Annotated Machi

Avionics
Three onboard computers provide moment-by-moment flight adjustments, maintain a stable course, and will eventually ensure that the vehicle makes good decisions when flying in autonomous mode, a feature which is expected to be integrated into the production version.

Payloads
Using a detachable payload pod, Ares could quickly be outfitted for various roles, including troop carrier, cargo hauler, surveillance drone, and medevac pilot.

Ducted Fans
A pair of 8.5-foot-wide fans provide vertical lift and forward thrust.

LANDS LIKE A CHOPPER

Wingspan
With a compact 42-foot wingspan, Ares requires a 50-foot-wide landing zone, roughly half the space a helicopter needs.

A Drone for Dangerous Missions

As early as next year, the Department of Defense will test-fly an entirely new type of combat drone. The craft is called Ares, for Aerial Reconfigurable Embedded System, and it's designed to take off and land vertically. Unlike airplane-esque drones, which are cumbersome to launch and land, Ares could drop into a tight spot, unload supplies or rescue soldiers, and then zip up and away.

The remote-controlled prototype, now under construction by helicopter manufacturer Piasecki Aircraft and defense giant Lockheed Martin, relies on two massive, articulating ducted fans for lift and forward thrust in flight, much like the tilt-rotor Osprey used by the Marines. If all goes as planned, a fully autonomous production version is next, capable of carrying up to 3,000 pounds and forever changing the art of warfare.

CLAY DILLOW

Ares Combat Drone

Weight
about 7,000 lbs.
Payload
3,000 lbs.
Wingspan
42 feet
Range
250 nautical miles
Top speed
230 mph

Flight Controls
Lidar and other sensors will let Ares map its surroundings so it can see hazards and make its own decisions about how to take off, approach, and land.

Engines
Off-the-shelf helicopter engines, which supply up to 900 horsepower each, run the five-blade props inside each nacelle.

COURTESY LOCKHEED MARTIN(3)