also occupied a half of one of the Ellington Hangars.

17
212
However, locating units with IBS equipment and so forth was a problem as the buildings were not air conditioned and in poor state of repair. Initially we figured that all we would have to do was tile the floors and paint things a little bit. When we looked at these buildings a little closer, checked the load capabilities of the floors for filing cabinets and things like that we discovered that termites or a rot of some kind had eaten away the sub-floor supports. It was necessary to retimber. One solution which was time-saving and cost-saving in the interior redecoration involved the use of a wainscoting which went up four feet above the base of the floor along the sides of every room. It allowed us to use a real light composition board for the wainscoting. We went through and knocked out the existing celotex wherever we needed an electrical outlet. We ran the BX cable inside the walls at a considerable savings in time instead of having to carefully remove the celotex and put it back again. We covered up these holes with wainscoting and it worked perfectly. It also saved painting that half of the wall. By painting only the top portion of the walls and the ceilings we saved about 75% of the cost involved if we had repainted the whole place.

40
For the I.B.S. activities and printing equipment we were able to locate a sufficient number of buildings with concrete slab floors in Ellington all in the south end of the base. This location for NASA was one of our agreements with Gen. Gustke. We tried to establish requirements that would let us use only the south end of the base and leave his military and national guard activities free of interference at the north end. We found enough of these concrete slab buildings to handle the machinery that had to be installed. Again, the big hangars were used for the machine shop and other heavy equipment. Warehouse space was used with virtually no refurbishment except external paint. This is one of the things that made a difference in the Government's public image.

211
212

We insisted from the beginning that any signs or identification of NASA buildings would be generated by one shop under contract and all would be uniform and all would be simple blue and white with the NASA seal identification. They were completely professional and showed the NASA emblem, the name Manned Spacecraft Center and the site number. All had the same identical raised numeral and letter design. This took a little doing. Everybody wanted to put up their own signs. We kept the public image organized and under control so that it was the same everywhere -- simple but distinctive.

211
140

The Stahl-Meyers building was probably the most difficult to prepare for the kind of human habitation that we had to put into it. It was the first location of the Flight Control group, and it meant utilizing prepartitioned office space on the second floor and turning the store front across the main entrance into partitioned offices.

211
140

Office City was like the Houston Petroleum Center -- constructed by private enterprise as we needed additional space. The main building was leased and was to be used to house the Apollo Spacecraft Project Office. I don't recall any great difficulties in leasing it. I think our time schedule was very tight and it tied in with the relocation of the astronauts and the flight control people from Langley and the Cape. These people were practically on their way to Houston when we were still trying to get the building completed. The deadline for occupying the building was a Monday. On the previous Monday it appeared that we were going to run awfully close to completion time. Charlie Frick, the Apollo Project Manager, was adamant that he wasn't going to move in until he had complete telephone communications installed and all facilities operating properly. On Friday, as the hour of truth approached, I had a meeting with Frick, and he told me that his people were not planning to

140
213
214
move in over the weekend because he had been advised that there would not be any phone connections. We had previously met with the telephone company, the water and power people, and the owners. We had determined that during Saturday and Sunday while the move was in progress the phones would all be hooked up and every facility would be in working order on Monday morning. Frick and I had a sort of loud session, and I told him he didn't need any advice from any experts except me and that Apollo would be ready to go to work on Monday morning and the Apollo Office would move. He said that he was not going to move. So I made a telephone call and shut off the physical move of Apollo. At 8:00 Monday morning I went through the Apollo offices and they were complete with phones, desks and everything ready to go except the people were not there. I went to Charlie Frick's office in the Farnsworth-Chambers Building and took him with me to Office City. He was astounded at the change that had taken place over the weekend, as a result of some 100 telephone people working continuously to get the phones installed. He agreed that Monday night Apollo would move.

213
152
Moving at this time did not necessarily involve moving large numbers of people and furniture. We didn't move their furniture, we moved them. There was a planned increase in the center's population large enough to warrant keeping the warehouse pretty heavily stocked with furniture so that when a man moved from Langley or elsewhere to a new site all he did was remove the contents from his desk, box them, mark them with the destination building and room number and leave them where they were, and overnight they would be moved. When he reported to the new place, he would find the things on his desk. Of course occasionally we lost a few things, but that was the policy that we followed as we moved from both Langley to Houston and from building to building in Houston until we finally moved on to the site.

1
A group including Dr. Gilruth, Williams, Hjernevik, Powers, and Ralph Ulmer from NASA Headquarters left Washington on Friday, the 22nd and arrived at the airport in Houston that evening. On the approach to Houston the stewardess told Shorty that the press had asked the group to deplane last in order to permit television and newsreel coverage of the debarkation of the first Manned Spacecraft Center people to arrive in Houston. Gilruth decided that he didn't want any part of this, so Colonel Powers agreed to stay aboard until last, talk with the reporters and give whatever coverage was needed at that time. We debarked with the regular passengers and went to the car rental area to pick up vehicles for transportation to the motel. We had reservations at the Holiday Inn on the Gulf Freeway near the Old Spanish Trail. We had not been able to get reservations except for that one night because the following night the town would be flooded by the crowd coming in for the Rice-LSU football game. We were met by Gordon Turrentine from the Chamber of Commerce who said he had made arrangement through the Chamber of Commerce for us to occupy two apartments close to the Rice campus. The night was humid, air was heavy with the odor of the Houston channel, industries blowing downwind from petroleum and chemical facilities and the papermill in that general area and comments were pretty grim as we headed for the motel. After arrival at the motel, Williams and Gilruth commiserated over a couple of martinis on having to come to a place like this. The next morning we journeyed to the site. Before leaving, Dr. Gilruth received a phone call from Washington which I believe came from Mr. Webb, to let him know the Corps of Engineers had been selected to manage the construction of the new Center. We had

