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Britain | Thrust and throttle

Why can't Britain's leading aerospace lab raise more money?

The Whittle Laboratory is extraordinary—and underfunded

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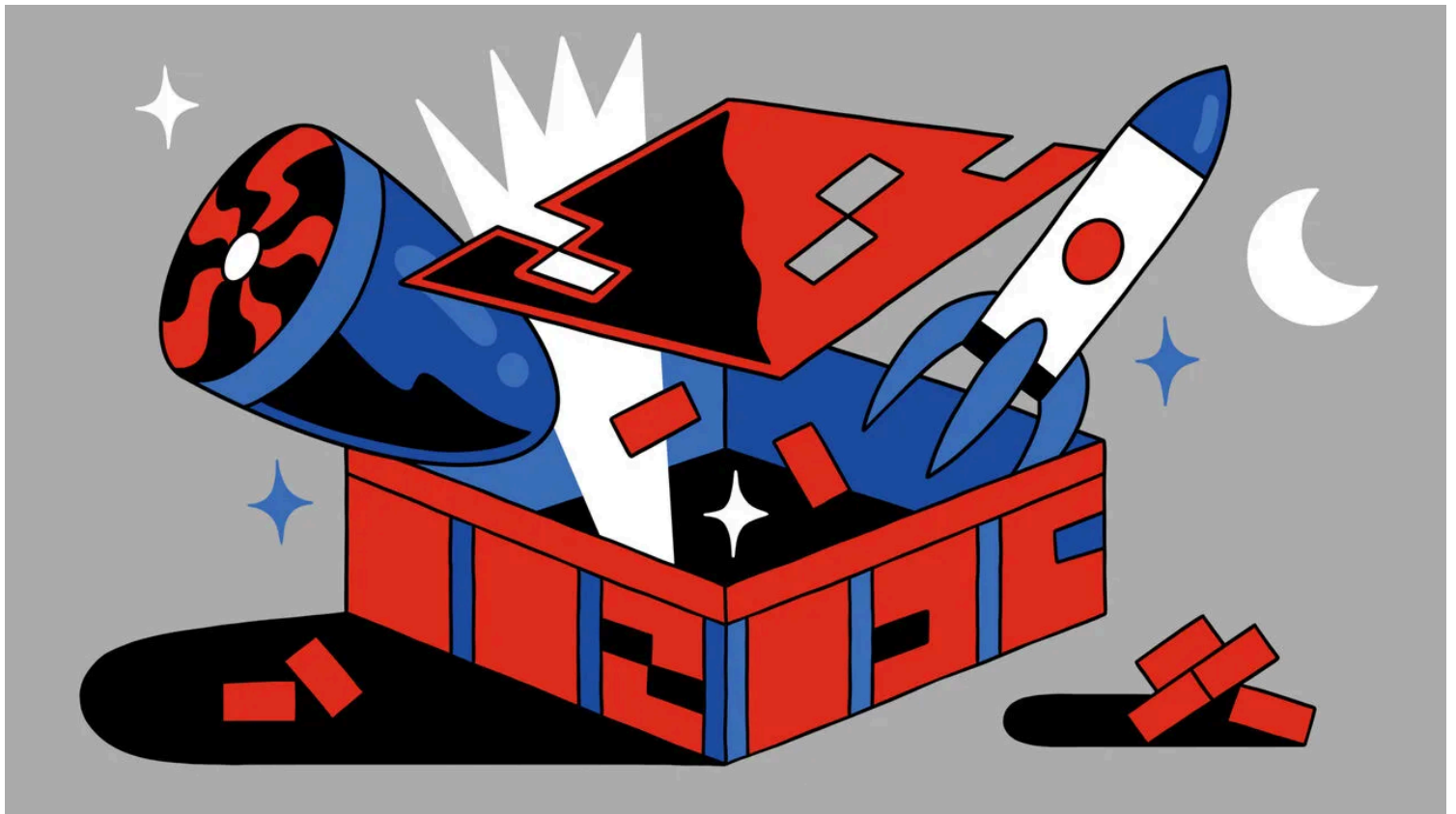


ILLUSTRATION: LEA DOHLE

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A SQUAT BRICK building on the outskirts of Cambridge is home to an area of science where Britain is still world-class. The Whittle Laboratory refines jet engines, and it is very good at it. Whittle scoops up more industry awards than any of its rivals, in a formidable industry to master. To power flight, a plane's engine must burn its fuel hotter than would usually melt the materials the engine is made of.

When the lab was founded in 1973 by Frank Whittle, a British jet-engine pioneer, with a government grant, the building no doubt seemed splendid. Now, despite its reputation, the Whittle looks more care-home than cutting-edge. The grey carpets are threadbare and it is too small to house bigger, better equipment. It can take eight years to go from an initial idea to a tested one. If the right machinery were on site, it might only take a fortnight.

That will soon change. Scientists are set to move into a state-of-the-art replacement lab on October 17th. The opening was “on a knife edge” for a long time, says Rob Miller, the lab's director. Expansion plans were drawn up in 2017. Four years later, less than a third of the £58m (\$78m) required had been raised. Even after securing the money for construction, the new lab still lacks cash. It has as yet failed to secure a funder for £10m a year for research on high-risk, high-reward “moonshot” ideas.

The Whittle has no shortage of friends. King Charles III is a fan—breaking ground on construction of the new lab was his first official engagement after his coronation. The lab is part-funded by Rolls-Royce, a British jet-engine maker which benefits from the Whittle's research. The government ought to like it too. The lab helps keep Britain as the sole country outside America with the expertise to make, and improve, jet engines capable of powering the largest planes. Aircraft parts are Britain's fifth-most-valuable goods export.

Money has nevertheless proved hard to find. Industry stumped up some. But the business model of aerospace firms means risky ideas can take decades to turn a profit, if they work at all. Rolls-Royce had to be bailed out in 1971, after it overspent developing a new jet engine.

The government was even more hesitant. Partly this is because funding for research is divided into many pots. “Each funding agency would say no no, it's the other one,” says Professor Miller. But state bodies also have to be wary, says Robyn Thomas of UK Research and Innovation (UKRI), Britain's main state funder of science. UKRI has more claims on its money than it can dole out, he points out. To avoid waste, research proposals are ranked by groups of peer-reviewers.

expert peer-reviewers agree on an idea, we should not be doing it,” he says. Innovation, he believes, comes from taking risks “at the edge of the bell curve”, not by following the consensus.

Do-gooders, not the government, are now responsible for a surprising amount of successful British innovation. [The founders of DeepMind](#), Britain’s AI darling, met and studied at a computational neuroscience lab funded by Lord Sainsbury, a supermarket tycoon and science enthusiast. He has also stumped up money for the new Whittle laboratory, as has Peter Bennett, a banker-turned-philanthropist, whom Professor Miller credits with saving the project.

A swish metal-and-glass building is replacing the brick one, with plenty of room for top-line equipment. And beyond the Whittle attitudes to risk are changing. ARIA, a sister organisation to UKRI, has since been set up to fund bolder ideas, faster. A new boss of UKRI, Sir Ian Chapman, took charge in August, with the brief of prioritising economic growth. With luck, the engines of innovation are revving up. ■

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