ASTRONAUT BIOGRAPHY

National Aeronautics and Space Administration

Lyndon B. Johnson Space Center
Houston, Texas 77058

March 2020

Richard M. Linnehan

(BS, DVM, MPA) NASA Astronaut

Summary:
Dr. Richard M. Linnehan was selected as an astronaut in 1992. The Massachusetts native has a Bachelor of Science from the University of New Hampshire, a Doctorate of Veterinary Medicine from The Ohio State University and a Master of Public Administration from the Harvard Kennedy School of Government. He flew aboard STS-78, STS-90, STS-109 and STS-123. STS-78 delivered the Life Sciences and Microgravity Spacelab combining microgravity studies and life sciences. STS-90 was a Spacelab mission where 26 experiments were performed. STS-109 was the fourth Hubble Space Telescope servicing mission. STS-123 delivered the Japanese Experiment Logistics Module - Pressurized Section. Dr. Linnehan currently splits his time between the Astronaut Office Exploration and Integration branches and the NASA Institutional Review Board (IRB) and JSC Institutional Animal Care and Use Committee (IACUC).

Personal Data:
Born September 19, 1957, in Lowell, Massachusetts. Raised by his paternal grandparents, Henry and Mae Linnehan. He enjoys various outdoor activities, sports, reading and natural history. His younger siblings reside in New England.

Education:
Attended Alvirne High School, Hudson, New Hampshire from 1971 through 1974. Graduated from Pelham High School, Pelham, New Hampshire, in 1975. Attended the University of New Hampshire in Durham, New Hampshire graduating in 1980 with a Bachelor of Science Degree in Animal Sciences with a minor in Microbiology. Received a Doctorate of Veterinary Medicine (DVM) from The Ohio State University College of Veterinary Medicine in 1985. In 2009 received the Master of Public Administration (MPA) from The Kennedy School of Government at Harvard University.

Experience:
After graduating from The Ohio State University College of Veterinary Medicine in June 1985, Dr. Linnehan entered private veterinary practice and was later accepted to a 2-year joint internship in Zoo Animal Medicine and Comparative Pathology at the Baltimore Zoo and The Johns Hopkins University. After completing his internship, Dr. Linnehan was commissioned as a Captain in the U.S. Army Veterinary Corps and reported for duty in early 1989 at the Naval Ocean Systems Center, San Diego, California, as chief clinical veterinarian for the U.S. Navy's Marine Mammal Program. During his assignment at the Naval Ocean Systems Center, Dr. Linnehan initiated and supervised research in the areas of cetacean and pinniped anesthesia, orthopedics, drug pharmacokinetics and reproduction in direct support of U.S. Navy mobile marine mammal systems stationed in California, Florida, and Hawaii.

NASA Experience:
Selected by NASA in March 1992, Dr. Linnehan reported to the Johnson Space Center in August 1992 where he completed one year of Astronaut Candidate training qualifying him for space shuttle flight assignments as a Mission Specialist. Dr. Linnehan was initially assigned to flight software verification in the Shuttle Avionics Integration Laboratory (SAIL). He was subsequently assigned to the Astronaut Office Mission Development Branch, working on payload

development and mission development flight support for future space shuttle missions. He first flew as a Mission Specialist in 1996 on STS-78, the Life Sciences and Microgravity Spacelab (LMS) mission. In 1998, he served as the payload commander on the STS-90 Neurolab mission. In 2002, he was a member of the four-man spacewalk (EVA) crew on STS-109, the fourth servicing mission to the Hubble Space Telescope (HST). In 2008, he was lead EVA crewmember on the STS-123/1JA mission to the International Space Station. A veteran of four space flights, Dr. Linnehan has logged more than 58 days in space, including six spacewalks - totaling 42 hours and 11 minutes. In August 2009, Linnehan returned to Houston, TX and the Astronaut Office after completing a Master's Degree in Public Administration at the Harvard Kennedy School of Government in Boston, MA and was subsequently assigned as JSC representative to the Texas A&M University's Office of Strategic Initiatives, College Station, TX on a NASA Interagency Personnel Agreement (IPA). Dr. Linnehan's IPA activities targeted collaborative, advanced biomedical research projects as well as K-12 Science, Technology, Engineering and Mathematics (STEM) educational initiatives in direct support of NASA/JSC and the Texas A&M University System. Presently, Dr. Linnehan is jointly assigned to both the JSC Astronaut Office Exploration and Integration branches as well as The NASA IRB and IACUC. He continues to work on advanced initiatives in space suit design, EVA training and physiological modeling/research while also directly supporting development of next generation space flight resistive exercise hardware and onorbit exercise methodologies, as well as radiation and nutritional countermeasures protocols, in preparation for future long-duration Orion Class space exploration missions.