118
163
142

breakfast at a restaurant on the Old Spanish Trail and proceeded to Ellington Air Force Base to look it over.

129 | Early, consideration had been given to the possibility of locating key facilities of the new Center at Ellington AFB. It was, however, in a bad state of repair. Although the years since World War II had seen some maintenance going on, the water systems, electrical wiring looked real doubtful, and the buildings were showing signs of major rotting. The reaction of Gilruth and Williams was negative--this was no place to use as a temporary headquarters for the Center while attempting to attract high quality aerospace talent into Civil Service.

| After an inspection of the Ellington area we drove to the West ranch site--the land which had been offered to the Government by Rice University was part of the old West family holdings. We parked our cars at the old West mansion and waited for a guide representing the Rice University, who arrived almost immediately. A caretaker was also present. The old fellow who was the caretaker was an old Texan from the Kemah area, with boots, levis, the big brimmed hat. One of the people in the crowd was Ralph Ulmer who is inclined to dissect little details that no one else is interested in. There were a lot of flying insects in the air and swarming over us as we stood there talking and Ulmer asked the fellow what they were called. He answered they were around this time of year on a regular basis. Ulmer again inquired concerning their name. The caretaker replied that he didn't know, and added he'd never called them anything except "them little black bugs."

| We took a ride along an old ranch trail, possibly it was just a road that was used by the people inspecting oil well equipment, because inter-

165
laced under the new site were pipelines of various sizes and descriptions which originally were intended to convey oil from a well site back to some collecting point. These became a pain in the neck when we began construction of the Center because we were always discovering one that wasn't charted, breaking it and having to cap it off before we could put any buildings in there. There is a picture which is very representative of what Dr. Gilruth and Dr. Williams saw which has been used in a number of publications that shows cattle on the site and this picture was either taken by Shorty or by one of his people. It also shows an old windmill in the background and some tall grass.

1
163
Just prior to the announcement of the selection of Houston as the site for the Center and our trip down there, Hurricane Carla had passed through the area and caused great damage. Tidewater Virginia knows much of hurricanes. One of the service organizations in the Tidewater area of Virginia had made a major effort to collect food and clothing to help relieve the losses of the people of the Gulf Coast area. While we were at the West mansion, a big convoy of Army trucks went by marked Virginia aid to Texas. I had a distinct feeling and so did Hjernevik that both Williams and Gilruth were probably at the lowest ebb of depression we had ever seen either of them. One thing, however, was clear -- the high water from the flood tides that accompanied Carla had not reached anywhere near the elevation of the land which Rice was giving the Government for use as a site for the Center.

1
163
After looking at the site, at my suggestion, we decided to eat a seafood luncheon. I recalled a fine restaurant on a pier at Kemah where we had eaten when we were on the site survey trip. After taking Williams and Gilruth and the others on a quick tour of Timbercove and El Lago to see the kind of housing that was nearby, I then led them off to Kemah to see

if I could find this seafood restaurant. As we got closer to the bay we found great quantities of loose boards and debris from Carla strewn on both sides of the road and covering some of the roadway. As we came out onto the road that runs north and south along the bay shoreline, there was a house sitting next to the railroad track that had been washed off its foundation and across the road. Very shortly I was aware that the pier that I was thinking of taking them to for lunch was no longer there -- not even any of the pilings. We settled for a quick circle of the Kemah area and back up highway 528 to the Freeway and back to the airport for lunch.

Saturday afternoon, we met Dr. Pitzer, President of the Rice University and the board of trustees for Rice. Dr. Pitzer invited the entire group to be his guests in his box at the Rice-LSU game that evening.

163 Dr. Williams as a cadet at LSU visited Houston once with the LSU cadet corps for a football game. They detrained at the main railroad station downtown and marched out to Rice on a very hot fall day. It was so bad that when Williams returned to LSU he had to throw his uniform away as it was completely ruined by perspiration. We went to the Rice game and got all kinds of pictures of Williams sitting in the box of the President of Rice University screaming like mad for LSU. During the game we met a number of other people from the faculty who were most hospitable and friendly and we enjoyed being with them. At the end of the evening, Dr. Brotson and his wife invited us to join some of the members of the faculty for refreshments at his home. With some difficulty we found both of the cars that we had brought into the parking lot (we hadn't paid careful attention to where we had parked them when we came in). One group, including Gilruth, Ulmer, and Hjernevik returned to our apartment. Williams, Powers, and I went to Dr. Brotson's home where we met 20-30 of the Rice staff and their wives. The next morning, Williams, Ulmer, Gilruth and Hjernevik caught a plane back to Washington, and Langley, and Powers, Campagna and I stayed on.

