

ORAL HISTORY TRANSCRIPT

EILENE GALLOWAY
INTERVIEWED BY SANDRA JOHNSON
WASHINGTON, D.C. – 14 SEPTEMBER 2000

JOHNSON: Today is September 14, 2000. This oral history is being conducted with Eilene Galloway in her home in Washington, D.C., for the NASA Headquarters History Office. The interviewer is Sandra Johnson, assisted by Rebecca Wright.

I want to thank you allowing us in your home again to continue our discussion. I'd like to begin today by asking you to please tell us a little bit about your background.

GALLOWAY: Well, I was born in Kansas City, Missouri, on May 4, 1906, and I was an only child. My mother was born in Texas, and my father in Louisiana. They [the families] had been in this country for a long time. My father's family originated in Leiden, Holland [Netherlands], and they came to New York when it was called New Amsterdam in the early 1600s. All of them fought in the Revolutionary War, and they were mostly lawyers and educators and people like that.

My mother's family came from Scotland and Ireland, and they were mostly farmers. My mother's father was a farmer. He had had a merchant store in ... McAlester, Oklahoma, and then he had a farm in Ashland.

I grew up in Kansas City, Missouri, where they had wonderful public schools. I'm really very happy about the education that I had there. All the teachers seemed to be anxious that I should do everything perfectly. They were insistent on that. It was especially wonderful in Westport High School, where I got some of the training that was of benefit to me throughout

my life. I always knew from the very earliest days that I had to be able to make a living. I had to have some sort of skill.

First, I decided to be a dressmaker, which I was by fourteen. Then when I got to Westport, I took shorthand and typing so that I could become a secretary. In the last two years, I was on the debate team, and I was captain of our team for ... two years, and we won our debates. I had marvelous training in public speaking and in taking a subject and doing research and learning how to do pro and con so that I could be on either the negative and positive of the debate, and that was of great value to me later on in the kind of work that I took up.

So when I graduated from Westport, I was awarded a four-year scholarship to Washington University in St. Louis [Missouri]. I went there—let's see. It was in the fall of 1923. The first week I was there, having been at a lot of parties, sorority parties, at one of the dances I met the man I was to marry. I was in the Political Science Department, and he was taking an M.A. [Master of Arts] in the Political Science Department under Dr. Shepard, and I was working doing shorthand and typing for Dr. Shepard in the afternoons. So George Galloway and I fell in love, so we got married at the end of my sophomore year.

Then we came to Washington, D.C., because he had to finish his doctor's degree at the Brookings [Graduate] School of Economics and Government, and then got a job in the Bureau of Municipal Research in Philadelphia [Pennsylvania]. So I was then in a position to apply for the rest of my college career at Swarthmore College, which is right outside Philadelphia.

There I was very fortunate, because they were just starting the honors program. This was a program in the social sciences whereby you did really intensive research and you had to write papers. For two years I took that. I had the baby during the spring vacation of my junior year, which surprised the people at the college. In fact, I almost didn't get into the college

because the dean said they had 250 boys and 250 girls, and I would make 251. This upset him no end, but I was voted in by the faculty of this new honors program. That was how I happened to get in.

Well, anyway, I graduated with high honors and Phi Beta Kappa, and they asked me to teach, and I taught for two years in the Political Science Department. I taught the introduction to the course and also a course on American municipal government.

Then my husband got a job in Washington [D.C.], so we moved to Washington, and that is about all the background I have on that.

[In 1930 my husband was offered a position with the Editorial Research Reports in Washington so we left Swarthmore. The depression worsened and then Governor [Gifford] Pinchot of Pennsylvania appointed my husband to the Greater Pennsylvania Council and we moved to Harrisburg, Pennsylvania. Unfortunately, not long after [that] the depression affected the state government and the Council was abolished. Not long after that Franklin [D.] Roosevelt was elected President and the New Deal began. My husband became a staff member of the National Recovery Administration (NRA) in Washington, and I worked for the Federal Emergency Relief Administration (FERA). I was in the Adult Education Division and in charge of free and inexpensive materials [for adults], a nationwide program. I wrote a report about that. I became intensely interested in adult education and also did volunteer work for the District of Columbia. I compiled a directory of "Educational and Recreational Opportunities in the District of Columbia" and The Washington Post distributed two editions, altogether 200,000 copies. Then my husband became Field Representative of the National Economic and Social Planning Association and we spent a year touring the United States, doing research for reports

my husband wrote. It was after that I began my work at the Legislative Reference Service in the Library of Congress.]

JOHNSON: So Swarthmore College and the honors programs there really prepared you for your later life.

GALLOWAY: Yes, it was the research in the factual material. It was relating the social sciences to each other. It was interdisciplinary research and it was writing. We had to write lots of papers. It was a very intensive course. So all these things combined to give me some preparation for the work I was to undertake later.

JOHNSON: A really good background. What caused you to apply for a position with the Library of Congress?

GALLOWAY: Well, in August of 1941, the Legislative Reference Service had a position open for an editor of post-war abstracts. We were not in the war yet, but the State Department anticipated that we would get in the war, which we did very shortly, because Pearl Harbor came on in December. They wanted to have a lot of work done in what happens and what do you do after a war was over, because they were assuming that if we were in the war, we were going to win and we would have problems. I was to do research on the post-war problems.

