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U.S. Gov't **CONTENTS:** Biographical - [date/place of birth; family background] Education -Career Path -Wrine and WORum IS in hangle pilot Topics in astronaut ace MIC buguerque Ø 10 M DMAL + Rehaical QC ner 15 astonau m Artin PLANS in Wines 120 Val nala U rearances C 0 h an Q 0 N 02

INTERVIEW WITH JOHN H. GLENN, JR. March 15, 1968

My first connection with NASA and first interest in space, came while I was assigned to the Navy Department from the Marine Corps as a Project Officer in the Fighter Design Branch of the Bureau of Aeronautics in Washington. One of the fellows working at the next desk, had been assigned to the X-15 program, and when he was transferred I took over his duties. At that time, NASA was doing some studies on spacecraft and steerable reentry type vehicles, and there were some small computerized simulator projects at LRC, and the Langley people were looking for people who had test piloting experience to come down and try these things out. Since I was involved in the X-15 project, I was the logical person to go down from BuAfr.

I believe I spent a week at Langley flying reentry simulations. Jack Eggleston and Don Cheatham ran the project. That was my first connection with anyone directly involved in any of this space activity. I became interested in the build-up of the space program and later on when a search was made for people who would qualify as astronauts, I was most fortunate in being among the original 130 or so who survived the initial records screening. I was very much interested in becoming more involved in this astronaut program. I believe 32 of us were selected for physical examinations at the Loveless Clinic at Albuquerque, and then our final interviews with the selection team at NASA Headquarters in Washington, which was held in a little old building on 8th Street, about a block from the White House, where Dr. Glennan's office was located at that time. As I was in the final group of seven that were chosen, the arrangements

were worked out in a series of several meetings as to exactly what our future relation would be with our parent services. This matter was of some concern at that time. We were allowed to choose whether we would resign from our services and go with NASA full-time or whether we would be on loan, and most of us preferred at that time to go on loan, because at that time the space program was brand new and highly uncertain. Everyone felt it was much safer for us to be on loan for awhile, and the services really preferred it that way too as they would then still have a claim on us in case this program didn't develop. It was worked out that we would be on loan to NASA from our parent services but retain our military rank and our military privileges. We were given orders to report to NASA, which of course we did. A wild and woolly press conference was held on April 9, 1959 to announce the selection, and at it we were asked all manner of questions. In advance of the press conference, the new group of astronauts went to Langley and stayed in the old Peninsula Hotel, for a couple of days. We were briefed on what the manned space program would involve in more detail than what we had been exposed to before. We were told what was contemplated in the way of a technical program and what the administrative problems would be. We were told we could move our families to Langley. After that we went to Washington for the press conference on the 9th and then everyone that wanted to, took time to move families to Langley. Base quarters housing for those that wanted it was arranged at Langley AFB. We owned our own home in Arlington, Virginia, and as my children were squared away in the Arlington school system, which was excellent, I didn't want to move my family to the Langley area. I knew we were going to be traveling a great deal so I would be spending a

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good part of my time away from home anyway, and so rather than move, we continued living in Arlington, left the kids in school, and I traveled back and forth and lived in the BOQ when I was at Langley. I got home whenever I could and on weekends.

After we reported into Langley, all seven of us were assigned to one big room and it was known as the astronauts office. Looking back it is hard to believe that there were only a total of 120 assigned to STB at that time. There wasn't really much organization of the astronaut group to start with. Dr. Vos, who had been involved in the selection process and was a Navy psychologist, was assigned to take care of our training programs and to a lesser extent look after our administrative needs. For the most part, this was in the area of training, not only in spacecraft but survival training, and things like that. Much of this fell on his shoulders because there really wasn't anyone else to handle it then. One of the first things that Dr. Gilruth told us when we came was that one of the major reasons we had been chosen was becuase we were experienced engineers and test pilots and he felt we could apply this experience to this new area of testing of spacecraft. If there was anything at anytime in the program that we didn't like, that we felt that was dangerous, that we wanted re-tested or more work done on, that we had free access to him at any time to register our complaints. He would make absolutely certain that we were happy with the spacecraft before it flew. No one was going to push us into anything. Another ground rule or understanding we established with him then was that at any time we became unhappy with the program and wanted out of it for any reason there would be no question of our ability to do so. We were free to go back to our parent services any

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time we didn't like the way things were going. Of course no one had any thought of going back, once we got started in the program.

