

## The DCIEM diving tables and dive computer - a history

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The DCIEM (Defence and Civil Institute of Environmental Medicine) Diving Tables are used widely by a number of organizations and groups that include recreational, commercial, scientific, police, and naval divers in many countries. In 2001, the first dive computer based on the DCIEM decompression algorithm, the Cyber Aqualand manufactured by the Citizen Watch Company, became available for recreational diving. The research that led to the development of the DCIEM decompression algorithm goes back over 40 years to 1962 when Dr. DJ Kidd and Mr. RA Stubbs set out to develop a dive computer. By 1967, they had conducted approximately 5000 man-dives and had developed a successful pneumatic analogue decompression computer based on a series arrangement of tissue compartments. Between 1967 and 1979, this computer was used extensively at DCIEM for training and experimental diving to depths as deep as 90 metres of seawater. With the availability of the microprocessor in the 1970's, a series of electronic digital dive computers using the Kidd-Stubbs decompression computer model was designed. In 1983, DCIEM was tasked to develop a new set of air decompression tables for the Canadian Forces. Because of the vast experience with using the Kidd-Stubbs dive computer, it was decided to base the new tables on a modified version of the Kidd-Stubbs model that would not only give increased safety but also allow the extension of the model to allow oxygen decompression and the use helium-oxygen breathing mixtures. The Citizen Cyber Aqualand incorporates the air diving portion of the DCIEM 1983 decompression model.