148-1
When we came through Houston on the site survey, one of the things that was made clear by the County Judge, County Commissioners, various representatives of Rice University, and by the Mayor was that any highway changes or development of the area so far as drainage and that kind of thing were needed, would be taken care of as NASA requested. During the first phase of site development where we moved dirt around and put in the underground tunnels, and constructed some of the smaller buildings, discussions were held with County Judge Bill Elliott, and others. I pointed out that it appeared to us that time had come to do something about planning the road net needed in the vicinity of the Center. Judge Elliott asked me if we had a plan showing what ought to be done. A day or so later he called me and indicated that the County Commissioners would like for me or someone from the Center to brief them on what we thought our road net requirements were because it appeared the County did not have enough funds to provide this net and it would be necessary to go to Austin to the Highway Commission for their support. Leo Zbanek's people, John Ross in particular, put together a study that gave estimated numbers of cars entering and leaving the Center on a rush hour basis. John Ross went with me to brief the County Commissioners.

148
A short time later I had a call from Judge Pete Lavalle of Galveston County. He, his commissioners, and a group of interested business men would like to show us a proposal that they had and get our reaction.

239
Zbanek and I met with the Galveston County people and gave them the same presentation that we had given the Harris County people. The Galveston County people proposed a road that left the Galveston County Hospital area, cut northeast across the open land and terminated right in front of the MSC. It would have to bridge the west end of Clear Lake. We were asked if we would give assistance by accompanying the County Commissioners to Austin to talk with the Highway Commissioner about obtaining funds. It turned out that their hearing was the same day as the Harris County hearing, so I was designated by Dr. Gilruth to represent. I talked with the State Highway Commissioners and said that any road into the Center from North or South would be very very useful and while we were certainly not experts on highways and where to put them, we would outline what we felt we needed. The Highway Commission was amused with the suggestion that Farm to Market road #528 be upgraded into a full blown freeway without going at it by stages. However, they received the proposals with a proper sense of urgency and cooperation and honored all the promises of local people. The work was carried out promptly and relatively swiftly, including a back road leaving the supply and maintenance area and going somewhat northwest through the open country. That particular road met with some objection on the part of both the county people and the state highway commission and even some of our NASA people thought it unnecessary. We defended it on the basis that we had done the best job we could of estimating what the need was and we felt it was needed.

To people who are waiting to get something started it seemed a long time, but it was fact action for an organization like the state government to get the money allocated and get the contract written. He had complete

239 cooperation from them on the kind of ^{freeway and} turnouts, where they wanted to put them. In the management of environmental traffic that didn't really relate to the Center, people like the Nassau Bay developers came to us and asked where we would prefer to have entrances opposite our Center.

188-3
207-5 We attempted to keep ourselves informed as to community planning in the vicinity of the Site. We had full cooperation from developers who would come and tell us what they were thinking. Sometimes they would ask for endorsement just to get their name associated with the MSC, I guess. I remember one fellow proposed to build a restaurant on the top of a needle point across the road near the entrance from the main gate. This proposed project obviously never came to anything but he was promoting it and it was something like a \$20 million project. That's the kind of thing we encountered. We were greatly concerned in working with the community people that a ramshackle boom town not be allowed to be developed right across the street from us. It is plain to see that the developers exercised an unusual amount of vision and taste in the kinds of things they built. The whole environment around the Center reflects a high order of organization and planning.

139 Even in the early days while we still occupied offices in Gulfgate, we received a tremendous number of invitations to provide speakers for dinners, banquets, luncheons, school graduations, etc. I recall one occasion on which I spoke to the Board of Directors of the Chamber of Commerce, and looking down that long luncheon table I could see everybody in Houston that had power and authority. It was a tremendous experience. They were all avid listeners. In these talks we told them what NASA and MSC were, what we were trying to do in Houston, what we were going to

build here, and how many people we would bring in. I talked to an organization called Gulf Area Development Council which included representatives from communities along the Gulf Coast. There was a certain amount of concern when it came to the notice of Williams and Gilruth that I was making as many public appearances as this -- not only I, but some of the other fellows as well -- and what we were saying was the concern.

139
I arranged with Jan Simmons who was the only Public Relations office permanent rep at that time to have a tape recorder placed at this Gulf Area Development Council luncheon. Paul Purser was in town so I took him with me to the luncheon. He listened to the remarks and then the questions and answers afterward which were as always lively. Everyone was really eager to hear as much as possible about the new Manned Spacecraft Center, and its meaning. Paul was pleased with what took place, and afterwards we took the tape recording, transcribed it, dressed it up a little bit, and used it as a guideline for others who were going to have to go through this sort of thing from time to time. The content of the talk and the questions and answers were mailed back to Space Task Group at Langley and I suppose from there went to NASA Headquarters.

133
154
160
Good community relations were not at all difficult because of the tremendous reception we had. In the field of housing, every developer wanted to have a few of these NASA people in his new development.