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The organization of the original seven gradually took shape as the need arose to do specific things that had to be done. We each gradually became responsible for our own area of specialization. An increasing amount of our time was spent away from Langley because we were working with the spacecraft prime contractor, or at the Cape later on launch procedures, or on survival training out in the desert. One of the first things we did after we got to Langley was to take a basic science course covering the latest thinking in the area of physics, rocket engines, astronomy, etc. Specialists brought us all up-to-date in these fields so that we would be generally aware of what the latest thinking was in each of these fields. This took up quite a bit of our time early in the program at Langley. Later on, we started branching out much more, even though some of our trainers remained at Langley. We had an air bearing trainer there and the first Mercury flight simulator which was hooked up to an analog computer. We did some of our water egress training there in an inlet Chesapeake Bay and in the hydro-tank at Langley. Each man was left pretty much on his own. Each man had to train himself. In part, such training was technical, such as this basic science refresher course. Then there was technical training on the spacecraft itself, and on the systems that would be used later on in flight with that spacecraft. We did some weightless training in an aircraft to see what our reaction would be. We had survival training in the desert in Nevada, out in the water at Pensacola, much later, after the move to Houston, and in the jungle in Panama. This survival training was important just in case we ever came down in the spacecraft and found it necessary to wait

48 hours or so while pick-up was arranged.

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When we first got to Langley we were reminded that all of us had to stay in good physical condition because we didn't know what the rigors would be encountered in space flight, or how we would react to it. We were asked if we wanted to participate in a formal athletic training program on an organized and daily basis, or if we preferred to pursue our own method of keeping in good physical shape. We chose the latter, for each of us had our own way of staying in good shape whether it was running, swimming, sports, handball, tennis, or whatever. The doctors had a pretty good reading on how we were doing in this area because we were given physical exams before and after almost every test that we went through such as centrifuge training sessions or anything like that. The doctors could tell pretty well whether we were really maintaining good standards of physical fitness. I guess probably building up psychologically to a flight also was involved, and I think if we had done the first two types of training well, I think the psychological area pretty much took care of itself -that is if we prepared ourselfs technically and physically as well as possible for these flights to where we had full confidence in ourselfs and our equipment the rest was automatic. We were given complete briefings on all the spacecraft testing. A system was set up where fact sheets were prepared that summarized the detail on all the tests being run so that we would have complete access to all information.

We knew that no one astronaut had it within his capability or his time to completely keep up on everything that was going on at that time, so we loosely organized ourselves along the lines of specialty areas, and this followed to a degree the backgrounds from which we had come. My

particular specialty area was cockpit layout and design. I had done a lot of this in BuAr and had worked closely with aircraft manufacturers on the layout of fighter aircraft cockpits. Al Shepard was more or less our astronaut specialist in the recovery area. This was appropriate because Al was a Naval officer and there were going to be water landings. He helped work out a lot of the procedures for post-flight pickup and recovery. Gus Grissom, who had done work on electronic control systems at Wright Field, was our control systems man. Gordon Cooper was our specialist in the launch operations at the Cape and in particular for seeing that the safety precautions were observed in the launch area. Deke Slayton kept himself posted on the boosters, how they were mated to the spacecraft and the interface problems between the spacecraft and the booster. Scott Carpenter was responsible for following navigation and communication and Wally kept abreast of latest work in the environmental control system and pressure suit design, as he had done some work in this area previously at Pantuxant River Naval Air Test Center. When we would have our meetings, each one of us would brief the other astronauts on his specialty area so that we were all ekpt apprised of new developments in these different areas. Nancy Low was the secretary to all seven of the astronauts. We all operated independently and set our own schedules to a degree and no one really directly supervised our activities until Kieth Lindell was detailed to STG from the Air Force and was assigned this responsibility for a couple of years. There was so much public attention devoted to all of us at that time, that Shorty Powers was assigned as the public affairs officer for STS. He arranged for press conferences and things like that for us. Gradually as we came up to a specific flight