Spaceflight Experience:

STS-78/LMS (June 20 to July 7, 1996). The Life Sciences and Microgravity Spacelab mission was flown aboard Space Shuttle Columbia. The 17-day flight included studies sponsored by ten nations and five space agencies, and was the first mission to combine both a full microgravity studies agenda and a comprehensive life sciences payload. STS-78 orbited the Earth 271 times, covered 7 million miles in 405 hours and 48 minutes and was the longest duration Space Shuttle mission to date.

STS-90/Neurolab (April 17 to May 3, 1998). This was Dr. Linnehan's second Spacelab mission. During the 16-day flight the seven-person crew aboard Space Shuttle Columbia served as both experimental subjects and operators for 26 individual life science experiments focusing on the effects of microgravity on the central and peripheral nervous systems. STS-90 orbited the Earth 256 times, and covered 6.3 million miles in 381 hours and 50 minutes. Both the LMS and Neurolab missions served as models for future life sciences studies to be conducted onboard the International Space Station.

STS-109/HST Servicing Mission 3B (March 1 through March 12, 2002). This was the fourth Hubble Space Telescope (HST) servicing mission and Dr. Linnehan's third flight aboard Columbia. The crew of STS-109 successfully upgraded the Hubble Space Telescope's systems over the course of 5 consecutive EVAs, leaving it with a new power control unit, improved solar arrays, the new Advanced Camera for Surveys (ACS), and an experimental refrigeration unit for cooling the dormant Near Infrared Camera and Multi-Object Spectrometer (NICMOS). With his teammate Dr. John Grunsfeld (EV1), Dr. Linnehan (EV2) performed three of the five spacewalks totaling 21 hours and 9 minutes. STS-109 orbited the Earth 165 times and covered 3.9 million miles in just over 262 hours.

STS-123/1JA (March 11 through March 26, 2008). This was a night launch and landing aboard Space Shuttle Endeavour and the 25th shuttle/station assembly mission. Endeavour's crew delivered the Japanese Experiment Logistics Module – Pressurized Section (JEM), the first component of JAXA's "KIBO" Laboratory, and also the final element of the station's Mobile Servicing System, the Canadian-built robot, "DEXTRE", also known as the Special Purpose Dexterous Manipulator (SPDM). As lead space walker, Linnehan (EV1) performed three of five total spacewalks during the mission, logging 22 hours and 02 minutes of EVA time and served as IV1 for the remaining two spacewalks. The STS-123 crew also delivered

Richard M. Linnehan

Expedition 16 Flight Engineer Garrett Reisman (EV4), and returned to Earth with the European Space Agency's (ESA) Léopold Eyharts. The mission was accomplished in 250 orbits of the Earth, traveling over 6 million miles in 15 days, 18 hours, 10 minutes and 54 seconds.

Awards/Honors:
Navy Group Achievement Award, Navy Commendation Medal, four NASA Space Flight Medals (1996, 1998, 2002, 2008), NASA Outstanding Leadership Medal (1999), NASA Exceptional Service Medal (2002), NASA Distinguished Service Medal (2009), AVMA President's Award, The OSU College of Veterinary Medicine Alumni Award, and The University of New Hampshire Distinguished and Outstanding Alumni Awards. Honorary Doctorates of Science from the University of New Hampshire (2002), Suffolk University (2002) and Ball State University (2009).

ORGANIZATIONS:

Member of the International Association of Aquatic Animal Medicine; the Association of Space Explorers and the Explorers Club. Adjunct Professorships at the North Carolina State University College of Veterinary Medicine, Raleigh-Durham, North Carolina and the Texas A&M University College of Education, College Station, TX; Board member, Channel Islands Marine and Wildlife Institute (CIMWI), Santa Barbara, CA; Board member, Board Member, NASA Institutional Animal Care and Use Committee (IACUC). Board member NASA Institutional Review Board (IRB), Board member Saint Paul's School Advanced Studies Program (SPSASP).

Pronunciation:

RICH-urd LIN-eh-han