So I became editor of the post-war abstracts, and there I learned how to do research in the library, [where] the Legislative Reference is the research arm of the Congress, and it is set up in order to do factual reports that are not political, but help the members to identify issues

and the reasons for and against [issues], so they can make up their mind. So this was a very valuable experience, because as soon as the post-war abstracts were over, I became editor of the [Public Affairs Abstracts which furnished information on problems before Congress.]

JOHNSON: We can come back to it if you'd like.

GALLOWAY: Yes, I didn't know whether I was getting into your next question.

JOHNSON: Well, it's close, but go ahead. I was going to ask you about some of the special characteristics.

GALLOWAY: Well, in doing these abstracts, I had to make assignments to people of different subjects on the different issues. This was a very small organization, so we didn't have a lot of competition between people. We would have one person in Social Security, one in education, and one in agriculture, and so forth. So I would assign these, and I assigned myself all the abstracts to be done on international relations and national security. So I became very interested in national defense. When a position became open for a national defense analyst, I applied for it.

We did not have anyone there at that time who worked on national defense, and no one had developed the subject in terms of the library giving information. So I studied the agendas of the military services committees and the foreign affairs committees, and I read everything I could on military affairs. I worked on assignments that had to do with military manpower, any

kind of military legislation, appropriations. I had wonderful assignments on the organization [of] the Department of Defense.

After the war, we had to have a special department for the Air Force, because during the war they had been connected with the Army. So that was a political science problem, with organizing the government and figuring out the administration and the management.

I read a lot of biographies that had been written by generals and admirals. I was especially interested in doing research in the work of generals who had been very conspicuous in predicting consequences. That is, when you make a decision, it always produces consequences. I did a lot of work with the books of Colonel J.F.C. Fuller, a British general who had predicted that the Maginot Line that the French were building to protect themselves against Germany was useless and it was waste of money and so on. He proved to be right, because when the Germans broke out there, their panzer divisions just went around the end of the Maginot line. They didn't ... make a frontal attack on it, so it had been useless. Also, he has a book on future wars, and I read two pages in there that I think if all our generals had read it, we wouldn't [have] got involved in the Vietnam War the way we did, because he explains exactly why you cannot win a small war. It's a whole chapter on small wars.

So I was really deep into all of this. Well, that's the long answer to your question.

JOHNSON: You just developed your own career by choosing that yourself.

GALLOWAY: Yes, and no one had defined it before. I mean, we were set up to do anything that Congress did, but no one had ever said, "Well, this is a section that has [not] been developed, and how do you develop it?" I developed it mostly by studying agendas, and whatever the

subject was about, then I would write about it. I wrote "The History of Reserve Forces from the Time of George Washington up to the Korean War," ["History of United States Military Policy on Reserve Forces 1771-1957,"] and I wrote "Guided Missiles in Foreign Countries" [1957]. Those things were published by the House and the Senate. So I was working very closely with the armed services committees.

JOHNSON: What was your role in the legislative process concerning atomic energy?

GALLOWAY: Well, when the atomic bomb went off, of course no one had ever worked on that. I asked Dr. Griffith, who was our director, if I could write a public affairs bulletin. I didn't know anything about atomic energy at the time, but he was delighted that I was willing to take this on. So I started studying all the science and everything that I could get on the scientific aspects so I could understand it, and I wrote a public affairs bulletin that was published, and it was "Atomic Energy: Issues Before Congress" [1946]. So I identified the issues and provided the material for the people who were having hearings to set up the Joint Committee on Atomic Energy. [I was co-author with Bernard Brodie of "The Atomic Bomb and the Armed Services," 1947.]

This had some relevance to what happened later in outer space because, again, it was a legislative problem of organizing the executive branch and organizing the Congress to be able to cope with problems of atomic energy. The subjects were somewhat similar in a few ways. That is, they were both connected with war and peace. There were many peaceful uses of atomic energy, and also it could be used for war. So it was kind of a natural thing to connect with all of the national defense work I was doing.

JOHNSON: So you brought out not just the war issues, but the peaceful uses.

GALLOWAY: The beneficial uses.

JOHNSON: What would you regard as the highlights of your career on Capitol Hill?

GALLOWAY: Well, one of them was my appointment as a Special Consultant to the Senate Committee on Aeronautical and Space Sciences. One was my work with Lyndon [B.] Johnson on the hearings, on the missile satellites situation. My work with [Congressman] McCormack in the House on the same subject, that is, the legislation that set up NASA, that was very important. Then a highlight was being sent by the Senate to the United Nations and to some foreign conferences. [This experience led to opportunities for keeping abreast of international space activities. In 1995 when the United Nations was celebrating its 59th Anniversary I was invited to speak on "Space Law: Role of the United Nations: Organization and Management." In 1997 I was invited by the United Nations and the Government of Austria to participate in a seminar at Alpbach, Austria where I gave a paper on "Space Futures and Human Security."]

Then by this time I was promoted from the lowest—I had gone in there at the lowest paying job for a researcher—and I was promoted to the top level. That is, at first I was just what they call P-1, a Professional 1, and I wound up as a Senior Specialist in International Relations/National Security. So that was a highlight.

JOHNSON: What time period? How long between those two positions?

GALLOWAY: Well, I went in 1941, and I guess I became a senior specialist at the time I was working for Lyndon Johnson.

JOHNSON: Sometime in the late fifties?

GALLOWAY: Yes [or early sixties].

JOHNSON: That's quite a rise then in prestige and pay and everything else.

GALLOWAY: Yes. Sometimes oral history people ask how I handled the problem of being discriminated against because I was a woman. And I was never discriminated against, and the question always surprised me.