132
133
134
We utilized the Chamber of Commerce as a spearhead for getting things under way. They invited us to many of their functions. They'd call and ask who of the senior staff of MSC or among the astronauts were going to be in Houston on a particular day. I'd tell them if I knew. A formal invitation would be sent to one of our people asking for them to attend.

139
205-1
The speaker of the evening for the annual banquet of the Chamber of Commerce for 1962 was Bob Gilruth and Col. Powers and I attended with him. It was something like a 2000 man gathering at the Shamrock. During that particular evening NASA Headquarters had permitted us to have Dr. Gilruth make the first public announcement of the establishment of the Gemini Program.

133
208
159
The relations we had with the business community were, I think, unsurpassed anywhere. The small banks sent representatives out to see what they could do to help our people moving into the area get acquainted with their services. On one occasion I called Mr. Gene Alexander at the Pasadena State Bank and told him that one of the single girls who had moved into town wanted to buy a car. I asked who was reliable. Alexander himself met her, went to a dealer with her, and then when she had decided what she wanted, he arranged a loan and she had her automobile by the the next day.

131
you

During the days at the Gulfgate Center, we had literally hundreds of applicants every day. Initially we only had 2 - 3 people in personnel available to talk with them. We insisted on listening to every applicant, and usually advised them that there might be need for their talent later but the Civil Service rules required that competitive registers be utilized except for temporary jobs, and told them how to get on the registers. Sometimes when the crowd got too heavy, I would have to drop whatever I was doing and help out. Long lines of people would form waiting to talk with our people.

132
134

During this period, Representative Clark Thompson of the Galveston area, called and asked if he could bring a few people from his district in to see me. When he showed up he had about 25 people with him. We didn't even have enough chairs for them to sit on. I gave them the briefing I had been giving generally on what we were planning to do in the area, on our nation's space program, and what we thought would be the impact on the area of the NASA group which was coming in.

134
Invitations to speak at luncheons, dinners, and banquets came from all over the place and as far away as Baton Rouge. Invitations came from San Antonio and Austin. There were also numerous invitations from all Houston. We just couldn't possibly hack them all but we did our best. After my family had moved down to Houston, I strained relations pretty badly by being out 4 - 5 nights a week talking to people at banquets, etc. It was difficult to keep up with the work in the office when speaking at luncheons almost on a daily basis. It proved to be worthwhile though, because we had outstanding cooperation from everyone.

134
The University of Houston and Rice were constant sources of requests for speakers. Unless I could get somebody down on travel from Langley frequently, I had to talk to these groups at the Universities. I tended to stick to the generalized approach concerning what we were doing. On one occasion I addressed a group of International Students on tour. These were people who had completed their doctorates that Spring. A question and answer period followed my speech. There were a number of nationals present from not too friendly countries who asked such hostile questions as why did NASA persist in developing rockets that would carry atomic warheads. The answer had to be -- we are not in the military business; our purpose is the peaceful utilization of space.

142
143
145

From the beginning, Col. Paul West, the district engineer in Fort Worth, was most cooperative. A group of C of E personnel began the actula surveillance of activities by the design contractor and whatever site preparation would go on. These personnel shared office space with our Facilities Division in the Peachy Building. The natural antipathy of the Corps to having anybody tell them what to do caused some friction which was natural. Our original thinking was that we were going to have to build a force of design and construction engineering people to manage the building of this big center, and a number of the people who were among the initial hires in the Facilities Division were to have had direct management over both design and construction contracts. The Corps was obviously an excellent solution to a future problem. If we hired enough of our own people to do the job properly, there would come a time when the construction program would be of modest proportions, and we would have to cut back this force. The decision to use the Corps enabled us to have a force in being which would assume the responsibility and our facilities unit could remain small and still carry out surveillance of what the Corps was doing. It would assist the Corps in some respects in surveillance over the contractors and in looking out in general for getting the Center built properly and on time.

143

In the beginning there was the usual jockeying for responsibility and authority for final approval. We established that Col. West would interface with Hjernevik's office and particularly with me. He and Hjernevik met every time he came in but frequently when it got into details of any kind I would deal with him. Zbanek would interface with the on-site Lt.Col. in charge of the Corps of Engineers Houston working troops. The intention was that as soon as the construction got underway, the Lt. Col. and his staff would move to the construction site. They did.

141
142
In arriving at a working arrangement, a certain amount of friction had to be overcome. The Corps decided at the first meeting to tape the proceedings of the Monday morning work review conference, and have verbatim minutes transcribed and distributed to Col. West, to me, and anybody else that needed to be impressed with how hard they were working. Evidently either at the first or second meeting a disagreement flared into some vehemence and one of our people made a comment to the effect that the contractor was getting away with murder. The implication was clear that someone was intentionally neglecting to make him do what he was supposed to do. Obviously, when this verbatim record was transcribed and distributed, it caused real concern. Col. West and I very rapidly agreed that verbatim transcriptions of these kind of meetings would not be made, and that summaries of these Monday morning meetings would appear in print only as action items. When you get construction people together to discuss anything, their language can get rather strong at times.