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more and more time was spent at the Cape. While getting ready for my orbital flight, I actually lived most of the time out on the Cape in Hangar "S". This option, once again, was left pretty much to individuals preference. The idea was to avoid regimenting us to the point where we felt we were being hampered in our work. If people wanted to live off the Cape that was up to them. I found it more convenient to live at the Cape since we were doing all of our work there. But there still was a tremendous amount of travel required. That was one of our biggest problems at that time--just getting around to all of the places we should visit.

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One of the basic things we did right after we entered the program was to visit all of the major facilities doing work on the Mercury program. We visited the McDonnell Plant in St. Louis, we visited Rocketdyne, who was going to make the engines, the booster plant at Convair, San Diego, etc. These stops were not only a benefit to us but to people working in the area because it gave us a chance to get acquainted with them and give them a personal awareness of our feelings and our trust in them.

Following my orbital flight in 1962, as we began looking forward to the Gemini and Apollo programs, we began to sort ourselves out as to who was going to concentrate on the Apollo project and who was going to concentrate on the Gemini project. Gus early had expressed a definite interest in the Gemini program and played a leading role in this area in the astronaut group. By this time more astronauts had been brought in. They were involved in all of these different areas, too. My area continued to be in cockpit layout, crew station, presentation of information, etc., in Apollo, and I began to spend a great deal of time traveling back and forth between here and NAA.

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I was the oldest of the first group of astronauts, and in talking to Bob Gilruth within a year after my flight, he had stated that he felt the upcoming flights in Gemini and the initial Apollo flights should go to people who were going to be eligible for the lunar landing or for some of the early lunar missions. He felt that since I was the oldest of the first group, to keep on in active astronaut training in the hopes of being on one of these early lunar missions, might be a bit of wishful thinking. I had to face the fact that by the time the first Apollo flights came, I would be around 50 years old and being the world's oldest astronaut in permanent training didn't seem to be quite the way to approach the future, so he suggested that it might be wise for me to get into one of the management areas. I kept this advice in mind, and together with a number of other considerations, some of which were very personal, led me to the decision as to what I should do. Some of the opinions expressed by President Kennedy at that time, I am sure may have been a factor. There had been such a tremendous out-pouring of feeling and interest in manned space flight at the time of my flight that NASA may have wanted to use me as a crewmember later on. But in my event at that time, for a number of reasons, I made the very difficult decision to leave the program and run for the U.S. Senate. I felt that this particular area of science and research was important, and was convinced that very few people in Congress understood this to any degree. Some 2/3 of our national budget was being spent on the military, and on space, science and technical research, and since we had few people in Congress with a background of this type, I felt it was an area where I could do more good for the country than I could staying in a management or training position with NASA.

Government and politics had always interested me since I was in high school. So for these and a number of personal reasons, I decided in 1964 to declare myself a candidate for the Senate running in my home state, Ohio. Unfortunately, just before I got started in the campaign I fell and had a concusion affecting the labrynth area of my inner ear that knocked out of everything for about a year. However, I finally recovered, retired from the Marine Corps, went into business and engaged in other activities. I'm still a consultant with NASA in the space program mostly in Headquarters in Washington, but occasionally at MSC.

