

Finding Aid to The HistoryMakers® Video Oral History with Edward Tunstel

Overview of the Collection

Repository:	The HistoryMakers®1900 S. Michigan Avenue Chicago, Illinois 60616 info@thehistorymakers.com www.thehistorymakers.com
Creator:	Tunstel, Edward W.
Title:	The HistoryMakers® Video Oral History Interview with Edward Tunstel,
Dates:	September 15, 2012
Bulk Dates:	2012
Physical Description:	8 uncompressed MOV digital video files (3:57:52).
Abstract:	Electrical engineer Edward Tunstel (1963 -) was a skilled engineer who worked with the Jet Propulsion League of the National Aeronautics and Space Administration on such projects as the Mars Exploration Rovers. Tunstel was interviewed by The HistoryMakers® on September 15, 2012, in Laurel, Maryland. This collection is comprised of the original video footage of the interview.
Identification:	A2012_145
Language:	The interview and records are in English.

Biographical Note by The HistoryMakers®

Robotics engineer and technology developer Edward Tunstel, Jr. was born on November 29, 1963 in Harlem, New York to Agnes Tunstel and Edward Tunstel, Sr. As a child, Tunstel was very interested in art, which led him to pursue an initial interest in architecture. However, after he attended a seminar held by the New York Academy of Sciences the summer of his junior year in high school, he decided to shift his focus to engineering instead due to his curiosity in learning how things worked. He graduated from Springfield Gardens High School in Queens, New York in 1981 and received his B.S. and M.E. degrees in mechanical engineering from Howard University in 1986 and 1989, respectively.

Upon his graduation from Howard University, the Jet Propulsion Laboratory (JPL) of the National Aeronautics and Space Administration (NASA) recruited Tunstel. In 1992, he was granted the JPL Minority Fellowship to further his education at the University of New Mexico, where he received his Ph.D. degree in electrical engineering in 1996. Tunstel has continued to work with the JPL following the completion of his Ph.D. program, and he has served in various roles. One of his larger projects was to serve as a Flight Systems Engineer for autonomous surface navigation of the NASA Mars Exploration Rovers. He has also served as the mobility and robotic arm lead on the Spacecraft/Rover Engineering Team for the Spirit and Opportunity rovers' surface operations on Mars. Since 1997, he worked as the Space Robotics and Autonomous Control Lead at the Johns Hopkins University Applied Physics Laboratory, where he continued to solve robotics problems for NASA. His research interests include: autonomous control systems, cooperative robotics, and mobile robot navigation.

Throughout his career, Tunstel has written a number of articles on the subject of robotics and intelligent control. He has also edited and contributed to several books related to robotics and engineering. Tunstel is a member of several professional organizations, including the Institute of Electrical and Electronics Engineers (IEEE), the National Society of Black Engineers (NSBE), and the American Institute of Aeronautics and Astronautics. He has also been honored for his contributions to the science of robotics and space exploration. Tunstel is married to Jan

Harwell Tunstel.

Scope and Content

This life oral history interview with Edward Tunstel was conducted by Larry Crowe on September 15, 2012, in Laurel, Maryland, and was recorded on 8 uncompressed MOV digital video files. Electrical engineer Edward Tunstel (1963 -) was a skilled engineer who worked with the Jet Propulsion League of the National Aeronautics and Space Administration on such projects as the Mars Exploration Rovers.

Restrictions

Restrictions on Access

Restrictions may be applied on a case-by-case basis at the discretion of The HistoryMakers®.

Restrictions on Use

All use of materials and use credits must be pre-approved by The HistoryMakers®. Appropriate credit must be given. Copyright is held by The HistoryMakers®.

Related Material

Information about the administrative functions involved in scheduling, researching, and producing the interview, as well as correspondence with the interview subject is stored electronically both on The HistoryMakers® server and in two databases maintained by The HistoryMakers®, though this information is not included in this finding aid.

Controlled Access Terms

This interview collection is indexed under the following controlled access subject terms.

Persons:

Tunstel, Edward W.

Crowe, Larry (Interviewer)

Hickey, Matthew (Videographer)

Subjects:

African Americans--Interviews

Tunstel, Edward W.--Interviews

African American electrical engineers--Interviews.

Organizations:

HistoryMakers® (Video oral history collection)

The HistoryMakers® African American Video Oral History Collection

Occupations:

Electrical Engineer

HistoryMakers® Category:

ScienceMakers

Administrative Information

Custodial History

Interview footage was recorded by The HistoryMakers®. All rights to the interview have been transferred to The HistoryMakers® by the interview subject through a signed interview release form. Signed interview release forms have been deposited with Jenner & Block, LLP, Chicago.