JOHNSON: So you never felt like there was a different treatment or that you were treated any differently at all?

GALLOWAY: No.

JOHNSON: That's wonderful.

GALLOWAY: And this is true in all the space things. There are outstanding positions that women hold in the space [field], not only in the United States, but in other countries.

JOHNSON: In the research that we've done, it seems to be the case with most of the women that we've talked to, that they feel that way.

GALLOWAY: When you're in a meeting and there are a lot of people from different walks and people who have specialties or they're from different nations, nobody cares anything about any of that, because we're studying a subject and trying to do something with it.

JOHNSON: You're more interested in the subject at hand than who's actually speaking. Do you have any recollections of Congress in action when working on outer space legislation?

GALLOWAY: Let me see what I have here. Yes, my main recollection of that is the swiftness and the effectiveness with which Congress reacted after the Sputnik went up [October 4, 1957]. Lyndon Johnson started his inquiry into the missile satellite hearings on November 25. That was not very long after October 4, when the Sputnik went up. During these hearings, we changed the perception of the problem from one that was originally only national defense to one that also had beneficial uses from space and meant that we could hope for peace.

Then the Senate set up the Special Committee to look into setting up NASA, and the House set up a Select Committee for that purpose. Both committees had the representation on their membership of all the other committees that were affected by space legislation. Then they passed appropriations and they passed all kinds of legislation to make the passage of the NASA Act as swift as possible. They set up ARPA in the Department of Defense [DoD]; that is, the

Advanced Research Project Agency. They gave money to DoD to work on space while they were setting up NASA. Then by July 29, 1958, NASA was created.

So that was very fast, and everybody was working on it doing whatever they could. There were no barriers, no legal barriers and no budget barriers. The way they're solving problems now is quite different.

JOHNSON: Definitely. But it was unusual even for that time, too, for it to move that swiftly?

GALLOWAY: Yes, they organized the executive branch, they organized the Congress, with two new standing committees. By the fall [of 1958] was when [Dwight D.] Eisenhower had asked Lyndon Johnson to go to the United Nations and help set up the Ad hoc Committee on the Peaceful Uses of Outer Space, and that showed that we were looking at it from every point of view. We were developing [outer space] from national and international [aspects], and the leadership really came from the Congress. It was a remarkable achievement. By October of that year, we had the first Administrator in at NASA.

JOHNSON: That's amazing. Do you feel that if the United States had not moved that swiftly—I mean, the other countries involved, do you think they would have tried to do the same things as far as setting up the peaceful side of it?

GALLOWAY: I don't think they would have had the wherewithal to do it. I mean, you had to have somebody spearheading this. The United States as a whole was the real leader that the scientists and the engineers and the politicians and the economists and everybody got together.

There were those three forces, I think I mentioned before, that combined instantly out of fear of orbiting weapons and belief in the benefits that space activities were going to produce.

JOHNSON: And it certainly did make a difference.

GALLOWAY: Yes.

JOHNSON: During that time or after that, you traveled with your husband, as you mentioned earlier, George Galloway, to conferences [of] the Interparliamentary Union, and you went to several different countries when you traveled. Could you tell us about some of your experiences when you were traveling with him?

GALLOWAY: Well, the Interparliamentary Union was set up. I have an account here of their first statute. "The aim of the Interparliamentary Union is to promote personal contacts between members of all parliaments, constituted international groups, and to unite them in common action to secure and maintain the full participation of their respective states in the firm establishment and development of democratic institutions and in the advancement of the work of international peace and cooperation."

Now, my husband was the Executive Secretary of the United States delegation to these conferences, and they were held all over the world. We went via Ecuador and Peru to Brazil. We had conferences in London and Ireland, Norway and Sweden, Switzerland, France, Italy, Israel, [Australia]. We had [Congressional] delegations. I have here a committee print of the Interparliamentary Union Dublin Conference. The members were put on committees that dealt

with issues of interest to all members of parliament. Then our senators and representatives were put on these committees and they studied them, studied all these subjects that would bring members of parliament together for peaceful purposes and also in order to coordinate the work on certain subjects that they had a common interest in.

Then my husband wrote, and got other members that he knew, to write articles that would be helpful to our members in going to these conferences. I always had something odd happening. My husband wrote for this one—let's see, hope you don't mind my looking here—“Strengthening the Effectiveness of Parliamentary Institutions.” Well, when we arrived in Australia, in Canberra, Australia, and we had an official plane—these were always very exciting meetings—at this point we arrived and we were met by the Prime Minister and went to the Parliament Building in Canberra, where I was sitting in the lobby. Now, I was on my vacation and I was, you know, I was helping my husband as I could, and I was really surprised that I was in Canberra, Australia. It seemed like such a faraway a place.

But what happened, our Senator [Kenneth Barnard] Keating came in, caught sight of me, and he said, “Oh, Eilene, I have this speech that I have to give here, and I don't like it. Could you write me another one that is more pertinent to this occasion?”

And I said, “Oh, yes.” You know, I'm like the girl from Oklahoma; I can't say no. I said, yes, I would. The Australians were very surprised by this, but they gave me an office with a typewriter. Again, I thank my teacher at Westport High School for knowing shorthand and typing, and I wrote him a new speech to give. So something like that is always happening at these meetings.