142
143
About the time we broke ground at the site, the Office of the Chief of Engineers appointed a Col. Thomas Hayes to be our interface at NASA Headquarters. At the same time, a new division engineer, a Col. Carroll Dunn was appointed in Dallas. Shortly thereafter both Dunn and Hayes were promoted to Brig. General. In many cases we had a major disagreement with the Corps as for example in the case of a source determination for the construction of one of the major technical facilities at the site. The basis of this disagreement was that NASA technical personnel had some particular contractor in mind for the design job, and Gen. Dunn felt it was a job that could be done by anyone. He had to be convinced that you couldn't go out into the market place but had to go to a limited number of sources, to

obtain technical competence and experience. On a couple of occasions the District Engineer would be in agreement with us after listening to the arguments of NASA's technical people and go back to Fort Worth with his proposal to go the selected source route only to be directed by Gen. Dunn that it was going to be done the other way. In each of these cases it only took a phone call or a quick trip up to see him to get him to change his mind. Since I had known him during previous service (I had been in the Corps of Engineers in World War II myself), we were always able to reach agreement, although there were times when our discussion was rather heated.

142
143 The useful thing about this direct relationship was that if he knew he was getting into difficult spot from the standpoint of policy of the Chief of Engineers, we could call Tommy Hays and resolve the difficulty practically over the telephone. On larger matters, Hayes came out and visited us. As a matter of practice he came on a rather regular basis.

143 About midway in the construction phase of the Center, Col. West retired from the Corps of Engineers and was replaced by Col. Koisch. This change very happily involved two of the sharpest construction administrators I've worked with. Paul West was excellent from technical standpoint, and also a fine gentleman and a genial person to work with. Koisch was similar in all respects.

144
146 About the time that I became Manager of Center Operations, the design phase of the Center was well along. The first cut at designing the Center for the most part had been handled at Langley. Brown & Root and Luckman the team doing the architect and engineering work, came in with estimates. These were way in excess of what we had to work with. The AE was directed to redesign the Center and stay within our budget. This redesign cost us

us around an additional \$800,000, and although the design with emerged was less than an international work of art, it was more of a practical Center without sacrificing outward appearance. The first design for Building 2 called for it to be 11 stories high. The second design was 9 stories. Some other combinations of offices, elimination of extensive decorative exteriors, etc., were also accomplished.

137
210

While we were in temporary quarters in the city of Houston, the Southwestern Bell Telephone people were most cooperative. I mentioned earlier that when we had a tight moving schedule in getting the Apollo people out of the space they were occupying in order to accommodate the arrival of a vast number of flight control people between Mercury missions Southwestern Bell sent almost 100 installers into the Apollo Building at Office City in order to get the job done over a weekend. Reaction time on the part of the telephone company was always good as far as I can remember. However, when it came to selecting the telephone company that would service the site, we found we had a problem. It seems that there was a gentlemen's agreement between Southwestern Bell and General Telephone to the effect that General was to have all business south of Highway 528, except that it serviced farms, businesses and residences along both sides of 528 and some kind of imaginary boundary had been established at 1800' north of 528. There was no real boundary. Pressure in the form of correspondence to the Washington Office from congressmen had apparently been building up and it was evident that we would have to study the capabilities of both companies and the conditions surrounding getting service at the site. I called a meeting of representatives of procurement and contracts, a lawyer, a communications man and a communications man from NASA Headquarters

(there may have been one other member). I am afraid that my memory of the sequence of events is not entirely dependable to get a good understanding of the hassle that went on here, it would be best to find out what kind of records Hjernevik has, because it got so bad that he and I and practically everybody else was in on it. Our communications people had indicated that General Telephone had very light equipment in the area and would have to make a major net development in order to get service to the Center, but that they could do this. This recommendation got into the mill somewhere and they (General) got a copy of it, and when Southwestern Bell was selected, they raised all kinds of cain, and we had to go through what procurement calls a final determination and findings. The dates of the source selection meetings and names of board members ought to be in the MSC contract files.

137
Telephone and mail were the two fantastically difficult services to maintain during the MSC temporary quarters era in Houston. They would have been a lot more difficult if we hadn't had excellent dedicated people working in this particular area, so that when there was a heavy work load that lasted on into the night, they stayed on and took care of it. This type of dedication was also true of the people who managed the many, many office changes that had to be worked out. We and they prevented disruption of office routine by getting moves done on weekends or at night. It meant that there were a great number of people who were working long hours and long days, frequently without overtime approval. The mail service was maintained on a regular schedule but there were special handling arrangements which 214 Roy Aldridge had set up to permit special delivery for urgent material throughout this far flung complex that we had. Some humorous things happened occasionally. The boys who handled the mail were driving converted milk trucks, and some were not real familiar with the vehicles and were very cautious. They received parking tickets for leaving the truck parked outside the office buildings and one of them even received a traffic ticket for driving too slow on the freeway.

138 In the early operations at Houston when we had first moved into the Farnsworth-Chambers Building and Frank Hickey was our Security Officer, two things occurred. A horse belonging to someone in the neighborhood had been running free and grazing on the Farnsworth-Chambers property. He apparently had enjoyed the run of the place until we moved into the building. At first he was aloof and stayed away from the buildings but as he became more acquainted with us he became tamer, and finally got so tame that he began playfully dropping his front hooves on the back deck of some of the leased automobiles and denting them. I called in Frank and asked him to get rid of the animal -- either give him to his owner or at least get him off the property. With the assistance of some of the people from the Harris County Sheriff's Department, we had a horse roundup on the Farnsworth-Chambers property.

