



IET Travel Award for International Travel - Report

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I recently had the fantastic opportunity to participate in the 17th International Submarine Races 2023 as part of the Warwick Submarine team. Our submarine, aptly named 'Man-o-Warwick,' travelled to the US in June 2023 to compete in this prestigious event and showcase the innovations implemented by the team over the past year.

The 17th International Submarine Races, hosted at the US Naval base in Carderock, Maryland, is a biennial engineering competition that challenges students and engineers from across the globe to build a human-powered submarine, capable of traversing a 100m pool in the US Naval base. This competition is designed to demonstrate new research in the realm of STEM education. It provides a unique platform for high school and university students to push the boundaries of human-powered submarine design and operation. The competition comprises multiple categories, each offering teams the opportunity to showcase their engineering prowess. Such categories include submarines with one or two divers, and those with a singular or dual propellor system.

The competition took place in the US Naval pool, the David Taylor Model Basin, which was 6 metres in depth and 975 metres long. This expansive pool served as the testing ground for all submarines. Our submarine competed in the one-person, one-propellor category. The aim of the competition was to create a submarine with a streamlined hull for optimal performance, allowing us to navigate the 100m course in the shortest completion time possible. Additional awards were available each day for the team which achieved the highest speed in terms of knots.

Upon our arrival to Washington D.C., the first day quickly arrived and was characterised by the unloading of our cargo and making adaptations to our submarine's hull. More specifically, we wanted to enhance the overall length of the submarine to make it more comfortable for the diver during the race. Hence, an extension made from carbon fibre was attached to our hull. After this, our submarine was ready to race! Upon our first few runs, multiple challenges were faced. Initially, our submarine faced buoyancy issues that necessitated adjustments including the addition of extra flotation devices. Furthermore, during one race, the pedal system slipped out of place, forcing us to retrieve the submarine from the pool and fix the demanded problems. Despite this, these hurdles became opportunities for creative problem-solving and collaboration within our team.

In particular, my role in the team was twofold – working as part of both the engineering and fundraising teams. Such tasks involved assisting with the hull extension, liaising with sponsors, updating social media pages, and procuring merchandise in the form of team t-shirts. This multifaceted involvement allowed me to gain a comprehensive understanding of what working on similar projects would be like in my future job.

Throughout the entire competition, the resilience of our team remained, and we were able to secure awards in both the Best Design Outline Award (for our PowerPoint presentation to the judges) and the Winner of Day 2 Racing, a testament to our dedication and ingenuity.

Beyond the competition, my trip to the United States provided an incredible opportunity to explore Washington, D.C., the epicentre of policymaking in the nation. This exposure to the political and cultural heart of the United States was both enlightening and enriching, helping to promote my interest in the intersection of politics and engineering for a more sustainable world. Places I got to visit throughout the trip included The White House, Capitol and the Smithsonian National Air and Space Museum.

Reflecting on this transformative experience, I am profoundly grateful to the Institution of Engineering & Technology for their unwavering support through the IET International Travel Award. Their investment in my personal and professional development has been instrumental in shaping my aspirations. Looking ahead, I am committed to leveraging this international engineering experience as I explore opportunities for pursuing master's programs at universities in the United States.

Overall, participating in the International Submarine Races provided me with a number of vital skills including the ability to collaborate effectively under pressure, adapt to solve intricate engineering problems, and engage in intercultural exchanges with teams from diverse backgrounds. These skills are not only valuable assets but also serve as a testament to achieving success in my future career.