[Another time when the IPU was meeting in Teheran in the early sixties, Lyndon Johnson recalled the U.S. Delegation in the midst of the conference because he needed votes to

pass some bill. My husband had to leave with the Delegation immediately in the big USA plane. It was not clear to me then or now why I was left to fly in another plane which had been previously ordered to fly the Delegation to Istanbul on the way home. When this plan landed in Istanbul the U.S. Embassy welcoming group was astonished that I was the only passenger to alight when they had been expecting the whole Delegation. And I was astonished to become the beneficiary of their welcoming plans even though I was aware of LBJ's decision for quick action.]

[At one IAF Congress—I don't remember the year—but I recall that late the day before the Congress opened we learned that the U.S. official who was scheduled to give his speech at the opening ceremony the next morning, would be late in arriving and all copies of his speech were with him. I was really upset by this situation. I discovered that the Russians had a copy of the U.S. speech, probably obtained earlier at the United Nations office in New York but they had translated it into Russian and had no English copy available. I took a copy of the Russian translation to the office of the Voice of America office and explained the situation to them. Overnight they translated the Russian back into English and ran off enough copies so we had them for distribution the next morning when the Congress convened. There was a reception at the Embassy the night before and I remember walking with the Ambassador around the swimming pool while I explained what had happened.]

JOHNSON: You'd never know who you were going to meet or who was going to recognize you.

GALLOWAY: One time the American Bar Association invited me to a meeting, and I was fixing my own paper, you know, and typing a round, and someone came up and offered me a job as a typist. I was really very proud of that. [Laughter]

JOHNSON: Did you ask him how much you'd be making? [Laughter]

GALLOWAY: No, I'd been tempted to tell him I already had a job.

JOHNSON: When you were traveling with your husband, what was the time period in there? You were still working at that time in—

GALLOWAY: Yes, I was working, but, you know, I have annual leave, and so my annual leave I took at the time when they had the conferences.

JOHNSON: So every year whenever you had time off, you would just accumulate it and go with him?

GALLOWAY: Yes.

JOHNSON: That's interesting. So you got to travel over most of the world then.

GALLOWAY: Yes, we did a great deal of traveling, and it was really interesting because we got to meet so many people, and the members of the different legislatures met each other and then

they could get in touch with each other later on different subjects, when they wanted to work together on disarmament, for example, or some subject like that, or some economic subject.

JOHNSON: You had two sons during this time, too. Did they ever travel with you?

GALLOWAY: Yes, yes. My first son [David] was born while I was at Swarthmore. He became news editor of the Los Angeles Times in Costa Mesa, California. A few years ago he died. But he had three children, and so I have those three grandchildren, and from them, four great-grandchildren.

My other son [Jonathan] is a professor at Lake Forest College in Lake Forest, Illinois. He also has three children. So I have lots of grandchildren and great-grandchildren.

JOHNSON: You did your traveling on your own, too, with the International Astronautical Federation. Can you share a little about your experience with that?

GALLOWAY: Well, the International Astronautical Federation is composed of organization members and then [there are] two institutions that are composed of individual members that help with all the work that is being done: [the International Institute of Space Law, and the International Academy of Astronautics].

My first contact with that was very interesting. I was going to a meeting and the Senate was sending me there—they paid my expenses—to London. I was on a Navy plane with Theodore von Karman, who is one of the main people who invented jet airplanes. He was thinking of setting up some organizations to take care of outer space and having one, the

International Institute of Space Law, and the other one was the International Academy of Astronautics. So I remember sitting beside him on this plane, and he was going over this with me and deciding what people we should invite in order to get the thing going.

Then when finally it was organized by 1959, I became a member of the International Institute of Space Law first. That was because I worked on all the laws in the U.S. and then the space laws in the United Nations. I became the vice president of that. After many years as vice president, I became an honorary director, and that is what I am now. That's what my title is.

Now, on the International Academy of Astronautics, first [C.] Stark Draper [Massachusetts Institute of Technology] was the president when I became the member, and I was in the section on life sciences. They had only three sections: life sciences, basic sciences, and engineering sciences. So he decided to set up—no, I think it was the succeeding president, George [E.] Mueller [NASA Associate Administrator for Manned Space Flight], who was the one who did the navigation, you know, for going to the Moon, and George Mueller decided to have a fourth section on the social sciences.

I was elected to three terms—that is, nine years—to serve on that. My responsibility was to relate the life, basic, and engineering sciences to the social sciences. I was considering all the social sciences. Now, this went back to my experience at Swarthmore, the training that I had in doing interdisciplinary research. This was very unusual, you know. When you look ahead, you don't see anything like that happening, but when you look back, you see there was some kind of a logical connection going on.

It just went into everything. For example, in working on the conditions of members of a crew in the Shuttle, you needed a sociologist in addition to all the science and engineering. I got a sociologist who had studied the way people lived in [a] confined habitat in Antarctica, and

she had also gone to Russia and interviewed their crew members, and she had gone down in submarines and did that. So we were able to connect that up with the Shuttle.

JOHNSON: So that really makes a difference to make sure that you knew how people would react in confined spaces and in long duration.

GALLOWAY: I could do that with all of the social sciences, that is, identify which ones are needed in order to solve a certain problem.

JOHNSON: So you were an expert in solving problems.

GALLOWAY: So the European Space Agency invited me to their meeting in Beatenburg, Switzerland, also to work on this with regard to the Moon and Mars. I gave a paper on "Space Science and Technology on the Moon-Mars Mission" in Dresden, Germany, and that was how they happened to invite me.