Preferred Citation

The HistoryMakers® Video Oral History Interview with Edward Tunstel, September 15, 2012. The HistoryMakers® African American Video Oral History Collection, 1900 S. Michigan Avenue, Chicago, Illinois.

Processing Information

This interview collection was processed and encoded on 5/30/2023 by The HistoryMakers® staff. The finding aid was created adhering to the following standards: DACS, AACR2, and the Oral History Cataloging Manual (Matters 1995).

Other Finding Aid

A Microsoft Access contact database and a FileMaker Pro tracking database, both maintained by The HistoryMakers®, keep track of the administrative functions involved in scheduling, researching, and producing the interview.

Detailed Description of the Collection

Series I: Original Interview Footage

Video Oral History Interview with Edward Tunstel, Section A2012_145_001_001, TRT: 1:30:02 ?
Edward Tunstel was born on November 29, 1963 in New York City to Agnes Solomon Tunstel and Edward Tunstel, Sr. His maternal grandparents, Elizabeth

Williams Solomon and Ernest Solomon, were farm owners in Sandy Creek Township, North Carolina, where they raised Tunstel's mother and her nine siblings. After graduating from high school, she moved to New York City, where she worked in various grocery stores. Tunstel's paternal grandfather, Benjamin Tunstel, a man of West Indian descent, met and married Lela McKellen Tunstel, in Memphis, Tennessee, where his father was born in 1935. As a young boy, his family moved to Harlem in New York City. Tunstel's father obtained a high school education, and worked several odd jobs before becoming a butcher in the supermarket industry. Tunstel's parents met while working at a grocery store, and married in the mid-1950s. Tunstel lived in Harlem until he was ten years old, at which point his family moved to Queens, New York. Tunstel also talks about his siblings.

African American families--New York (State)--New York.

African American mothers--North Carolina.

African American fathers--Tennessee.

Harlem (New York, N.Y.).

Childhood--New York (State)--New York--Harlem.

Video Oral History Interview with Edward Tunstel, Section A2012_145_001_002, TRT: 2:28:59 ?

Edward Tunstel spent his early childhood in the Delano Village apartment complex in the Harlem neighborhood of New York City. While Tunstel felt safe in his community, he was aware of the gangs and dilapidated buildings in the vicinity. In Harlem, he attended St. Mark the Evangelist School, where he enjoyed drawing. He often found inspiration from magazines and newspapers as well as his immediate environment. Through his interest in art, Tunstel developed a fascination with science, architecture and engineering. He also enjoyed watching the television show 'Star Trek' and reading comic books, where he idolized inventor Tony Stark of the Iron Man series. Tunstel began playing basketball in elementary school. After the fourth grade, his family moved to a house in the neighborhood of Jamaica, Queens. He recalls his early knowledge of African American inventors like Elijah McCoy, George Washington Carver and Lewis Howard Latimer.

Childhood--New York (State)--New York--Harlem.

Education--New York (State)--New York.

Drawing.

Comic books and children.

Basketball.

Video Oral History Interview with Edward Tunstel, Section A2012_145_001_003, TRT: 3:29:18 ?

Edward Tunstel and his family moved to Jamaica, Queens in New York City when he was ten years old. During that time, he entered the fifth grade at St. Catherine of Siena School in Queens, which employed a much more diverse faculty than his previous Catholic school. Even though he attended Catholic school, Tunstel's family were members of Merrick Park Baptist Church in Queens. Tunstel continued to pursue his interests in drawing and basketball, and aspired to be a wealthy scientist. In 1977, Tunstel enrolled at Springfield Gardens High School, where the student body was comprised of white and black students. During his junior year, he attended a seminar held at The New York Academy of Sciences, which propelled his interest in engineering. Tunstel describes his favorite elementary school teacher, and his early knowledge of physics, astronauts and space exploration. He also talks about his parents' encouragement in his education, and his decision to apply to Howard University

in Washington, D.C.

Catholic education--New York (State)--New York.

African Americans--New York (State)--New York--Queens.

Baptists.

Mentoring in education.

New York Academy of Sciences.

Howard University.

Video Oral History Interview with Edward Tunstel, Section A2012_145_001_004, TRT: 4:29:36 ?

Edward Tunstel began his undergraduate studies at Howard University in Washington, D.C. in 1981. At this point in the interview, Tunstel describes the legacy of the university's African American faculty and administrators, including Lewis K. Downing and Percy Pierre. He also describes the protests on campus, and recalls frequenting the Moorland-Spingarn Research Center. While Tunstel excelled in high school, he struggled during his first semester, and was placed on academic probation. After evaluating his study habits and his approach to the curriculum, he soon improved his grades. He was mentored by the professors in the engineering department such as Lucius Walker and Emmanuel Glakpe. Upon completing an introductory course in robotics, Tunstel became interested in the field. In 1986, he received his Bachelors of Science degree in mechanical engineering with a concentration in robotics. He continued his graduate studies at Howard University under the mentorship of Professor Naren Vira.