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as a group, The astronaut

Our relations with both the Public Affairs Office and with the MD's Lad occasionally had had some deep-seated antipathy based on real problems. Even among the astronauts there was no unanimity of opinion as what our responsibilities were toward keeping the public informed, and as to how much time should be devoted to this end. The requirements placed upon us varied greatly from time to time. There was such a preponderance of emphasis on public affairs activities for a while that we became convinced that this type of work was interfering with some of our training activities. We called a halt to some of it, and perhaps as a result we then were not doing enough in this area for a while. Eventually some new arrangements that were a little better controlled, were agreed to, but there always has been some tension between how much of our time the public affairs people should control. We definitely needed to keep the public informed, of course, because it is necessary to maintain public support for a program that's requiring so much national spending. However, it seemed for a while and to some members of our group that the space program was

being run as a public relations exercise. emphane

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Some of the astronauts felt we should be learning absolutely everything we could from every flight whether it fell in the area of medicine or science, and that all areas of science should be investigated in the course of manned space flight. Also, we should be giving time and thought to all of these different areas. There were others in the group who felt that our role was that of a test pilot, as we had in the past when working with aircraft, and that we should have a minimum of interference from the scientists and the psychiatrists, in particular, who were interested in the changes that occur in human beings as a result of taking part in this new and dangerous experience. This difference of opinion existed within our group as to how much time and effort we should put into working with the doctors, psychiatrist and to a lesser extent the scientist. Some felt all these things should come up much later after we had proven that the spacecraft would fly in space. Some felt that if we had enough confidence in the program, right from the start it was important to furnish just as much information as possible in every applicable field, including scientific observation of the human body in space.

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Life in the gold fish bowl did cause problems to begin with. It interfered somewhat with the things we were trying to do. Everywhere we went it seemed, there had to be the press conference, the extensive press coverage and photography sessions, and while this helped support the program, I am sure, sometimes it was carried to rediculous extremes. It leveled off after a while and remained at a much more sensible level.

We were a close knit group because we worked so closely together and, insofar as joint investments were concerned, we felt we ought not have any more restrictions than anyone else. Early in the program we concluded that

this was going to be such a new and unusual experience that interest in the astronauts would be extended to their families. If we were to permit people to come into our homes and interview families and children and really be a part of our family life, we saw no reason why we should not b be able to get some compensation for our loss of privacy, as the Government wasn't giving us any extra pay or anything for this type activity. And really there was no reason nor right for anyone to feel that we were obligated to let people into our homes and go through all of that inconvenience. Certainly none of us felt that we had the right to sell our reporting of the project. It was restricted to our homelife and family background -- what did the wife think, what kind of food did she like to serve at home, and what were the children's reaction to daddy being in the space program--things of this nature that were very personal and would be lost to history unless it were properly recorded. So after official sanction, it was decided that we would be allowed to be paid for this type of information. After extensive negotiations, Life Magazine bought the rights to this family reporting. This gave each of us more money than most of us had access to previously, so we jointly invested some of it in a couple of businesses, one of which was an apartment house in Washington. In addition, individual astronauts made their own private investments, of course, with other parts of the money.

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These investments were criticized to some extent by the press. Some of the press was unhappy about not having free access to our homes, which of course they really had no right to. So, in criticizing our contract with Life Magazine, we were accused falsely of using the space program for private gain.