Again, I had an amusing experience. I arrived in Zurich, Switzerland, and the plane comes in and the railroad station is on the bottom, is on the underground. I had to go from the plane to the railroad, so I had a wheelchair that took me there, and the man was very attentive, but when we got to the railroad, it was two hours before I was to leave for Beatenburg. So he didn't know what to do with me, and he took me to the Lost and Found, and I was the only animate person in this. Everything else was just lost wallets and umbrellas and things like that. But he remembered, fortunately, to get me in time to get on the train for Beatenburg.

JOHNSON: So nobody tried to claim you at the Lost and Found?

GALLOWAY: No, I was unclaimed.

JOHNSON: You were unclaimed. When was that? What year did that trip take place?

GALLOWAY: Well, I don't remember. I go so many places that I don't really—I'd have to look that up. [It was in 1994 when the European Space Agency held an International Lunar Workshop: Towards a World Strategy for the Exploration and Utilization of Our Natural Satellite. My paper was on "Political, Legal and Economic Aspects of a Return to the Moon."]

JOHNSON: On the future?

GALLOWAY: Yes.

JOHNSON: And I'm sure they value your opinion, since you've been doing this for so long and they're still calling you.

GALLOWAY: Yes, I suppose so. Anyway, the International Astronautical Federation is very important in [bringing] together people from all over the world. They get to know each other, and all these space conferences keep it going in all these countries, because it's also international. The people know each other and they can solve problems that way and get together more easily.

JOHNSON: And, I imagine, promotes that feeling of peace that you all tried to create at the very beginning.

GALLOWAY: I think so.

JOHNSON: Just share the information. There's quite a few significant differences in the Senate staffing now compared to the way it was when you were involved. What are your thoughts about that?

GALLOWAY: Well, when I was working for the Senate Armed Services Committee, and for any of the committees, I'd worked for Foreign Relations, whatever committee it was, there was only one unified staff and they were not designated to be the Republican or Democratic. They were just working the same way we were in the Congressional Research Service [CRS]. That is, they were providing factual information on issues that had to be solved, whether it was health or agriculture, whatever. This worked very well, especially from my point of view of being in the CRS.

[Senator Stuart] Symington, for example, was a Democrat. Margaret Chase-Smith was Republican. [Senator Leverett] Saltonstall was a Republican, chairman of the committee, and I worked for him when the Senate went Republican. I worked for Russell when it went Democratic. These things [political parties] were not counted; they were not in on anything we were doing.

I think it was easier on my subject than it would be on some because people are apt to get unified in wanting [unity on] national defense. You know, they'd just argue over maybe some details. However, there were some places where the minority members, whoever is the minority, were not evidently getting the service from the staff that they thought they should have, so they started a system of having two staffs, one Democratic and one Republican. I think that was a mistake, because this division in the structure produces a division in many other ways. There wasn't any more space, but you had twice as many people. If all these young people come in and they're very anxious to solve problems, you'd have more problems than you need. [Laughter]

Also, outside people who want to get in touch with them and give them information have to get hold of two different people, you know, a Republican and a Democrat. So it's rather—usually on a committee, you didn't need that. The member could do that in his own office. In his own office he could have either all Democrats or all Republicans, but it wasn't necessary on the committees. So I think that was unfortunate.

JOHNSON: So it made the whole process more cumbersome.

GALLOWAY: I think it makes it more complicated. It takes a little longer, you know, to get some things done, because you have more people arguing about more things. That didn't affect me at the time, because, as I say, I was in the Congressional Research Service.

Now, I can give you an example. I have here some examples of the kind of work I did internationally. Whenever the Senate sent me to the United Nations to go to the Committee on Peaceful Uses of Outer Space or the Legal Subcommittee, I would take all this information back

to the Senate and then I would work both for the Space Committee and the Senate Committee on Foreign Relations, because they were both working on the same things. So then I would write a report like this. This is the main space treaty on principles governing the activities of states in the exploration and use of outer space including the Moon and other celestial bodies.

Then this is used by the two committees, Space and Foreign Relations, when the Congress considers whether or not it's going to give its consent to ratification. I set it up like this, that is, in columns, which makes it easier for the members to see what the pros and the cons are.

Now, this was one on the space treaty proposals by the United States and the USSR. So there, you see, I have in columns what the United States' position is, the Soviet position, and over here I have my analysis. So that way they can decide what they want to do about it.

I made a big report, I mean it was about a yard wide and about a foot high, for the conference committee on the NASA Act that way, where I put in the House provisions, the Senate provisions, anything that was different, what they had to decide, and some comments.

This one was on the agreement on the Rescue of Astronauts, the Return of Astronauts, and the Return of Objects Launched into Outer Space. Then the Senate can use this. There I have a lot of space materials about what is launched and not launched. Again, this I had to explain in more detail, so these are longer, about the astronauts and rescuing them. Now, this is background for a very interesting problem because we never could decide how high is up, where air space ends and outer space begins. This was discussed at the beginning of the Space Age, and it is still on the agenda of the Committee of Peaceful Uses of Outer Space, in Vienna now.

The legal situation of pilots operating in air space where there's sovereignty, they must have the approval of the nation in order to fly through. They have a flight path and they have an approval. If they don't, they can be shot down, and that's legal, and that's what happened to the U-2. The Soviet Union shot it down. But the astronauts, however, we don't treat them that way. This is an international agreement whereby not only they are to be returned if they fall down, also the objects and any part of the objects are to be returned. Apparently they are to be given a parade and treated beautifully, whereas the others can be put in jail. So you have a different legal system for astronauts in outer space than you have for [pilots] in [air] space.

