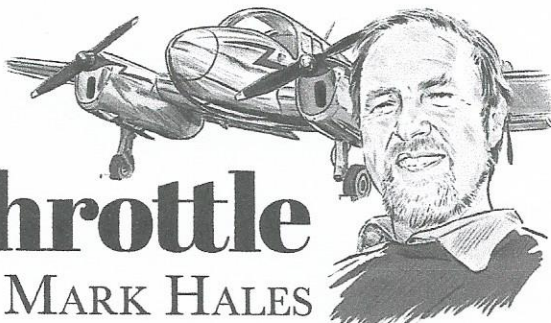


# Full Throttle

## MARK HALES



### *The funding trail*

**T**he National Aerospace Technology Exploitation Programme (NATEP) was set up in 2013, with a budget of around £40m and a remit to stimulate innovation and bring it to the attention of bigger companies. I applied and, much to my surprise, was awarded a mentor whose job it was to help secure funding for my diesel project. It was all very refreshing. My mentor assured me that

NATEP's focus was primarily small and medium-sized enterprises (SMEs) but also men in sheds like me because somebody enlightened had realized that's where a lot of innovation comes from.

Administered over four years by the Department of Innovation and Skills' Advanced Manufacturing Supply Chain Initiative, NATEP was a huge success, delivering over 120 new technologies, many unglamorous but essential stuff like bonded fixings, 3D-moulded circuits and graphite bonding. The government then changed its complexion, but contrary to expectation, another round of funding was announced in 2017, this time for £14m over three years. NATEP's administration also changed and is now run by the Aerospace Technology Institute (ATI), based at Cranfield, with the intent to deliver forty new technologies. "So what?", I hear you ask. Times are hard, but grants are still being awarded. The question is, to whom.

More recently, I was researching this month's hybrid piece – a task made more difficult as there weren't many people in the UK I could talk to, as most of the development seemed to be in Europe or the US. As far as I could discover, Faradair is the only UK firm solely dedicated to hybrid aircraft research and MD Neil Cloughley says that, since setting up in 2014, it's only received an Innovate UK Voucher worth £5k (including £1k of VAT). Clearly frustrated by the system, he's nothing if not forthright. In July 2017, he was invited to a meeting called by the Department for Transport, hosted by the Science Advisory Council, concerning Future Flight Policy. Faradair was effectively the only small player present.

"The representative from Rolls Royce stood up," Cloughley remembers, "and said, categorically, that 'there would be no hybrid powered flight in this country in the next ten years.' He let everybody finish, and then said, 'Excuse me, we can have a hybrid flying in two.'"

Cloughley expanded on how and why, and in particular his vision for Urban Air Mobility, and Faradair's proposals to cater for it. "Next thing I know, five months later, Rolls-Royce is recycling all of it," he says, "as if it's their idea. Suddenly, they're the 'pioneers of hybrid electric flight'. They could almost have copied it from our website."

Worse still, Cloughley says, only this year, £144m in grant value has been issued to Rolls-Royce and Airbus alone. Which, he points out, is public money which they aren't required to repay. "I'd never seen lobbying in action before but it's a fascinating process," he says, "especially when you see the connections between those who issue taxpayer's money and those who benefit..."

Those with inside knowledge of NATEP's funding were rather more reticent. Off the record, said one, the new administration was too closely connected to big business, but they were also his employers: "I can't afford to be a whistle-blower..." Another said simply that any attempt to point out flaws in government's funding strategy can be easily refuted and supported by evidence. Big companies have whole departments whose job it is to secure grants within state aid rules.

It's the way policy has been made for the last fifty years and, as Cloughley acknowledges, it won't be easy to change. The UK has got rid of its manufacturing industry and replaced it with a vast supply chain network which is fantastically successful and the tier one companies can't be blamed for protecting that and the jobs it creates. The problem, as he sees it, is the rest of the world is changing very fast and so is the transport infrastructure. "We can apparently spend over £100bn on vintage rail technology when 'air' provides so much more opportunity..."

"Zunum in the US and Faradair in the UK each had a very similar vision when both companies were set up in 2014," says Cloughley. "Boeing and Jet Blue saw the opportunity with Zunum and put cash and support in, and look where they are now. The ATI told us in 2015,

**“The rest of the world is changing fast and with it the transport infrastructure”**

and 2017, that to stand any chance of funding, Faradair would have to break up its project and drop it into existing funding bids. We couldn't do that, even if we wanted to, for IP reasons. Then, in May 2018, ATI encouraged Faradair to register an 'Expression of Interest for Aerospace R&T funding' and the initial response was positive. We 'demonstrated good ambition and potential fit with the UK Aerospace Technology Strategy'. Then it was rejected for lack of information about the 'path to certification', all of which we would've added in the full application. Meanwhile, Rolls-Royce, Airbus and Siemens were awarded £58m to bolt an electric fan to an old BAe 146 airliner as its E-Fan X project."

"Aerospace is a core industry that's part of our national heritage," Cloughley concludes, "and at the moment it's being run by a traditional network which appears to fear competition from SMEs, rather than support genuine innovation. Government still believes innovation comes from the universities and big business, and that simply isn't true anymore. What if Rolls-Royce and Airbus had put their E-Fan in the back of our BEHA aircraft, instead of a vintage airliner? Support an aerospace start-up and deliver a genuine X-plane, like Boeing and Jet Blue. Just imagine that... If we aren't to be left behind, we need a complete change in the culture." ▾

**Vintage aircraft and cars make Mark particularly happy**  
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