Integrating Women into the Astronaut Corps

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Introduction

It was a hot Sunday morning in July, a typical summer morning in Houston, Texas. It was the kind of morning best spent relaxing and keeping cool, particularly if one were nine months pregnant. But today she was up on a stepladder, reaching for items on the top shelf of the kitchen cabinet. After all, she and her husband were moving into their new home soon and they still needed to pack up their household goods. She intended to work for only a few hours because the hospital was expecting the couple for a visit to the maternity and delivery wards that afternoon at one o'clock. But around 10:00, as she worked, a rising feeling of discomfort overcame her. The packing would have to wait.

Even though this was her first child, she knew relatively quickly that she was in labor. As a medical doctor, she certainly knew what to look for when identifying contractions, but the growing regularity and consistency of the pains confirmed that her baby was coming. Her husband, a military pilot, had gone to the airport that morning to get some work done. He knew about the hospital visit that afternoon and was bound to be home in time to make their appointment. With her husband half an hour away and relatively out of contact, she could do little more than wait and time the contractions.

When her husband returned home, late of all days as she recalls, he found his wife lying on the floor with a stopwatch in her hand. He said, “Oh, good. We’re not going to be late to our hospital visit!” By then the contractions were about five minutes apart. She knew it was still early labor, but now was as good a time as any to head to the hospital.

She labored all day and into the night with her first child. In the early morning hours, however, the baby started to show signs of distress. Doctors finally delivered the baby by emergency Cesarean section around four in the morning. Infant Paul, who was not yet breathing, was rushed out of the room without his mother having a chance to see him. But she knew that the
pediatrician needed to take care of him right away. Before the baby was even eight hours old, he was flown by helicopter to Hermann Children's Hospital's neonatal intensive care unit. After four days of recovery on her own, Paul's mother joined him at Hermann until he was ready to go home.

Granted, modern medical practices and technology had aided significantly in the birth of this particular child. But generally, his mother had done the same thing that billions of women had done before her. However, people did not see this as just any standard birth. This was not a typical baby and his parents, Rhea Seddon and Robert "Hoot" Gibson, were not typical parents. Paul Seddon Gibson, born on July 26, 1982, was the world's first "astrotot"—the first baby ever born to two astronauts. Rhea Seddon also became the first astronaut ever to give birth.2

When the National Aeronautics and Space Administration selected the first women as astronaut candidates in 1978, people working at NASA probably thought they were fairly well prepared to have women in the astronaut corps. Early in the 1970s, NASA officials from the administrator down had emphasized that women would be a part of the astronaut corps, specifically beginning with the Space Shuttle program. NASA selected its first class of women astronauts as part of Group VIII, the eighth class of astronauts chosen since NASA's inception in 1958. They were Anna Fisher, Shannon Lucid, Judith Resnik, Sally Ride, Margaret Rhea Seddon, and Kathryn Sullivan. Although NASA hoped for a smooth process of integrating women and ethnic minority Americans into the astronaut corps, good intentions cannot always ease the stresses inherent in change. One issue that NASA engineers confronted was the challenge of designing equipment that both male and female astronauts could use. But a more important barrier to the success of integrating women as astronauts was that all employees at NASA, including the women astronauts, had to deal with the tensions inherent in the cultural biases against women in the workplace and against women challenging the iconographic image of the astronaut. This book follows both NASA's steps and those taken by the first women astronauts as American spaceflight was desegregated by sex. Documenting these events leads to a broader understanding of the difficulties that arise when a workplace is sexually integrated, even when the organization approaches the situation with a positive outlook and strong motivation, as NASA did.

The women who have served as astronauts represent a highly elite group of workers. NASA selects only an extremely small number of astronauts to be
members of any one class, particularly relative to the number of applicants. In that sense, becoming an astronaut compares to such fields as entertainment and professional sports in terms of competitiveness. For that reason, using the astronaut corps as a case study for women’s labor history appears problematic. But studying the sexual integration of America’s astronaut corps provides a new perspective on the relationships between women and technology, management, and culture. Although becoming an astronaut is an elite career choice, the public nature of an astronaut’s job duties gives historians of gender and technology and of women’s professional history some insight into the struggles women commonly experienced when sexually integrating a workforce.