Some of our biggest problems involved our personal legal rights, our public relations, and investment opportunities. None of us really had had much experience in these areas. Shortly after we were selected, we got to know a Mr. Leo d'Orsey, who turned out to be one of the best friends the astronauts had. He gave us 🛵 sage and wise counseling in all these areas, took care of all of our contracting problems, all of the many public relations problems we had, and served as a very good elder statesman for us. He helped in such matters as insurance. We could not get any before our flights, for instance. He thought that we should be covered, and while all of us had insurance programs while we were test pilots, he felt we should have additional insurance for the space program, but could not get it. Shortly before my flight in Friendship 7, he finally got one comconsider insuring pany to agree to insure me for the five or six hour period of the flight for \$100,000 for a premium of \$16,000. Leo worried over this, and a couple of days before my flight he called me and said that he had been up all the night before thinking about this problem, and had decided that he didn't want to bet against me. He wasn't going to pay \$16,000 to the insurance company, but he wanted me to know that if anything happened to me on the flight, he would personally write a check to Annie for \$100,000. He did write the check and gave it to another man to be presented to Annie in case anything happened to me during my flight. After the flight Leo joked with me, telling me how glad he was to see me get back down safely; that meant that he could tear up that \$100,000 check. This was an indication of the type of man he was. He was not extremely wealthy. He had adequate money and probably was wealthy by our standards but, even so this was one of the nicest gestures anyone ever made toward me and my family.

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This was typical of the type friend he was to our whole group during that period. When he died a couple of years ago, we lost a very good friend.

The comment has been made in the past that Shorty Powers, as head of the Public Affairs Office and a senior officer, more or less "pulled rank on us," or forced the astronauts into some public affairs activities that we didn't want to do. I don't believe there ever was a time when anyone really pulled rank on us in a military sense, and forced us to do certain things. Shorty, who had an expertise in Public Affairs advised Dr. Gilruth, Charlie Donlan, and Walt Williams, and the other people involved in Project Mercury at that time. I think we more or less acceded to Shorty's suggestions in this area because none of us had come from a background where we had experienced a lot of publicity and so we more or less went along and did things that he wanted us to do. But so far as I know, there never was any actual instance where military rank was pulled or anything like that. I don't think that would have gone over very well. The program wasn't being run on a rank basis anyway. We never conducted our training activities along lines where persons of higher rank enjoyed particular areas of preference. We were all equal as far as our training activities were concerned. Even though we each did retain our military rank, and were still in the military service, military rank was never a significant consideration among the group of seven.

Some of the criticism that was leveled at Scott after MA-7, was most unfair. If there was one thing that Scott wanted it was to get as much scientific information as he could out of his flight, and had pushed this idea hard. This matter had created two poles of philosophy within the group. One element of the group felt we were just military test pilots

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who were in the program to just ride the equipment and to comment on it as we had all done with aircraft testing before. The other element of the group thought this was a whole new area opening up in science and that we should get just as much information as we could in every field, whether it was in psychology, psychiatry, scientific observation, pictures of the stars, spectroscopic pictures and every possibly type of scientific observation. In the very early flights, mine and Scott's in particular, this got to be quite an issue. On my flight I had proposed doing considerably more than the final flight plan allowed. Because of some of the difficulties that happened on my flight with the control systems in particular, I had to cancel a number of the things that we had scheduled (I went the last two orbits for instance mainly on manual control which in itself proved our ability to work in space, but it meant that I did have to cut out a number of other scientific tasks, particularly some of the photographic work I was going to do). Scott's flight was the next one, and he was determined to work in as many activities as he possibly could in the area of science to show that we could bring back useful scientific information as well as just proving that man could operate in space. Some people wanted Scott's flight to more or less duplicate mine as a confirming flight. So I think if there was one area that Scott pushed very hard, it was in trying to develop as much information as possible, and if anything, maybe he tried to do a little bit too much.

The mail was a big problem after my flight because it came in from all over the world and it was in huge volume. We had messages from a wide range of correspondents: from heads of government down to common laborers. It was necessary to go through it and seine out the stuff that had to be

