



GREMLINS

Air Launched and Unmanned Recovery System

A New Distributed Airborne Capability

Gremlins, developed with funding from the Defense Advanced Research Projects Agency (DARPA), **integrates with most existing strike, reconnaissance, and cargo aircraft**, as well as ground support equipment.

Its capability **enables effective new concepts of operation and greater operational risk-taking** across the spectrum of mission types. These range from intelligence, surveillance, and reconnaissance (ISR), mobile target attack, and limited suppression of enemy air defense (SEAD) and close air support (CAS) special operations missions up to complex SEAD/strike missions requiring volley quantities of air vehicles often operating in a coordinated fashion in access denied environments.

What Gremlins offers

Air launch & recovery of low-cost, reusable UAVs. Allows force projection and greater risk taking at lower life-cycle costs for operations in denied environments

Rapid and safe multi-UAV recovery and storage. Advanced precision navigation, a stabilized docking device, and safety innovations reduce manned aircraft time spent recovering UAVs

Scalable, distributed system architecture. Supports the launch, employment, recovery, and refurbishment of single to volley quantities of UAVs from one or more aircraft and employment from an air operations center (AOC) or forward operating base (FOB)

Modular, open architecture UAV avionics. Straightforward integration of future payloads, communication subsystems, and enhanced mission software

Coordinated, autonomous operations. Supports autonomous capabilities, enabling swarms of unmanned systems to operate together with minimal supervision

Robust intra-swarm communications. Adaptive, anti-jam network for distributed sensing and decision making, information sharing, and coordination

Minimal support and no peculiar support equipment. Modular design and minimal maintenance yields a small logistics footprint and two-level support organization

Low-cost, limited-life airframe designs. Designed for reuse of expensive payload and propulsion systems with replacement of low-cost airframe and other systems at end of life



X-61A Gremlin Air Vehicle

For Effective and Affordable Force Projection

Mission Profile



UAVs are launched from wing pylons or rotary launchers



The UAV docks with a towed, stabilized capture device, then is reeled in, mechanically secured, and stowed



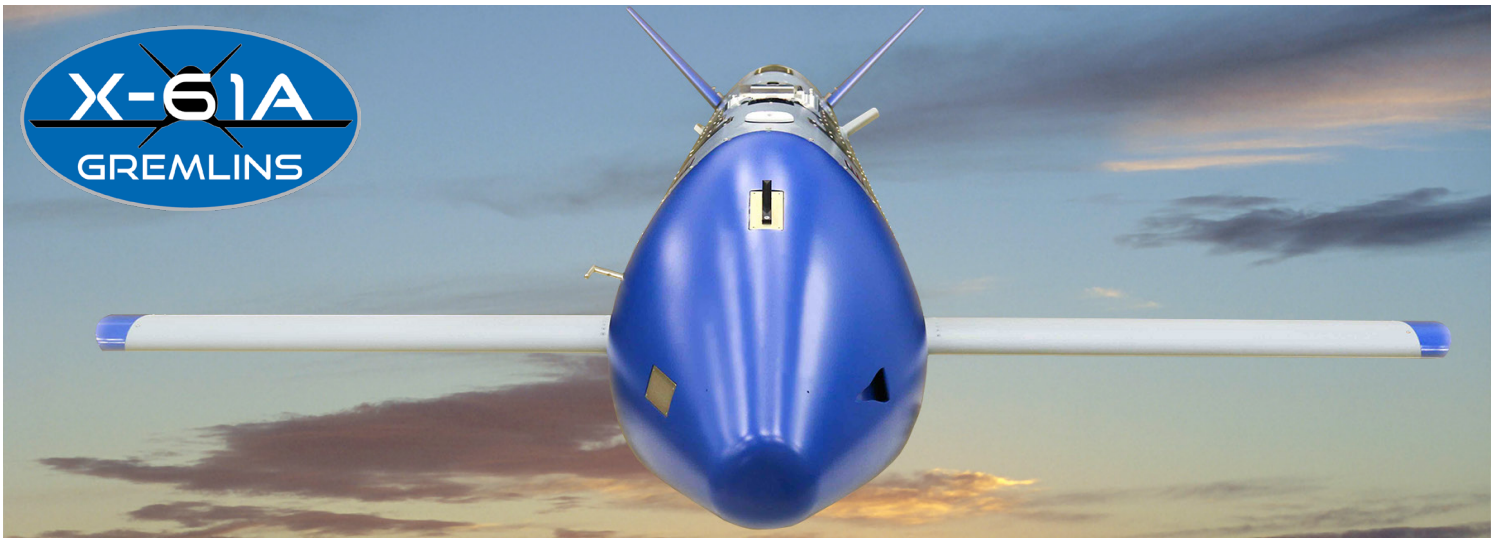
Low-cost, modular, reusable "truck" operates individually or with coordination in larger quantities



Air and Ground Operator Control Stations provide redundant means to manage mission operations



Compatible with existing weapons loaders and other ground support equipment



Overall Specifications

Performance

Mission Radius / Loiter Time	25 nm / 4.0 hr 300 nm / >1.0 hr
Maximum Payload	145 lbs (side, forward, down facing)
Maximum Cruise	> Mach 0.6
Maximum Launch Altitude	40K ft
Maximum Recovery Altitude	20K ft

Employment

Launch Quantity	1 to 4 air vehicles
Recovery Quantity	1 to 8 air vehicles (~7 minutes / vehicle)
Turn Time	< 24 hrs

Characteristics

Vehicle Dimensions	168 L x 22.5 W x 20.75 H
Wingspan	137 in (supercritical airfoil)
Gross Vehicle Weight	1500 lbs
Payload Power	1.2 kW
Flexible Payloads	Imaging electro-optical/infrared systems, imaging synthetic-aperture radar, laser designator, electronic warfare support/electronic attack, and kinetic

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