138 On another occasion we hired a number of 30-day temporary employees to tide us over while we were bringing the main body of people from Langley to Houston. Among the people who walked in and were given jobs was a young man who seemed to be able to do almost anything. His educational background wasn't extensive but he was a sharp young fellow. One morning one of the secretaries left the keys to her desk at home and he used a paper clip to open her desk in nothing flat. Another time we had to get a door open and without much delay he was able to pick the lock. One morning Frank Hickey began to prepare NASA identification badges for all employees. He had a polioroid badge camera set up and scheduled everyone to come by and have a picture taken.

Shortly after he had begun he called me and said I think we've got a problem. When he snapped this young fellow's picture, the boy immediately turned sideways. I think we had a security risk there.

172
212
I think I mentioned before that we had to improve some of the buildings at Ellington rather extensively. In some of the bigger ones we discovered that the sub-floor timbers had been eaten away by termites or dry rot and we had to replace them. The cost for a temporary, one-year-type dwelling became amounts that disturbed a good many people. It was our opinion that the buildings would be used for a lot longer period than 1 1/2 years. We felt that due to increases in the Center's mission and necessary expansion of the technical staff, we would not be able to withdraw from them in three to four years. We felt we would be living in these temporary buildings for at least longer than a year and a half. As it turned out, it has been a lot longer than 1 1/2 years and the amounts that we spent were well justified as compared to what we would have spent for industrial rentals.

172
212
206-3
Some of the Ellington buildings we refurbished were special purpose facilities for engineering and development experimental operations. All of them were in the south end of the base. We agreed to separate our activities from the military activities which were going on at the north end of the flight line. One place where we spent a large amount of money in refurbishing a building outside this area was the hospital. It was used as out-patient clinic by the astronauts and their families and by the military people attached to the Center. My understanding is that this was to eventually revert to Air Force use and as the regular Air Force population grew on the base, it became useful both for the military and

NASA.

129
712
General Gustke was one of the most cooperative people with whom I've ever worked. He and the commander of the National Guard Squadron worked with me on United Fund activities -- in fact one year I was General Gustke's co-chairman in the government division of the United Fund. I succeeded him the following year as chairman. The use of Air Force runways and base area for airborne testing was simplified by virtue of the fact that the Air Force was so willing to accommodate us. Occasionally during the early days, General Gustke would have a distinguished visitor come into Ellington and they frequently would want to see what we were doing. We made a special effort to see that they were escorted by someone who could give a good explanation of what we were doing.

135
140
134
127-1
127

The initial MSC element in Houston was the advanced party organization. Some of the people were in Houston before our group arrived. Parker had been on leave visiting his wife and family at home in Alabama and went directly to Houston at the termination of his leave rather than back to Langley. Meantime, Stu Clarke and Dave Lang and perhaps a few others had come thru prior to the official arrival of the advance party. In the process they had talked with the people of the Chamber of Commerce and with a number of people in the area around the south end of Houston and made preliminary contacts. The official arrival of the advanced party with Byrnes, John Peterson, Luther Turner (I believe he came in separately), a security representative (I think Frank Hickey) arrived in Houston officially about October 6. I had talked with Parker on the phone and he said that Gulfgate Shopping Center had offered two storefronts to be our first temporary offices in the area and I had approval from Hjernevik to use them. We also had office furnishings offers from Finger Furniture Company and had determined that until we could get GSA furniture into the area we would use it. A temporary loan of furniture from Finger actually was utilized. The phones were hooked up and everything was in readiness the night we arrived in Houston, October 6 -- a Friday night. The group set up activities and the major effort at the time was personnel, local purchasing, and community relations.

168
From the time we moved from Gulfgate, in fact probably until a month or so after we moved into the Rich building, there was a constant influx and departure of senior personnel. These people passed through Houston while enroute to the West Coast or elsewhere and stopped for a first hand look at the area. Some people came down assigned for 3 - 4 weeks to help set up facilities. After we set up offices at the Gulfgate Center, Dr. Williams and Dr. Gilruth came into town to see how we were doing and the activity in the storefront next to us (Rex the Tailor's place) was so noisy that we were obliged to go to their motel room in order to be able to discuss the leasing problems and other business involved in the scheduled move to Houston.

149
The initial cadre expanded, as time went on, along lines of the MSC relocation plan. If we needed additional people in personnel or in small purchases or general contracting, we got them. They were usually on a temporary basis at first. The permanent transfer of these people and their families came a little later. A short time after the first part of October, we had something on the order of 40 people. The headcount in my earliest report showed that we had 18 people and by the time of the second report it was 40. Some of these were people who had been hired into the program from elsewhere and who reported to Houston rather than

158
make the double move to Langley and then to Houston. We also had early arrivals of technical people who came into establish their families and then commute to Langley or to the Cape to work with the rest of the people in their group.

