

SilentHawk

All-Wheel Drive
Hybrid-Electric Military
Motorcycle Prototype



SilentHawk is a prototype hybrid-electric, all-terrain motorcycle designed for quiet, tactical insertion. Its advanced, two-wheel drive technology could tackle the most challenging terrain. Its two-mode hybrid propulsion system provides battery-only power for quiet operation, and is multi-fuel capable for long-range operations.

Superior All-Terrain Performance

Troops attempting to maneuver with equipment during field operations face a number of challenges. Conventional transport vehicles can move people and cargo fast, but they have trouble negotiating extreme terrain. Likewise, the size and weight of these conventional vehicles is designed to make them difficult to airdrop.

With its thin profile and innovative two-wheel drive, SilentHawk makes easy work of thick forests, narrow mountain paths, and rocky landscapes. The military bike is lightweight and is made for easy deployment—its large cargo capacity, auxiliary power ports, and interactive user interface support deep-penetrating operations.

Rugged, Quiet and Versatile

SilentHawk combines Alta Motors' high-performance RedShift MX electric motorcycle with a multi-fuel hybrid system developed by Logos Technologies. The hybrid-electric prototype can run for up to 170 miles without refueling—including two hours in quiet mode on a single charge. In addition, the multi-fuel engine would provide flexibility as well as the option to acquire fuel during a mission.

The hybrid design allows the user to quickly transform SilentHawk into a lighter, electric-only vehicle if needed. In either configuration, SilentHawk maintains its superior all-terrain handling.

Capabilities

- Equipment-carrying capacity of 75 lbs
- Multi-fuel hybrid system (gasoline, JP-5, JP-8, Jet-A1, propane, AVGAS)
- Interactive graphical interface to display mission data and system status
- Integrated mount and power interface for Android Tactical Assault Kit (ATAK) device
- Charging ports for equipment and handheld electronics
- Up to 170 miles total range (including 2 hrs in quiet mode)
- Top speed of 80 mph
- Low acoustic signature
- Two-wheel drive improves SilentHawk's all-terrain capabilities and efficiency (power regeneration through braking)
- Surpasses IP 65 environmental sealing standard

Specifications

Platform

Weight	350 lbs	Storage capacity	75 lbs
Range*	170 miles (genset + 2 hr quiet mode)	Front suspension	12" fully adjustable
Top speed	80 mph	Rear suspension	12" fully adjustable
Horsepower (nominal/peak)	25 / 40 hp	Front wheel	21" spoked
Torque	122 ft-lbs	Rear wheel	19" spoked
Traction control	Two-wheel drive	Seat height	37"

Hybrid-Electric System

Acoustic signature (7 meters)	<55 dB quiet mode (conversation volume); <75 dB genset mode (vacuum cleaner volume)	Battery	5.8 KWH lithium-ion battery pack
Genset power (nominal/peak)	7.5kW / 30kW	External power ports	3 ports, 500 W total
Efficiency	Up to 16 percent gain due to regeneration	User interface	LED display with mount for additional handheld device
Fuel (genset)	Multiple fuels (gasoline, JP-5, JP-8, Jet-A1, propane, AVGAS)		

Potential Applications

Maneuver/Transport Provide ground forces with the ability to traverse rough terrain quickly and quietly. Could also be airdropped and stowed/hidden for later retrieval.

*Range varies based on speed and terrain

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