Past scholarship on women’s labor history paid attention to how women’s work moved beyond the home and into public spaces, and it focused on the segregation of women and men in the workplace, most often considering examples during World War II. These historians ask how sexually segregated working environments are constructed and maintained. When institutions and organizations like NASA attempted to deconstruct that segregation, however, the cultural standards that first influenced the formation of gender hierarchy in the workplace did not simply disappear. In the narrow view, this book examines how an organization and individual women labored to create an integrated, equal working environment for both sexes in spite of cultural ideas and traditions. It focuses its attention on uncovering how cultural impressions of both the American space program and women’s roles in society and the workplace influenced the process of integrating women into the astronaut corps. In the wider view, it will contribute to the next evolutionary stage of women’s labor history and the history of gender and technology by examining how cultural ideas about the sexes and gender, along with technological and political concerns, complicate the inclusion of women astronauts at NASA. This project moves the study of women in the workforce beyond asking “Where are the women?” and “How did women get their feet in the door?” It uncovers the complexities of inequality in the workplace and why they exist.

Historically, workplace integration often appears as something dictated by circumstance or by law as in World War II and the Civil Rights Act of 1964. But often when an outside force is responsible for the entrance of underrepresented workers, industries resist and the workers are left struggling to carve out their own places. In the case of the NASA astronaut corps, federal
dictates came into play when Congress passed the Equal Employment Opportunity Act of 1972. NASA actually had already engaged in hiring and encouraging female and ethnic minority employment before federal law demanded such actions. In any case, one analytical line in this story focuses on how NASA as employer confronted the idea of sex (the biological differences between male and female bodies) and gender (the cultural expectations of behavior for those sexes) in the workplace.

The experiences of the six women selected as astronaut candidates in 1978 make up a second analytical perspective. However, the fact that they are women adds a third dimension of analysis—an engineering analysis of hardware. While engineers must take human factors into consideration when designing a workplace—for example, an assembly line needs to be accessible to workers of varying heights and arm lengths—workplace designers focus most of their attention on ways to improve efficiency. But for a spacecraft, designing both mission-oriented and survival-oriented hardware and interfaces to fit astronauts of different sizes, sexes, and physical characteristics becomes a more complex challenge. The third analytical piece to this study examines how the integration of women into the astronaut corps affected Shuttle designs and procedures as well as ground-based operations.

The book's fourth and final area of analysis, the role that cultural ideals have played in the expansion of American spaceflight to include women, actually serves as an overarching theme, connecting the other three discussions. What the public believed was proper for men and women in a working relationship influenced how NASA, the women of Group VIII, and design engineers adapted to the changing astronaut corps. Much of America's space history, particularly with respect to women, is a reflection of public ideas about space travel and exploration. Historically, the issues that disturb the sexual integration of any workplace come down to questions of cultural propriety. Is it right to have men and women working next to each other? Does the act of hiring women undermine men's social responsibility to provide for their families? How do working women challenge the socially constructed male role as breadwinner? Does the work of women outside the home keep women from their caregiving duties? Does the work strain their moral character in a way that makes them unfit as mothers? Although such conservative questions diminished considerably thanks in part to the second women's movement, which began in 1963 with the publication of Betty Friedan's *The Feminine Mystique* and with the black civil rights movement,
the public still expressed a fair amount of concern over the sexual propriety of men and women flying together in space. The cultural issues surrounding women in space must be addressed if the sexual integration of the astronaut corps is to serve as a case study of women's labor history.

This study strives to uncover not just the biographies and experiences of the first American women astronauts. At some level, others have already told those stories. But those works all neglect to explore NASA's integration process. Instead, they discuss the history of NASA's exclusion of women from the astronaut corps in the 1960s or provide an encyclopedic treatment of women astronauts since 1978. This body of work focuses on the individual stories of the women. But those narratives lack an analytical treatment of their experiences in the context of technological and logistical challenges of integrating women into the astronaut corps, cultural ideas about women astronauts, and the larger historical narrative about women in the workplace, particularly a white-collar, technologically elite workplace. This book intends to address the technological and logistical history as yet unexplored and fill those analytical holes.

But this work does more than just satisfy a need in the literature in space history and the history of technology. It makes a larger contribution to women's history and labor history as well. While this story illustrates the integration process within NASA, it also explores how Americans viewed the idea of women as astronauts. The women who applied to the astronaut corps in the 1960s and were rejected, as well as the women who were selected in 1978, challenged American postwar ideals about women in the workplace. Yes, women had always worked. In that sense, the women astronauts and astronaut hopefuls were not breaking down barriers. What historians have studied most carefully is the labor history of working-class women. But being an astronaut is not a working-class job; it is highly skilled, white-collar technological work. The women who applied to become astronauts came from middle-class backgrounds and had at least some college education. This story addresses the history of women in the professions.