154
162
155
The solution to the heavy travel activity was a contractual arrangement whereby the East Coast Flying Service ran a Martin 404 to Houston on a regular schedule, I believe, 3 round trips a week. Mr. Webb had decided that it would be to the interest of the government for NASA-MS C wives to be able to use the shuttle plane to visit the area to select housing and get acquainted with Houston. Insofar as the latter was concerned, we had complete cooperation from the Chamber of Commerce. The personnel office had hired Mrs. Grace Wynn, a native of the area who understood the layout, knew many people. We arranged for a regular briefing for new arrivals and Mrs. Wynn was able to be on the west side of the Houston airport where East Coast Flying Service had its parking place when the plane got in at 7:00 p.m. on its regular arrival days. She would meet the people and help escort them to their motels. The next morning we would have an orientation for everyone who had come in on the plane. As the site manager, I would greet them and then they would talk to Grace. She would take them to see whatever they wanted to see or help them find a way to get there.

127
One of the first things we recognized as a problem was transportation. I arranged with Bill Parker to call all the known car leasing services in the City Together, with one representative from each. We met in the main conference room at the Farnsworth-Chambers Building. We told them that our people were coming in and except for their air transportation, they bore their own expense and therefore we wanted to arrange for the most reasonable ground transportation possible. The reaction was negative,

136 so we told these representatives that if it was impossible to have a joint agreement where all of them would agree to something like 5¢ a mile and the user furnishes his own gasoline, that we would do business with the man with the gleam in his eye. I told them I realized this was an irregular type of negotiation but I did think we had everybody who was in auto rental competition in the city in the room with us and that Grace and I would leave the room and give them about 15 minutes to discuss the situation. We would then return and come to some sort of agreement with all of them or we would come to an agreement with one of them. When we returned, two of the national organizations said they agreed personally with what we wanted to do, but they had to clear it with their management. They would like to be able to call back that afternoon to give us the word. As it turned out these two national rental agencies both followed things through on the agreement and from then on, Grace would order automobiles two at a time from each company in rotation. They supplied cars without any argument, and as far as I know, the people who came in had a car at reasonable cost when they needed it.

144
150
152
151 The move plan which we were following called for a man to know his departure date well in advance and on the night before he was to leave Langley he would pack his books, files, etc., into boxes and put them on his desk. The move coordinators at Langley would help him mark the stuff so it was designated to arrive at a building and a room number where his desk would be located. He would then go home and the following morning a van would pick up his family belongings at his house. He and his family would either drive to Houston or come by common carrier. It was usually possible to have his office files and books on his desk at Houston by the time he

arrived. This procedure was made easier by the fact that a good number of people wanted to stop enroute to Houston.

152 We assumed that the size of the Center population was going to grow to the extent that purchase of new furniture would be necessary. Each office was allowed a free hand in arranging its furniture in the buildings in Houston. We would buy new furniture, put it in place and leave furniture in the governmental offices at Langley until they were cleared. Later we moved the older furniture either over to the Langley Research Center or shipped it by a less costly process from the Langley to Houston for warehouse storage and later issue as the Center expanded. In most cases, this move procedure simplified the move problem. There were some oldd-ball situations where packages or boxes disappeared and never were found again, but none of this was classified material.

76 After reporting in for duty at Langley, Walt Williams told me my assignment was to be Management Assistant to the Director of Space Task Group. I went to meet Dr. Bob Gilruth and he told me that there was an awful lot of work to do and for me to go do it. The following day there was a staff meeting at which two things appeared to require immediate attention. One was a proposal for communications tie-line to the Cape and St. Louis, and the other was for a charter air carrier from Langley to Patrick Air Force Base. Although I worked on both of these problems, the latter one was to take up most of my time for a good period. At that time, the only way we could go to the Cape was to leave Patrick Henry Airport at Newport News (which was some 20 minutes from Langley), fly to Washington on Capital Airways, transfer to a southbound National or Eastern flight, and something like four hours after you left Langley, we would be flying over Newport News going south. We would arrive

in Orlando at 11:00 p.m. still facing a 1 1/2 hour drive in a rented auto over to Cocoa Beach. We had people doing this once or twice a week, individually. Under a charter arrangement these people could leave Langley at 4:30 - 5:00 p.m. and be at the Cape 3 to 3 1/2 hours later, get to their hotels, and have a good night's rest before the next day's work. With only NASA passengers on board, it provided the opportunity for business meetings to be held aboard the aircraft. This was the rationale that was written into the justification which we prepared and took to NASA Headquarters. Dick Horner, predecessor of Dr. Seamans, thought this was a heck of a good idea. Johnson or whoever was head of NASA's transportation office came down to see me. After listening to our story he said that Goddard and Langley had both been concerned about a shuttle system of some kind which would service Wallops Island, Langley and Washington. In these cases the airline service at the moment was not providing the support we needed. The question was, could we get this kind of service from the airline? Horner had approved the thing verbally but in order to get the proposal of these two shuttle services through the mill, we had to get Al Seipert's and Dr. Abe Silverstein's approval.