Now, as soon as they manufacture a plane, a vehicle, that can fly both in air space and in outer space, you have a legal problem that is very difficult, and that is why they're taking so long to discuss it.

I was invited to a conference in Thailand one time—don't ask me when it was but it was. Anyway, I wrote a paper. My paper was on this subject, and I thought I had solved the problem. Then I lost the paper, so I don't remember exactly how I solved it at that time. [Laughter] [The paper was on "Delimitation of Airspace from Outer Space" at the World Peace Through Law Conference, September 7-12, 1969.]

JOHNSON: I'm sure somebody had a copy of it somewhere.

GALLOWAY: I have so many papers lying around.

JOHNSON: I can see where that would be a definite division, but where do you draw the line because of those peaceful uses?

Well, you're talking about writing there. Could you share with us the process of research and writing outer space history and the documentation?

GALLOWAY: I'm very interested in that subject because I have seen so many articles and books that are based on secondary material, where the people are very lacking. First, they don't study the facts, the science and technology, which you have really got to know in order to work on it at all. Then they are using secondary materials instead of official sources. I thought that we should have rules for doing historical space research. So I thought that first a person needs to have a basic factual [knowledge] of space science and technology in determining what can be done and what cannot be done in order to achieve any kind of successful space operations. But all the political and economic decisions have to conform to these facts. You can't make a decision if you can't carry it out.

Second, the manuscripts ought to be up to date as [of] the time when they are published, so attention ought to be given to how fast this field is moving, and you get hold of the latest material. The manuscripts ought to be based on official documents. Now, this is the worst thing that happens. There's a great deal of difference between the people who come into the space program at the time of Apollo or afterward than the people who came in at the beginning. The people who came in at Apollo, when they saw that we were not going to go ahead and do anything with it after that, came to the conclusion that NASA was of no use and there was no use trying to [do] anything. Everything was negative and coming to an end, and the space program was not worth anything and so on.

They overlooked the fact that in 1962, which was seven years earlier, the Communications Satellite Act had established a worldwide space communication system that

was highly profitable and was one of the things that helps keep the peace because no one wants to interfere with that technology, and that we had made outstanding strides in meteorology, saving lives and property and in disaster relief, and in all kinds of medical research. We had made tremendous strides. So they were basing their conclusion on one incident, and they were not up to date, and they hadn't used any official sources.

Now, these official documents are national and international laws. They are hearings and reports in the Congress, and there are all kinds of international agreements, and they especially should look at testimony that's given by the heads of all of our space agencies at a hearing, because that's really up to date and very official. Sometimes you'll see an article and it doesn't have a single footnote to an official reference. They just got on the Internet or something and used a lot of secondary stuff. They ought to have a knowledge of the national and international legal conditions and the regulations that we have. They should recognize that all the disciplines that you need in order to work in space are interdisciplinary, so they can't just be specialists without a regard to the total context in which they're working.

So, briefly, the way I summarized this was attention to space science and technology, up-to-date information, use of official sources, awareness of the total multidisciplinary setting, and then produce their [result]; otherwise, we are not getting historical material that is of value in making future decisions. They say that we should learn from the lessons of the past, but you can't learn from the lessons of the past if they leave out a part.

One paper that was given, for example, had very negative remarks about NASA because of the unfortunate experience with the Hubble Telescope when it was first up, and gave his paper at a time when that had been fixed and we were getting marvelous information from Hubble.

JOHNSON: So they weren't up to date at all.

GALLOWAY: Yes. And this moves so fast that it's hard to keep up, but you need to have that in mind when you're coming to a conclusion.

JOHNSON: Well, it is definitely hard to write space history while it happens, and I know the timeliness of it is important. So if you keep all of those things in mind, maybe we won't have as many problems.

When you were fourteen and deciding you were going to learn to be a dressmaker and then later on thinking about being a secretary or learning those skills so that they would, and they did, come in handy in your life—

GALLOWAY: Oh, I tell you, they were very handy yesterday. If I hadn't been able to type, I couldn't have got that fax off to NASA this morning.

JOHNSON: That's right. Well, when you were learning all those skills and then when you were later at Washington University and Swarthmore College, did you have any idea of the path your life would take?

GALLOWAY: No, I didn't.

JOHNSON: It just happened that way?

GALLOWAY: Yes, and I didn't see all these connections until later, you know, when I had time to look back and when I began to be so grateful to some of my teachers and wished that I had been able to tell them that while they were still living, especially my shorthand and typing teacher, Miss Borland. She was a martinet. You know, you couldn't come to school unless you had done your homework, and you had to do each little Gregg shorthand wiggle exactly the same size as in the book, and you had to do it nine times every night for each one. If you typed a page and you made an overstrike or made any mistake at all—and you had nothing on your keys, you know, you were just looking at a chart—you had to do the whole page over.

Well, this came in very handy. We had a meeting in Stockholm,... Sweden [1960]. This was a meeting of the International Astronautical Federation. I took all my notes in shorthand, and the machinery for recording broke down. I didn't know this at the time because I just had a shorthand book. No one had any record of this, and this was when the Russian was giving his speech and the U.S. was anxious to know what it was that he said, and we didn't have that simultaneous translation. I had it all in shorthand in my book, and they were so surprised that I had this. [Laughter] I couldn't believe it. Meanwhile, I was the one that was surprised because all these other people could speak two languages or three, which I thought was more important.

JOHNSON: Your skill, though, at that time was very important since this was the record.

GALLOWAY: Yes, it was very handy.

