

IAF SPACE TRANSPORTATION SOLUTIONS AND INNOVATIONS SYMPOSIUM (D2)
Launch Vehicles in Service or in Development (1)

Author: Mr. Alan Thompson
Skyrora Ltd, United Kingdom, alan.thompson@skyrora.com

SKYRORA: FROM SCOTLAND TO SPACE

Abstract

Skyrora are a Scotland-based company aiming to support the UK's plans for space sector growth through the development of an orbital launch vehicle and a number of carefully selected supply chain innovations that we believe will benefit the industry as a whole for years to come.

Skyrora are headquartered in central Edinburgh, opposite the historic Edinburgh Castle. We have a diverse team of 120 individuals spread across six workshops in the UK and Europe.

Skyrora's strategy is to take an incremental 'step-by-step' approach to allow for critical testing and de-risking. We utilise proven British technology in combination with advanced manufacturing methods. We take significant inspiration from previous UK space heritage; sharing the same propellant combination as Black Arrow and utilising learnings from Skylark's technology for our sub-orbital test programme. Skyrora are working to identify gaps in the UK and European space industry supply chain while moving quickly to create innovative, long-term solutions for future growth.

As part of our incremental de-risking approach, Skyrora are developing four sub-orbital rockets in order to test the avionics, ground control systems, trajectories, payload deployment, recovery systems and insurance of our vehicles in parallel with the development of our orbital rocket. This allows us to perform real tests of these systems, the first of which, Skylark Nano, was successfully launched with a commercial payload in August 2018 from northern Scotland, with the remaining test vehicles due to launch within the next 12 months, including our 'SkyHy' and 'SK-1' rockets that will cross the Karman line and officially reach space. All of our launches will be from British soil in an effort to support the overall sector development.

Our orbital vehicle, Skyrora XL, consists of 3 stages with a re-ignitable manoeuvrable third stage allowing for the specific placement of satellites in orbit. The Skyrora XL is capable of carrying 315kg to 500km.

Inspiring the next generation of scientists and engineers is a corporate value of Skyrora, several of our staff members are STEM (Science, Technology, Engineering and Maths) ambassadors and Skyrora have participated in a number of high-profile youth engagement activities across the UK, including the return of Black Arrow from Australia.