Overview of the Collection

Repository: The HistoryMakers® 1900 S. Michigan Avenue Chicago, Illinois 60616
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Creator: Tunstel, Edward

Title: The HistoryMakers® Video Oral History Interview with Edward Tunstel,

Dates: September 15, 2012

Bulk Dates: 2012

Physical Description: 8 Uncompressed MOV video files (3:57:52).

Abstract: Electrical engineer Edward Tunstel (1963 - ) is a skilled engineer who has 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 video files. Electrical engineer Edward Tunstel (1963 - ) is a skilled engineer who has 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:
Subjects:

- African American electrical engineers--Interviews.
- African Americans--Interviews
- Tunstel, Edward W.--Interviews

Organizations:

- HistoryMakers® (Video oral history collection)
- The HistoryMakers® African American Video Oral History Collection

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


Processing Information

This interview collection was processed and encoded on 8/7/2014 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, September 15, 2012

Video Oral History Interview with Edward Tunstel, Section A2012_145_001_001, TRT: 1:30:02 2012/09/15

Edward Tunstel talks about his family background. His mother, Agnes Louvenia Solomon, was born in November of 1929 in Henderson, North Carolina. She and her nine siblings were raised on a farm in the Sandy Creek Township. After graduating from high school, she moved to New York and eventually worked in grocery stores. Tunstel’s father’s family have links to the West Indies. His father, Edward Weldon Tunstel, Sr., was born in May of 1935 in Memphis, Tennessee. As a young boy, his family moved Harlem, New York, where he grew up. After graduating from high school, he worked several odd jobs before joining the supermarket business and working as a butcher. Tunstel’s parents met while working and married in the mid 1950’s. Tunstel talks about his siblings, his earliest childhood memory and describes his childhood neighborhood.

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.


Edward Tunstel was born and raised in Harlem, New York through the early part of his childhood. He describes his memories of growing up in Harlem and his childhood neighborhood. He attended P.S. 100 for kindergarten and St. Mark the Evangelist School up to the fourth grade. Tunstel enjoyed drawing and often found inspiration from his immediate environment, magazines, newspapers, and machines. While he never undertook formal training in art, he employed techniques, such as charcoal sketching, by improvising with his supplies. His interest in art also influenced in fascination with architecture and engineering. Tunstel also liked science fiction, comics, and playing basketball, which taught him valuable life lessons. After the fourth grade, his family moved to Jamaica, Queens.
Edward Tunstel moved to Jamaica, Queens in New York just before he entered the fifth grade. He attended St. Catherine of Siena, which employed a much more diverse faculty than his previous Catholic school. Although he attended Catholic school, Tunstel’s family were Baptist and were members of the Merrick Park Baptist Church. He maintained his hobbies in drawing and basketball. Although he did not have a clear career goal at this time, he aspired to be a wealthy scientist. Tunstel talks about his favorite elementary school teacher and his parents’ encouragement in his education. In 1977, Tunstel began high school at Springfield Gardens High School. During his junior year, he attended a seminar held at the New York Academy of Sciences, which propelled his interest in engineering. Tunstel talks about his experience in high school and his decision to apply to Howard University.

In 1981, Edward Tunstel graduated from Springfield Gardens High School in Queens, New York, and began his undergraduate studies at Howard University. Tunstel describes his fascination at the long lineage of African American faculty and administrators at Howard University, and reflects upon the importance of being able to witness role models in person. He describes his experience at Howard University, and its repository of resources on African American history and achievements. He also talks about the influence of his professors in the engineering department, particularly HistoryMaker Lucius Walker and Professor Emmanuel Glapke. Tunstel earned his B.S. degree in mechanical engineering with a concentration in robotics from Howard University in 1986. He continued his graduate studies at Howard University, under the mentorship of Professor Naren Vira. Tunstel describes his introduction to robotics at Howard University, and his interest and experience in the field, while he was an undergraduate student there.
In 1989, Edward Tunstel earned his master’s degree in mechanical engineering with a concentration in robotics from Howard University. He describes his master’s thesis the social setting in Washington, D.C. during his time at Howard University in the 1980s, and the relationship between the students and the neighborhood surrounding the university. The same year, Tunstel was recruited by NASA’s Jet Propulsion Laboratory, where he worked in the Robotic Intelligence Group, supporting research and development activities on NASA’s planetary rover projects. He talks about his early experience at JPL, the work environment there, his colleague, HistoryMaker Ayanna Howard, NASA’s robotic spacecraft, and his work with the Robby and Rocky series of rovers as well as the Mars Pathfinder rover. In 1992, Tunstel was awarded a JPL Minority Fellowship to pursue his Ph.D. degree at the University of New Mexico, under the guidance of Professor Mohammad Jamshidi.

From 1992 to 1996, Edward Tunstel pursued his doctoral studies at the University of New Mexico, as a recipient of a 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 led the development of the LOBOT, Jr. mobile robot, which was created in the Intelligent Distributed Multi-Agent Robotic Systems Laboratory at the University of New Mexico. 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 from 2001 to 2003, as the flight systems engineer for the Mars Exploration Rover (MER) Surface Mission Phase Team on autonomous navigation. He discusses the MER surface mission of 2003, and the Mars expedition mission of 2012, involving the rover “Curiosity”.

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 2012/09/15

From 1989 to 2007, Edward Tunstel worked at NASA’s Jet Propulsion Laboratory (JPL), where he spent a significant part of his career working on robotic rovers. During this section of the interview, Tunstel describes robotic rovers and the Mars exploration program in detail. After leaving JPL in 2007, he joined Johns Hopkins University’s Applied Physics Laboratory (APL), where he worked in the space department. He describes his experience there. Tunstel also talks about the Institute of Electrical and Electronics Engineers (IEEE), his involvement with the organization, the highlights of development 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 2012/09/15

Edward Tunstel enjoys tinkering with electronics and robot systems during his personal time. He would eventually like to develop a reconfigurable robot that can promptly accommodate his needs. Tunstel forecasts robots increasingly contributing to advancements in health care. He talks about the prospect of better networking capabilities, the implications of artificial intelligence, and the potential consequences of a robot-economy. Tunstel shares his hopes and concerns for the African American community,
reflects on his life choices and legacy, talks about his family and talks about how he would like to be remembered. Finally, Tunstel describes his photos. Robotics.
Robotics--Forecasting.

Artificial intelligence.
African American families.
Reminiscing.
Photographs.