JOHNSON: Well, did your parents, when you went to college and they—I'm sure they supported your choices and your career choices.

GALLOWAY: [My parents were divorced when I was nine years old.] My mother died when I was—she died very young.

JOHNSON: When you were still a child?

GALLOWAY: [No, but yes before] my father died. However, I don't know whether they should be a part of this [because I chose my major in Political Science when I entered college]. When I got married, my main ambition was to graduate from college. So giving up two years of my scholarship to go to Washington with George was quite a wrench, you know. But we were so much in love, you know, we had to get married.

JOHNSON: When we first [arrived], you were talking about how "they" won't let you retire. They're still calling on you. Maybe you can explain a little bit about what you're doing now.

GALLOWAY: Well, I'm a member of this Space Flight Advisory Committee of NASA, and we're dealing with the International Space Station launching facilities, the Shuttle, in cooperation with our international partners and communications. This particular week NASA asked me to review the fiscal 2002 budget for space exploration and for the operation of the Space Station and the Shuttle. This came in two parts. There was a deadline on it. I got one

part yesterday morning, so I stayed up most of the day and evening and typed it up and faxed it to NASA today.

On Tuesday I met with the [AIAA] committee at the Canadian Space Agency. This is a planning committee for a workshop that's to be held in Seville, Spain, next March. It's under the aegis of the American Institute of Aeronautics and Astronautics and the European Space Agency and the International Academy of Astronautics. The International Institute of Space Law is also invited to that. It's co-sponsored by the Office of Outer Space Affairs of the United Nations that's located in Vienna.

So we decided on the topics, all of which are concerned with problems that are at present and in the future. One of them is on the global positioning system, navigation. One is on air traffic control and satellite control in orbits. We have one on educating the public with regard to space activities. So there will be a small group meeting there, and then they will get out a report. The report will be printed by the American Institute of Aeronautics [and Astronautics]. Then the people who attend will be from many countries. We try to get as many different countries represented as possible.

JOHNSON: So you're still just very busy in the space business.

GALLOWAY: Yes, and I just finished an article for—what was that? I have just had published an article on the future of space law. That was in the Space Law Journal, which is published in Oxford, Mississippi, at the university there [University of Mississippi].

JOHNSON: So you're just keeping pretty much as busy as you were before you retired then.

GALLOWAY: Yes. There's a lot of interest in the future, in the future problems. I had written a piece before on this problem of sovereignty over air space. We don't have any sovereignty in outer space, and that makes quite a problem. So that was given at a conference in—where was that? I don't know. I went to so many conferences.

JOHNSON: You can't keep them all straight.

GALLOWAY: It was in Bermuda last year.

JOHNSON: How could you forget Bermuda? [Laughter]

GALLOWAY: I forgot that I'd been to Bermuda.

JOHNSON: You've traveled so much you can't remember where you've been.

GALLOWAY: Yes, that's right.

JOHNSON: That's wonderful. It'd be hard to [remember] the countries you haven't been to.

JOHNSON: Well, before we end, I was going to ask Rebecca if there was anything else that she had, any other questions.

WRIGHT: I think you've just shared so much invaluable information with us, and we certainly thank you for giving us all your time.

GALLOWAY: Well, I hope it makes some sense.

JOHNSON: It does, and we really appreciate you letting us come back and do this again.

GALLOWAY: I thought that calling attention to these [government publications] would be helpful to someone doing research. See, a committee print is not like a document, see? I mean, it's a document, but it doesn't have a number like a hearing or report on the hearing which goes to all the depository libraries. So you really have to find out if you're interested in some subject, what they have in the way of committee prints, because some of them are very valuable research projects.

Like one time when I was working on military affairs, I came across a real gem on the legal relation of the Marine Corps to the Navy, and that was really interesting to me. Then there was one that one friend of mine did on the role of the Senate in treaty-making. I, of course, was interested in that.

I did a lot of work for the Senate Foreign Relations Committee when they were considering the '67 treaty. It's interesting that Senator [Albert] Gore [Sr.], that is, the father of the Vice President, brought up some of these really important questions when that committee was considering this treaty, the extent to which the United States was committing itself.

WRIGHT: Was your office always in the Library of Congress?

GALLOWAY: Yes.

WRIGHT: Did you get the same office all the time that you were working or did [they] move you over in the office—

GALLOWAY: No, I started out in the Main Building, and as it grew and we got more and more employees, we were finally moved to the second floor, which is a perfectly beautiful room with windows from the floor to the ceiling, which is now used for exhibits. Then I was moved to the Annex Building, and the Annex Building [had] offices at the top for the [senior] staff. I finally got an office with a double window, which I enjoyed. I could see the dome of the Library and the dome of the Capitol.

WRIGHT: When you were finished with your report and you met with the Senators or even during the time that you were meeting with them, were you going over to their offices or were you having group meetings in the Library of Congress? Where were those discussions taking place?

GALLOWAY: Well, it was either in their office or in the committee offices. Mostly it was in the committee rooms. See, each committee would have an office with a staff director and would have a room for meeting, like the hearing room. It's usually connected with a hearing room, at least the ones I worked with. The Senate Armed Services and the Space Committee both had

hearing rooms. Then some of them had offices in the Capitol, but all of the meetings were held over there, not in the Library.

The Library, the Congressional Research Services, has what you might call seminars for new members of Congress. The new members who come in January will be able to visit and see what all the services are that are offered and will be given briefings on their subjects, whatever the subjects are. This time it would probably [be] education, Social Security, and subjects like that.

