

MS. AISLING SHANNON

**STRUCTURES ENGINEER
EUROPEAN SPACE AGENCY,
NOORDWIJK, THE NETHERLANDS**

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Education and Training

→ B. Eng. (Hons) Aeronautical Eng, University of Limerick, Ireland, 1998

Current Position

Title	Dates	Employer
Structures Engineer	2006 - Present	European Space Agency, Noordwijk, The Netherlands

Previous Positions

Title	Dates	Employer
Antennas Stress Engineer	2005-2006	EADS Astrium, Stevenage, England
Lead Structures Engineer	2004-2005	SSTL, Guildford, England
Stress Engineer	2001-2004	EADS Astrium, Stevenage, England
Stress Engineer	1998-2001	GKN Westland Aerospace, Isle of Wight, England

"Home" Town(s)/County(s)

Athlone

Please describe your current job

My current role is on a spacecraft project called EarthCare. EarthCare is an Earth Observation mission which will use four complex instruments to observe the clouds. It is part of ESA's Earth Explorer Missions and is in cooperation with the Japanese Space Agency (JAXA). My role in this project is to oversee the structural design of the spacecraft and instruments. This involves ensuring that the end product (satellite) will be structurally sufficient to survive the launch into orbit. Critical aspects from a structural perspective are strength and stiffness (to survive the launch) and also in-orbit effects such as thermo-elastic distortion and micro-vibration. Some of the most interesting aspects are associated with the test campaigns that a spacecraft has to go through to be

qualified for flight: vibration, acoustic noise and shock are the main mechanical tests. Part of my role involves travelling to the various European industrial companies responsible for the design and development of the spacecraft. For this project that means mainly travel to France, Germany and the UK, but in the near future will also include travel to Japan and Switzerland

ESA has several sites across Europe. The main technical and testing centre is based in Noordwijk in the Netherlands, where I am based. I have been here for four years now. The opportunities to have a varied and interesting career are great at ESA and also as it is a truly multinational organisation, I work with people from all 17 of the member states of ESA.

Please describe your career path since graduating with your B.Eng. Aeronautical Eng.

My whole career to date has flowed from my undergraduate thesis. My thesis was to perform a Finite Element Analysis of the wingbox of the UL Aerobatic Trainer, using MSC/NASTRAN. This opened the door for my first role, as graduates with NASTRAN experience were not common. I spent two and a half years working at GKN Westland Aerospace on aircraft structures, such as engine nacelles, in various areas of the Stress Department, including ten months in the Dynamics Analysis group, analysing helicopter rotor blades, landing gear, and even windscreen wipers!

This experience in dynamics analysis led to my next role with EADS Astrium as, unlike the aircraft industry where the main focus is for static loads, for the spacecraft industry all of the loads are dynamic. I spent the next three years working on several different European Spacecraft Projects, including MetOp and Aeolus, as a structural analyst, ensuring the integrity and stability of the antennas that they would fly.

At this stage I decided to try something new and went to work at Surrey Satellites as a consultant. Surrey Satellites is a small company which has a very innovative approach to spacecraft design. The year and a half that I spent at Surrey Satellites was among the most interesting, diverse, challenging and satisfying of my career to date. Being a small company, I also supported design, testing, manufacturing, and actually was involved in building a test satellite all whilst doing my nominal job of lead structures engineer. I worked on a project called Rapid Eye, which is a constellation of five satellites, for which Surrey Satellites was responsible for the design, build and test of the spacecrafts used to launch the satellites.

From there I moved back to Astrium to work for a year on spacecraft Antennas. An opportunity then arose at ESA, which I took and I have been here for the past four years.

What made you decide to study Aeronautical Engineering at UL?

It was the eye catching course name that led me to look into it initially and then once I started to investigate, I found the course content was interesting and challenging

Are you glad you did?

Definitely yes. It has led to an interesting career and lots of friends dotted all around the globe.

What did you most enjoy about studying at UL - academically, and also non-academically?

Academically the most interesting parts of the course for me were the practical parts, the flight lab, the labs and tutorials. For me, it was the application of the theory in a practical sense which led to a better understanding. Non-academically, although I believe the campus has changed a lot since I was there, UL had a real family feel, like we were all part of a small community.

Where did you do your COOP?

For me COOP was not great. I was not placed initially and in the end had about 5 months working at a company called TUBEX who made plastic toothpaste tubes. The COOP office seemed only concerned with placing the top grade students - even though we were a small class, there were several students who were below 2.5 QCA who were basically ignored. The following summer I arranged my own placement at Shannon Aerospace, which was only for 3 months, but was infinitely more useful and relevant.

What advice would you give school-goers considering choosing Aeronautical Engineering?

Think long and hard about it, it is not for everyone. My first year class had 45 students and only ~20 went in to 2nd year. A lot of people did not realise what the course was going to be like and changed across to Mechanical Engineering. Some people found that it was too specialised, but in reality, the diversity of careers that my fellow graduates have followed shows it to be the foundation for multiple careers. If it is something that is interesting to you, then go for it, I am very glad I did.

What advice would you give future graduates of Aeronautical Engineering?

Keep an open mind to not so obvious possibilities. The space industry is something I didn't even consider when I was looking for graduate positions, but having ended up in it, it is a fascinating and challenging industry.