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answered expeditiously. Initially we tried to do the work at Langley, but it was too big a job. The mail was always a problem. I never knew quite how to handle it. Just opening the stuff and sorting it when it is coming in a volume like that and getting out replies that had to be made immediately, or making proper acknowledgment, including who signed them and how they were signed, were all problems. There was so much mail that the people at NASA Headquarters took over of responding to it. Steve Grillo in Administrative Services at NASA Headquarters took charge of it. Steve was a very conscientious and patriotic type and this out-pouring patriotic feeling really meant a lot to him and he took on this mail room operation as a labor of love. He set procedures to make sure every letter got an answer. The mail was promptly and properly screened. There were, of course, a huge number of momentos. They varied from things that kids would paste together -- little souvenir flags, dolls and that sort of thing -to valuable items, such as gold medals. This correspondence was kept because the Library of Congress had asked for it when we no longer had any immediate need for it. There it would be classified and cataloged, and sociological studies would be conducted to determine the type people that write, the geographical distribution around the country, when they mailed their letters, what the various subjects were, and so on. We did keep all of the mail, boxed it, and recently sent it to the Library of Congress. I think the total volume in about the first four or five months after the flight ran somewhere in excess of 350,000 pieces of correspondence, and probably up to a period of maybe eight to ten months, after the flight we probably had around 400,000 pieces of mail. Steve had to set up a separate mail room section just to handle w mail. For a while, about four or five

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people worked full-time answering my mail.

After I was injured and was out of everything and at home about nine months recovering, I decided that a lot of this mail might be interesting enough to put into a book. We organized special interest letters and I did a book on them that was published.

Even now, some six and one-half years after the flight, with what NASA gets and forwards to me and what I get directly here at home, my mail probably averages from 125 to 150 letters per week. Out of that number, I suppose there are 20-25 invitations a week to speak, appear, or to participate in something. Obviously, I have to turn down most of occurred at a time these. My flight seemed to have triggered an outburst of patriotic feeling and enthusiasm. After the flight, I was asked for my personal feelings with regard to religion, young people, and other subjects and I never particularly held back on my comments. Certainly I didn't invite any questions like that but I think once I had made a few comments, they seemed to provoke more questions. When you have taken part in one big event like this, suddenly people have the idea that you are an expert in 25 different areas, which is ridiculous. Nevertheless, they asked questions about a lot of things, and while I didn't push my attitudes on anyone, I did answer honestly what my thoughts and feelings were and some of these things seemed to evoke a continuing response through the years beyond anything I foresaw at that time. This was particularly true in religious and patriotic matters. My support of the Boy Scouts and other programs of this type have resulted in continual mail. The Library of Congress, I guess is cataloging and working over the stuff now. The momentoes I kid received -- everything from a paper airplane made by some din to a gold

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medal from a foreign government--have all been sent to the Smithsonian in Washington for whatever use it can make of them. I imagine most of that stuff will eventually be destroyed because most of it wasn't valuable at all but the Smithsonian wanted to show how diverse a response will come from some big event like this.

It seems to me that we shipped about 150 cubes of mail to the Library of Congress and about 50 of momentoes.

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When onboard TV was first proposed there was discussion among the astronauts over whether we should have a TV camera onboard. There was some difference of opinion as to the merit of this proposal within the astronaut group. My own attitude on it was influenced by my concern over weight. We were extremely concerned about the weight of the spacecraft. We had to be constantly alert to the possibility of scraping off a few pounds here and there to make the flight more reliable and give us a little bigger margin of safety. My concern with TV, wasn't that I would not have have someone looking over my shoulder from the ground at the Control Center, or the fact that it would enable more people to vicariously share in this experience, which of course would have been good. My only concern was whether it would seriously increase our weight or would use up some of the battery power that we needed for other purposes. At that time the reliability of the equipment wasn't very good and to carry something along that we were not reasonably certain would work well was of more than casual concern. I think some of our people did have the attitude that they didn't want someone looking over their shoulder in the spacecraft but I never felt that way. I felt if it could do some good in keeping the people on the ground informed, okay. And if we let more

people sorta share in this experience, we would gain more public support for us, that was also fine. My main objection to it at the time was it was not a fully developed piece of equipment, and it was not yet reliable. It wasn't as much an issue during my flight. I think it became more of an issue later on some of the other flights.

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