76
Dr. Silverstein was very concerned about the political implications of generating a special regular airline service. Working with a fellow from Goddard I prepared a big chart-type pitch on how many passengers we were going to have, etc. We presented this to Johnson, Silverstein, and many others. Everybody who saw it thought we were out of our minds and suggested some alternative for solving the problem. We finally got Silverstein to agree that if we got CAB acquiescence, he would sign the request and sent it on for approval of the administrator. Johnson, the NASA transportation chief in Washington made arrangements

for us to talk to one of the assistants to the Chief of the CAB. A meeting was set up for the man from Goddard, Johnson, and myself to go over and brief the CAB representative on our problem and ask for help. We had the meeting in the afternoon of the third or fourth day after I arrived in Washington. We were given an introduction to a lineup of people and the man who was representing CAB -- a Mr. Rosenthal -- introduced his lawyers and a group of traffic specialists. I gave one pitch, and somewhere near mid-point, the CAB people stopped me and said something to the effect that they had a broad national policy of subsidizing the airlines and it appeared that we were intending to use taxpayers money to provide a service which the airlines certainly should be able to offer. They were not in favor of this arrangement. My reaction was probably rash and rural but I told them that my boss had a fantastically large assignment to carry out and although interested in the broad national economy, at the moment he was trying to get engineers to the Cape and back again, and as such he could care less about the broad national economy. I told them that if they wouldn't give us the support, we will get what we needed one way or another without their assistance. Immediately, the CAB people began suggesting compromises. One suggestion was that we arrange meetings with the airlines that would service the areas which we were talking about -- Eastern, National, and Piedmont (Piedmont covered the area from Washington to the Eastern Shore). After the meeting broke up we went to Rosenthal's office and he made all the calls necessary to arrange meetings with the airlines.

76
That afternoon we went over to talk to Piedmont officials at National Airport and the following day we met with National and Eastern Airlines representatives. We talked to Vice Presidents of both National and Eastern and to the President of Piedmont.

76
Piedmont gave us a letter that said they couldn't provide service direct into Wallops or a puddle jumper shuttle back and forth from Langley to Wallops. National wrote us a letter and said that they could not provide additional service at the time we required it (a 5:00p.m. pickup at Langley). Although they had authority to land at Melbourne they couldn't see an economical way to make a stop, so the best they could do was Orlando. Eastern would not provide a letter, but their representatives agreed that if we wrote them a letter concerning our discussions that they would regard that as a way to document the agreement. These three things we took back to Dr. Silverstein, he okayed the request and we were off and running.

76
A determination then was made by NASA Headquarters procurement people that the best way to go about setting up the service would be to have the Air Force ATC, who had experience in setting up charter services to arrange the contract for NASA. We would administer and finance it. With this Johnson took all of the documentation and went to St. Louis where ATC was located (Scott Field). I was in contact with him many times a day while he was there. He worked out a reasonable arrangement which called for the equivalent of tourist service on a commercial airline without high density seating. We wanted about a 30-passenger capacity and something like a 20 passenger per trip utilization for travelers from Langley to Patrick and three round trips a week. In addition, the contract called for an everyday shuttle between Langley, Wallops, and Washington which would vary in type of aircraft but could easily be handled by a DC-3.

76
The original award was made to East Coast Flying Service for the Patrick run. During the time the contract was being written, we did get

approval to write an interim short term agreement with Southeast Air Service, although I'm uncertain whether we ever made use of the authorization. The East Coast Flying Service support was above average. During the first year of operation there was never a late departure except once. On that occasion takeoff was delayed 27 minutes because the pilot had made a safety determination that he needed to have his exhaust system changed and the parts came by National Airlines and the flight was late.

76 We soon had a steady flow of passengers from the Washington NASA Headquarters when they recognized the convenience of this kind of service. They would ride the shuttle plane from Washington to Langley and then transfer to our shuttle to the Cape because it was very convenient and allowed them to be close to the people they had to do business with the following day. Dr. Debus didn't ride the Cape shuttle for the first six months or so, and one day while returning to Patrick from Langley he rode with us. Thereafter he wouldn't ride anything else. He and Dr. Von Braun insisted on obtaining shuttle service between Huntsville and the Cape.

214
213

The MSC Communications specialist -- Ulrich -- asked if it wouldn't be useful for me to have a radio telephone installed in the station wagon which we used for an emergency vehicle for the MSC Center Operations activities. Frequently we had to dash down to Ellington, to the Site or to areas where we had buildings under lease. It took quite a bit of time to traverse the distance between the sites. We had the radio phone installed in the station wagon. I made good use of this support tool. I would come to the office in the morning and return phone calls, and solve immediate problems. I would instruct Miss Townsend, my secretary, to pick up the material in my "IN" basket and bring it with her. On the way to Ellington she would read each piece of material and we would determine what had to be done with it, possibly make a phone call to get somebody started solving the related problem or she would take a letter in reply. Possibly we would call and arrange for a meeting to handle an immediate problem. We would take care of all of the correspondence enroute to Ellington. I would drop her off and she would return to the office by shuttle bus or by some other means. I would pick up Tony Yeater or Paul Anderson at the Facilities Division Office at Ellington and we would then go to the construction site. We did this nearly every day and in this fashion I completed my correspondence and my daily check of the construction site prior to lunch. This arrangement left the afternoon for business back at the Farnsworth-Chambers Building.