

Rocket man: SOF teams demo wearable flight systems

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SOF personnel may soon be able to turn 'jetpacks' from science fiction into reality, as wearable jet propulsion technologies appear to be advancing. A variety of jetpacks are being considered by SOF components around the world, including USSOCOM and French COS. *Andrew White reports*

Long a concept used in fiction – notably by James Bond in the 1965 movie *Thunderball* – jetpacks may be advancing to the point of having operational use for armed forces in missions such as insertion or extraction, or for providing overwatch. Still, the technology and concepts are in their infancy.

JetPack Aviation's JB11 JetPack is being developed under a Co-operative Research and Development Agreement (CRADA) signed in 2016 with US Special Operations Command's (USSOCOM's) Naval Special Warfare Command (NSWC).



France's DGA is studying Zapata's Flyboard Air technology as a concept but is not yet considering such systems for operational use. (DGA)

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According to JetPack Aviation's chief executive officer, David Mayman, the technology is being designed in collaboration with NSWC's Development Group (DEVGRU). Mayman told *Jane's* he could not provide details regarding the concepts of operation (CONOPS) or tactics, techniques, and procedures (TTPS) associated with this emerging technology, but said "recent development has been related to the needs" of DEVGRU, the official name of a US Navy SEAL unit.

“By achieving the challenging goals under this agreement, we’ve proven that a small, powerful turbine-powered vehicle can efficiently, dependably, and safely meet rigorous operational demands of our nation’s most elite SOF [Special Operations Force] and industry partners,” JetPack Aviation said in a statement. This, Mayman added, included training a US Navy SEAL to operate the JB11 in tethered- and free-flight modes.

The JB11, currently at Technology Readiness Level 7, comprises a six-engine solution. The turbine-powered, vertical take-off and landing (VTOL) system relies on kerosene or diesel fuel, although a hydrogen-powered variant is also being considered for future development. Thrust is managed autonomously by a central processing unit.

The system was designed with ‘rapid mount/dismount’ in mind and features an integrated parachute for emergencies. Design parameters included the capability for the pilot to carry the jetpack unaided. The company is also considering an autonomous flight mode in the future. The JB11 has a maximum endurance of 15 minutes in flight time, a maximum speed of 120 mph (193 km/h), and a maximum range of 15 miles. Pilots must weigh less than 230 lb, according to company documents.

“We’ll be releasing a new vehicle, with substantially more potential use cases. It is something that is creating quite a lot of interest from each arm of the US Department of Defense,” Mayman said. USSOCOM was unavailable to comment on the programme.

Elsewhere, Gravity Industries is developing its ‘Jet Suit’ solution that comprises five gas turbine engines capable of generating 1,050bhp and 144 kg of thrust to enable vertical lift and human propulsion. Directional flight control is achieved by vectoring the arm engine thrust. Options for propulsion include diesel, kerosene, or jet fuel.

[Continued in full version...]

(424 of 1259 words)

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