Howard University.

Howard University--History.

Role models.

Mechanical engineering.

Robotics.

Video Oral History Interview with Edward Tunstel, Section A2012_145_001_005, TRT: 5:29:07 ?

Edward Tunstel lived in close proximity to Howard University in Washington, D.C. while pursuing his master's degree there. During that time, he observed the precarious relationship between the students and the residents of the neighboring areas. For his master's thesis, Tunstel utilized computer science to enhance robotics programming. After graduating in 1989, Tunstel was recruited by NASA's Jet Propulsion Laboratory (JPL) in Pasadena, California. There, he worked in the Robotic Intelligence Group, and contributed to their development of NASA's planetary exploration projects like the Robby and Rocky series of rovers, the Mars Pathfinder rover and Field Integrated Design and Operations (FIDO) rover. At this point, he describes the working environment at JPL, which employed thousands of engineers and scientists including Ayanna Howard. In 1992, Tunstel was awarded a JPL Minority Fellowship to pursue his Ph.D. degree at the University of New Mexico, where he studied under Professor Mohammad Jamshidi.

Howard University.

Mechanical engineering.

United States. National Aeronautics and Space Administration.

Jet Propulsion Laboratory (U.S.).

Space vehicles.

Howard, Ayanna.

Jamshidi, Mohammad.

Video Oral History Interview with Edward Tunstel, Section A2012_145_001_006, TRT: 6:30:33 ?

Edward Tunstel pursued his doctoral studies at the University of New Mexico, as a recipient of the JPL Minority Fellowship. Under the guidance of his advisor, Professor Mohammad Jamshidi, Tunstel worked on control systems and fuzzy logic based navigation of mobile robots. He also played an instrumental role in the development of the LOBOT mobile robot. After obtaining his Ph.D. degree in 1996, he returned to the Jet Propulsion Laboratory with his research. At this point in the interview, Tunstel talks about his work with robotic rovers. From 2000 to 2002, he served as the lead system engineer for the Field Integrated Design and Operations (FIDO) rover, and as the flight systems engineer for the autonomous navigation system on the Mars Exploration Rover (MER) Surface Mission Phase team from 2001 to 2003. He also talks about the launch of Mars Exploration Rovers Spirit and Opportunity in 2003, and the Mars expedition mission of 2012, which deployed the Curiosity rover.

University of New Mexico.

Jamshidi, Mohammad.

Robotics.

Space vehicles.

Space missions.

Mars (Planet).

Video Oral History Interview with Edward Tunstel, Section A2012_145_001_007, TRT: 7:29:57 ?

Edward Tunstel spent eighteen years of his career working at NASA's Jet Propulsion Laboratory (JPL) in Pasadena, California. There, he made considerable contributions to the development of robotic rovers. During this section of the interview, Tunstel describes the mechanics and processing power of Spirit and Opportunity, and his daily duties in the Mars exploration program. After leaving JPL in 2007, he joined Johns Hopkins University's Applied Physics Laboratory (APL), where he worked in the space department. A longtime member of the Institute of Electrical and Electronics Engineers (IEEE), Tunstel was elevated to IEEE Fellow, the highest grade of membership within the organization. Tunstel goes on to talk about his involvement in the IEEE Systems Man and Cybernetics Society, a branch of the larger organization. At this point, he highlights the developments in cybernetics and robotics, and the United States' place in the field in relation to the rest of the world.

United States. National Aeronautics and Space Administration.

Jet Propulsion Laboratory (U.S.).

Space vehicles.

Mars (Planet).

Johns Hopkins University.

Institute of Electrical and Electronics Engineers.

Video Oral History Interview with Edward Tunstel, Section A2012_145_001_008, TRT: 8:30:20 ?

Edward Tunstel worked in the space department of Johns Hopkins University's Applied Physics Laboratory (APL). In his personal time, he worked on developing electronics and robot systems for his home. Tunstel shares his views on the advancements of robots, and their potential increased use in the areas of health care and electronic commerce. He also talks about the prospect of better networking capabilities through robotics, the implications of artificial intelligence and the potential consequences of a robot driven economy. Tunstel goes on to describe his hopes and concerns for the African American community, as well as his reflections upon his life, legacy and how he would

like to be remembered. To conclude the interview, Tunstel narrates his photographs.

Robotics.

Robotics--Forecasting.

Artificial intelligence.

African American families.

Reminiscing.

Photographs.