

Dr. Roderick C. Tennyson

Co-Founder and President, Trans Africa Pipeline Inc., Toronto, Ontario;
Ph. D., P. Eng., University of Toronto, Aerospace

Current Activities:

Dr. Roderick Tennyson, co-founder and President of TAP Inc., is currently Principal of R.C. Tennyson Ltd.; Professor Emeritus at the University of Toronto Institute for Aerospace Studies; and Chief Engineer for TAP

Education:

Dr. Tennyson holds a B.A.Sc. from the University of Toronto in Aerospace Engineering, an M.Sc. and a Ph.D. in aerospace engineering from the Institute for Aerospace Studies, University of Toronto.

Research/Experience:

Dr. Tennyson's research activities have focused on space materials and structural design, micrometeoroid and orbital debris impact damage, fibre optic sensing systems for civil engineering structures and pipelines, including remote pipeline monitoring, flood mitigation and preservation of flood waters, climate change and the mitigation of carbon dioxide through natural sequestration.

Dr. Tennyson joined the faculty of the University of Toronto (U. of T.) Institute for Aerospace Studies (UTIAS) and was appointed a full professor in 1974. He served as Chair of the Division of Engineering Science at U. of T. and was later two-term Director of the U. of T. Institute for Aerospace Studies, 1985 – 1995. In 1996, he became founding Director of the University's Government Research Infrastructure Program which secured over \$400 million dollars in grants and contracts awarded to premiere researchers across the whole university faculty over a four-year period.

Dr. Tennyson was a Founding Member of the International Space University (ISU) headquartered in Strasbourg, France, and President of the Canadian Foundation for ISU (CFISU) from its inception in 1987 to 2001. He has served as consultant to and member of federal and provincial government organizations, including the federal Ministry of State for Science and Technology, the first Canadian Defence Science Advisory Board, the Canadian Institute for Aerospace Research, the federal Centre of Excellence, Intelligent Structures for Innovative Systems, and served as executive director and Board member on the Ontario provincial Centre of Excellence, the Institute for Space and Terrestrial Science.

Tennyson is the co-author of six patents and has published over 200 technical papers on subjects ranging from the design and testing of

aerospace structures to the design of new fibre optic sensor systems for pipelines and civil structures. He has worked with NASA as one of the few Canadian NASA-accredited scientists and flown several experiments on the U.S. Space Shuttle and the NASA Long Duration Exposure Facility satellite which was in orbit for over five years. He was also a member of the University of Toronto team that helped save the Apollo 13 astronauts during their aborted mission to the moon.

Tennyson is a Fellow of the Canadian Aeronautics and Space Institute (CASI) and has been recognized with numerous awards for aerospace engineering, advanced materials, outstanding achievement in aerospace science and engineering, and 2005 from the Canadian Government's Department of Natural Resources for his "exceptional contribution to the development of a novel remote pipeline monitoring system." In 2010, he received an innovation award from NASA for his patented design for a fibre optic impact detection system for spacecraft.

TAP Activities:

Dr. Tennyson became interested in solving the perennial and recurring water crisis in the Sahel region of Africa in 2005. That year, he and co-founder Daphne Lavers, conceptualized and co-founded the not-for-profit Trans Africa Pipeline project (TAP Inc.) to provide potable water using desalination plants on both coasts of Africa and distributing the water via a pipeline running across the Sahel.

Since launching TAP, they have assembled an international team of experts to address this urgent problem. The TAP team under Tennyson's direction has secured not-for-profit status in Canada and charitable status in the U.S. (TAP Foundation), developed a comprehensive co-operation document template for potential member states and contributors, constructed an informational Website on TAP with corollary online donation potential, and conducted more than 10 years of outreach, contact and networking with a host of potential supporters and contributors. With the aid of TAP team members, Dr. Tennyson has published and lectured extensively on the TAP project.

TAP Commitment:

With Tennyson's expertise in pipeline design, construction and monitoring, a large-scale pipeline carrying potable water became a possible – and then, an obvious - solution to recurring water shortages in regions of Africa such as the Sahel. His research and design studies have proven that such a project is technically and economically feasible. Dr. Tennyson is committed to seeing TAP implemented as the only rational, feasible long-term solution to on-going water scarcity across the Sahel.