WRIGHT: You mentioned earlier about gathering information to write and do research on space, or space law, and space materials. So many people now will go quickly to the Internet to gather information. But, of course, when you started and as you worked through your career, you didn't have that quick accessibility. Could you share with us some of the sources and how you got your information? How were you able to get the publications that you needed and had all those reference materials?

GALLOWAY: Well, we had bibliographers who made three-by-five cards on all the subjects that you ordered, and we had information on all the books that were received in our field. Then we could buy books that we needed for our work. Some of them are just documentary sources, so you find them in the regular library. So we didn't have difficulty getting material.

For example, when I did the study on guided missiles in foreign countries, that material, some of it, was in foreign languages. Did I tell you this already?

WRIGHT: Some, I believe.

GALLOWAY: Yes, I think I covered that. Yes, I had the people who knew the languages just sit there while I took [their oral translations] in shorthand. They read it in English so that I could get that. I got some very valuable material that had been published in Australia in ... Woomera. I had to use all public sources because we couldn't publish anything that was restricted, you know, or secret. We had to get a handle on this problem so it could be discussed in hearings, in open hearings, without classified material. So that was the way that I did it. You know, I read the Congressional Record every day, and I kept clippings.

When I first started out in the project that was financed by the Office of Strategic Services on the post-war abstracts, I had clippings every day from all the newspapers. You know, I would tell them that I needed clippings, what I need it for. One of the things that I had that I thought I didn't need at all—well, a lot of clippings of Japan closing its legations in various cities in the U.S., this was before Pearl Harbor. After Pearl Harbor happened, I went back and looked at those clippings, and I thought, oh, if I had been able to interpret that, that would have been a warning to me of something happening. That was a really good education, because after that I could be a little more sharp in looking at things, you know, deriving some information from them. Then you could have interviews with people, other people in the government that you wanted to ask questions for [information].

JOHNSON: Do you think the process is very much different now because of the Internet?

GALLOWAY: I think it's different for the quick questions that you need to answer, you know. Members might call in and have a constituent—they have a lot of constituent mail—and

somebody writes a letter and asks his member how long it takes a robin to hatch its egg or something like that. I don't know if you can find that on the Internet.

JOHNSON: You can find anything on the Internet. I'm sure you can find that.

GALLOWAY: So if you were in a congressman's office, you could look that up on the Internet and not call the Congressional Research Service. I don't know to what extent that would develop.

JOHNSON: You mentioned earlier about making sure it's not second-hand information and that sort of thing, I think with the Internet it's a little harder to make sure you have real information, instead of somebody else's interpretation.

GALLOWAY: And would you always know whether it was up to date? That bothers me, people coming to conclusions. Then it always bothers me when people do research on problems and offer solutions and make no attempt to estimate the probable consequences. I mean, in any walk of life, whatever you're [doing], if you make a decision, it has consequences, some of which can be undesirable. So you should, it seems to me, look—that's one way of looking ahead.

JOHNSON: Right. And be aware of the consequences that every action has.

GALLOWAY: Yes.

WRIGHT: You also mentioned the swiftness of the legislative branch during the time of Sputnik. Were you also expected to be very swift at turning papers and publications back around for whatever topic that they gave you to research?

GALLOWAY: Yes, you usually had deadlines. I was set up to meet deadlines. That's how I was able to do this work yesterday and get it in to NASA this morning.

JOHNSON: To do something like these committee reports, how long would something like that take?

GALLOWAY: Oh, I don't know. I couldn't estimate how long it was because it's just been so long since I did these. But I could get them out quicker than some of the other people because I could type, and we never had enough typists.

JOHNSON: So you didn't have to depend on someone else—

GALLOWAY: I didn't have to depend on the typist if I had something I had to get out right away. I just had to be sure that they didn't send out my typing and not have a copy...

WRIGHT: Did you have to use carbon paper back then as well?

GALLOWAY: Yes, I used carbon. When the first post-war abstracts were on a mimeograph machine that had a round cylinder with ink. And it went around and around.

JOHNSON: It was a mess.

GALLOWAY: Yes, that was a real mess. Then I always wanted to have my big, main reports indexed, the ones that are printed by the Senate. I have one on "International Organization and Cooperation in Outer Space," and it has an index that is really suited for research. Very fine, everything is worked out really fine. So if you look under United Nations, you see everything in the page and everything, you can tell exactly when Eisenhower wrote [Nikolai A.] Bulganin [Soviet Premier] in Russia and so forth. So I had to teach someone how to do this, because usually they printed them without any index. So this girl I taught how to do it, and she was really excellent. I was just delighted with the whole thing, and I said, "This is absolutely wonderful. We have a subject under every letter of the alphabet except Q," and she thought that I was criticizing her and she started to cry. She didn't know that I was, you know—

JOHNSON: You were happy.

GALLOWAY: —was humorous, you know, and then I was upset because she was crying and I said, "Oh, I know how we can fix that." We had the International Year of the Quiet Sun. We do research on that. I said, "We'll put 'Q, Quiet [Sun], International [Year] of.'" Oh, she brightened up and smiled, and everything was solved. The crisis, we no longer had a crisis.

WRIGHT: Gee, if all those problems could be solved that easily.

GALLOWAY: Yes.

JOHNSON: Is there anything else that you have?

WRIGHT: I don't think so.

JOHNSON: Well, I really appreciate you letting us come into your home.

GALLOWAY: Well, I enjoyed it. I really did.

[End of interview]