

Dronedesk case study

INNOVATION IN METHANE DETECTION

How Dronedesk is providing support for Ben Lunnon-Wood at [Big Sky Theory](#) and their partnership with Innovate UK and the National Physical Laboratory (NPL) to build innovative drone-mounted sensors to detect methane emissions



8 min read

Ben Lunnon-Wood is creating something new. He's building bespoke equipment with research bodies like Innovate UK and the National Physical Laboratory (NPL) so his modified drones can detect methane emissions.

But, as a startup, he's responsible for everything. He needed support to manage his customers, keep his drone operations compliant, and help his business grow while he created ground-breaking technology.

So he chose Dronedesk.

What is Big Sky Theory?

Big Sky Theory uses drones to help oil and gas businesses detect unwanted methane emissions, and it's the brain child of Ben Lunnon-Wood. Ben started the company shortly after leaving the Royal Air Force, where he'd spent half of his 18 years in the back seat of a Tornado aircraft before moving into the RAF's Reaper Force, which operates a fleet of Unmanned Aerial Vehicles (UAVs).

It was this service that got Ben thinking about the application of drones outside the military, and it was conversations with his father-in-law, a retired Chief Geophysicist with British Petroleum, that got him thinking about methane emissions.



"I want to do things that make a difference. And a lot of people don't realise the damaging effect methane has compared to carbon dioxide; the detrimental effect is far greater in the short term. So if we can tackle methane, we can make an impact. We can make a difference."

So, in November 2021, Ben decided to take the leap. He founded Big Sky Theory with a plan to use drones to help businesses identify and quantify unwanted methane emissions. Because, while a ground team of six scouring a space the size of a football pitch would take 4 hours to find a methane emission, Ben knew a drone with the right equipment could do it in 40 minutes.



"Emissions sensors were available but without understanding their strengths, and more so weaknesses, their successful employment and resultant data validity is incredibly hard to achieve. Working alongside the National Physical Laboratory (NPL) via the Measurement 4 Business programme, we were able to tackle the understand phase together. Detailed research informed the sensor selection and lab-based bench testing of the laser technology allowed us to fully understand the capability and to begin forming a concept of airborne employment."

Ben also started working with Innovate UK to take his work out of the lab and into the field, running operational tests to get real-world validation of his work. Now Ben's sensor can help him locate an emission and identify how many methane molecules are in the air beneath the drone; this tells his customers where the leaks are and which ones need to be prioritised to minimise the emissions.

Not content with that, Ben is working on even more sensor research to provide customers with flow rate data, which would let his customers know exactly how much gas is being leaked per minute.

But while Ben was working with respected research and development organisations to create entirely new technologies to tackle his customers' challenges, he needed something equally advanced to take the headache out of his drone flights.

Enter Dronedesk.

Dronedesk - a regulatory enabler



"Entering the drone industry is not for the faint hearted. Alongside the myriad of business development tasks, compliance, assurance and regulatory oversight remain at the forefront of all operations. Success in this industry is fueled by mindset change and cultural acceptance and the ability to dovetail into a complex and congested airspace structure."

As for many operators, CAA authorization remains a critical dependency for Big Sky Theory as Ben continues to pursue use cases that fall outside of the Open Category and require CAA approval. Failure to gain authorization would undoubtedly preclude the development of the various test and evaluation projects currently underway.

Which is one of the biggest reasons we built Dronedesk in the first place. When our founder, Dorian, was training as a commercial drone operator, he was astounded by the sheer amount of paperwork needed, usually spread across dozens of forms, systems, and processes. It created an unnecessary headache when it came to creating an audit trail, a headache that Ben wanted to avoid.

Dronedesk can hold all the information you'd need to have on hand for an audit. From operator numbers and hours flown to flight logs and insurance details, from drone maintenance to battery serial numbers, it's all in one place, all clear and easy to access. Dronedesk even nudges you if some of those details need your attention, such as if your insurance is due to expire.



"Dronedesk simplifies the collation and management of critical data. Since joining Dorian and Dronedesk in 2022, safety cases submitted to the CAA have been approved with minimal feedback. The design of the management platform supports timely and effective operations management whilst also supporting a wide range of project and business management tasks."

Project management for drone operators

Dronedesk doesn't just hold all this information for the CAA. It's for you, too; it's designed to be a one-stop shop that makes your life as a drone operator easier.

So on top of flight planning and logging, resource tracking and personnel management, you can also use Dronedesk's Customer Relationship Management (CRM) tools to manage leads and customers, track invoicing and payments, and put together proposals.

In short, you can use Dronedesk to manage your entire business.



"I feel that Dronedesk really is an end-to-end solution. From scoping a potential lead through flying to invoicing. It's all there. I've got folders with potential commercial leads. I've got drone details, battery serial numbers, where I flew and for how long. I've got personnel management. I don't have to use other project management tools or have 17 tabs open. I can just use Dronedesk. It's a one-stop shop."

Built by someone like you

The reason for this comprehensive package is our founder. Dorian saw the dearth of good software for drone operators and decided to design it himself. He based it on his own experiences and his own desires, but he listens to the community

too.

This approach to listening and supporting customers is what made Ben decide to choose Dronedesk. And he hasn't looked back.



"As a micro startup, what I was looking for was support. I needed desperately a real person as well as a product. And that's what I got in Dorian. He just asked, "What do you need?" In military parlance, Dorian is what's known as SQEP: Suitably Qualified Experienced Personnel. He doesn't assume he knows what drone operators need. He asks us. It's wonderfully refreshing and you feel empowered, you feel part of the journey. Part of the tribe."

The future

Ben isn't just happy with his Dronedesk experience so far; he's happy to have found a platform that will grow with him.

As Big Sky Theory grows and flights require additional operators or Ben needs to start working with additional operators, his personnel management solution is already in the bag: Dronedesk is all ready to help him track their flights, monitor their flight hours, and alert him if insurance or certifications aren't up to date.

Dronedesk is also helping Ben on the other side of the growth coin: it will help Ben as the business needs to establish processes and systems alongside its growth.



"I've already had talks with [ISO]9001 auditors and mentioned Dronedesk to them. And they said I was essentially halfway there in terms of managing the business."



Perhaps most importantly, Ben feels that Dronedesk is helping Big Sky Theory establish itself as a credible organisation in the eyes of the oil and gas industry that Ben is hoping to woo.



"Being associated with NPL and Innovate UK is huge. It gets you a seat at the table. And now being associated with Dronedesk helps me because of the assurance and the validity that Dorian brings to the party."

Working with Ben is an absolute pleasure partly thanks to his “good trouble” philosophy: he isn't afraid to make suggestions or talk about ways to make positive change. It's a philosophy that's helped us improve Dronedesk, and it's a joy to see how Dronedesk is helping create good trouble in reducing methane emissions across the country. We're looking forward to helping him grow Big Sky Theory into a real troublemaker!



"I'm a Dronedesker for life. I can't imagine going anywhere else."

If you need someone to help support your drone business, start your 14-day free trial of Dronedesk today. Every single feature is free to use, from project management to flight planning, CRM tools to resource tracking, so you can see just how much Dronedesk can do for you.

All quotes are from Ben Lunnon-Wood - Founder of Big Sky Theory



Ben Lunnon-Wood [in](#)

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