Because the women astronauts came from middle-class backgrounds, their stories differ from those of working-class women. Further, because they were middle class and trying to enter traditionally male jobs, they were violating two postwar middle-class mantras about women and work. First, middle-class Americans, men and women alike, viewed women not working for wages outside the home as a sign of status. If a woman worked outside the
home, it suggested that she was not yet married or that she and her husband had not yet started a family. The generation that shaped the postwar ideas about women's work grew up during the Great Depression. That economic crisis influenced their ideas about women's work outside the home. It was understandable if a woman needed to take on paid work to help make ends meet during the Depression. But it remained the husband and father's responsibility to provide for his family. For that reason, postwar Americans viewed marriage and homemaking for women as a sign of prosperity. As historian Elaine Tyler May explains, a married woman working outside the home and for wages following World War II—particularly beyond the birth of her first child—suggested that her husband was a failure. Women's employment further undermined the idea that work outside the home was "men's work," the second postwar middle-class mantra.

The women who tried to become astronauts in the 1960s received much more criticism than the women of Group VIII. But neither was it a foregone conclusion across the United States in 1978 that America's first women astronauts would succeed, nor that they belonged in the astronaut corps. The 1960s case shines a light on the middle-class American ideals about women and work. But despite changing legislation in the 1970s about equal employment for women, still the first women astronauts met with scrutiny, criticism, and discriminatory remarks from people within NASA and the American public.

America's women astronauts participated in a professionalized, scientific, and technological workforce. At some level, America's Rosie the Riveter during World War II showed Americans that women could perform in technological fields (albeit blue-collar work). But employers identified the jobs filled by women to meet the national demand during World War II as temporary, vital work, thereby negating their contributions as workers. Even though women did the same jobs during the war that men typically performed in peacetime, circumstances allowed employers to differentiate Rosie the Riveter's performance and abilities from their male counterparts. Michael Katz, Mark Stern, and Jamie Fader cite that differentiation of work for men and women as the key to the "paradox of inequality," explained as "the coexistence of structural inequality with individual and group mobility."

This paradox of inequality explains why women continue to suffer pay inequality, find themselves excluded from job opportunities, and hit the glass ceiling in spite of laws protecting equality. Even though women showed they
could perform technological work during World War II, their experiences did little to redefine technological work as both male and female work.

Where the paradox of inequality becomes so important to women in the professions is in access to college educations in traditionally male areas. The paradox hampered women astronaut hopefuls further by restricting their access to graduate school and the pipeline careers that NASA's selection criteria demanded from their astronaut candidates. The women astronauts needed to prove their abilities in the classroom, by earning graduate degrees, and then again through their work as astronauts as a necessary step to redefining the image of "astronaut."

As a history of women in the professions, this work focuses on a smaller but growing proportion of women at work. What becomes apparent in a study such as this one is that the struggles in the history of women in the professions mirror those found in the history of women in the general workforce. But cultural ideas about class, and consequently race and marital status, complicate women's opportunities and perpetuate the paradox of inequality.

The history of American women as astronauts is relatively short. But it is a history that offers more than just a collection of fascinating stories. Embedded within the anecdotes about "astrotots" and space toilets are clues about why the sexual integration of a workforce, particularly a highly scientific and technical one, was so difficult. Less than a century ago, society considered it improper for a lady to show her ankle. With the birth of the Shuttle era, men and women were sharing intimate spaces and their personal lives. Further, the women astronauts were invading a traditionally male activity. By the 1970s, people had grown more comfortable with the idea that women could work outside the home. But integration still tended to clash with deep-seated beliefs and conventions about women's roles—and men's roles—in society. More than anything, this book is about how ineffectual Western society has been at coming to grips with sex, including intercourse, physical differences, sexual and gender identity, and sexual orientation. At a time when women were making positive strides in many different career fields, the politics and logistics of sexually integrating the astronaut corps highlight how difficult it is to change one's way of thinking. One consequence of those difficulties is that until our culture can adopt a "get over it" attitude about sex, we cannot become a true space-faring society.