

## **PROJECT PRODIGAL NEITHER FISH NOR FOWL**

Often dismissed as pure "pie in the sky", the concept of an all-terrain vehicle capable of sustained flight for short periods for the British Army was investigated in surprising depth by some of the UK's most technologically advanced aerospace companies. **CHRIS GIBSON** takes a look at the "Jumping Jeeps" proposed by Handley Page and BAC during the 1960s



LYING CARS, LIKE hypersonic flight and nuclear fusion power, have been a decade away since this author was a lad in the 1970s and no doubt 20 years before that. Every week my eagerly awaited copy of *Speed* & *Power* magazine covered exotica such as the XB-70 Valkyrie, TSR.2, Formula 1 cars with ejection-seats and, of course, flying cars. Regular as the first cuckoo of spring, articles on flying cars have appeared for almost a century. Perhaps the third decade of the 21st Century might see them make the jump (pardon the pun) from *Blade Runner* to (the late?) *Top Gear*.

## A LOT OF WHYS ....

In one form or another there has been a lot of government support for flying cars - even the Hafner Rotabuggy of 1943 received official backing — but the most widely known is Britain's Project *Prodigal*, also known as the "Jumping Jeep". As another of aviation's dead ends, it merits examination, despite it generally being considered a joke. The obvious question is why? Why build a scout car that could jump over, rather than wade or swim across, a river? Why have a vehicle that could fly only for less than 20 miles (32km)? Why add complexity to something you would want to be simple? Why make a cheap scout car expensive? Why make something so evidently "un-squaddie-proof"? Why did aircraft companies rush to meet this requirement? And finally, why not just use helicopters? Or a horse?

The helicopter question is probably the easiest to answer; the British Army was severely limited in the size and capability of its helicopters, thanks to restrictions placed on the Army Air Corps (AAC) by the Air Staff — no helicopters with an all-up weight greater than 4,000lb (1,815kg) and no weapons aside from a Sterling sub-machine-gun poked out of the cabin door. Tactically, helicopters were not suited to "silent" observation, whereas a scout car can move into a position, switch off and watch for long periods. As for the horse, well, they were so 19th Century — until US Special Forces began using them in Afghanistan in 2001.

At the end of the 1950s Britain's armed forces were to be air-mobile and the Army's kit was to be carried in RAF transport aircraft to intervene where and when required. This prompted Project *Prodigal*, a series of air-portable armoured vehicles that could fit into an RAF Armstrong Whitworth Argosy and be delivered into austere strips to sort out post-colonial unpleasantness. Fortunately for *TAH* readers, this tale took an aviation turn, as the Ministry of Aviation (MoA) and War Office (WO) joined forces to develop a new class of military vehicle that became colloquially known as the Jumping Jeep.

For reasons that are unclear, the *Prodigal* name became attached to Specification 92/58, devised by the Fighting Vehicles Research & Development Establishment (FVRDE) and jointly issued by the MoA and WO in 1960. This called for a Ground-Air Scout Car (GASC) and became General Staff Requirement (GSR) 1009, which covered a reconnaissance vehicle that could cross obstacles to ensure mobility on the Nato Central Front in the 1970s. The vehicle was required to leap over an obstacle 10ft (3m) high and 30ft (9m) wide, preferably more, and to do this even if bogged down in mud. As ever with British aviation, there is an alternative origin story that relates how the British Army watched Shorts' SC.1 VTOL research aircraft going up and down and thought "Hmmm, we could do with something like that on the battlefield for having a shufti over hedges" and drew up Specification 92/58 in 1958. Whatever its origin, the requirement was demanding, as outlined above, and also called for a "squaddie-proof" cross-country vehicle that could carry a useful reconnaissance payload, i.e. an observer with a radio.

## **BIDS FROM INDUSTRY**

As for most military aviation requirements in the early 1960s, many of the aircraft manufacturers in the UK submitted a bid for GSR.1009, with a total of 13 submissions being made. Six companies were invited to tender: Boulton Paul; Folland (representing the Hawker Siddeley Group); Short Brothers & Harland (Shorts); Vickers at South Marston (representing the British Aircraft Corporation); Westland, and Hovercraft Development Ltd. The latter declined to take part in the process but two firms, Handley Page Ltd (HP) and Bristol Siddeley Engines Ltd (BSEL), requested participation in the tender process on a private-venture basis. The bids fell into five categories: direct-lift with jet engines; shaftdriven fans; wing-lift; "leap vehicles" and rotors. Some companies, including HP and Westland, proposed two or more designs that either took different approaches to the same problem or tweaked another of their own submissions.

Westland's rotor-based design, essentially a cross between a Scout helicopter and a Land Rover, was dismissed at an early stage as achievable but lacking imagination, although its relative simplicity was praised. Folding and unfolding the rotors and tailboom would take

OPPOSITE PAGE, TOP A somewhat optimistic artist's impression of Handley Page's H.P.120 Type B proposal for a "Jumping Jeep", flying over a caravan of nomads with their camels. OPPOSITE PAGE, BOTTOM BAC's approach, the P.35, incorporated a system of flywheels to drive its 13 lift-fans for "leaping". TOP: HPASSOCIATION / BOTTOM: VIAAUTHOR