The Pointer is a low-cost, hand-launched production-ready UAV designed for reconnaissance, surveillance, and remote monitoring. It has also been demonstrated in other applications, including air sampling for pollution monitoring, chemical weapons detection and unexploded ordnance detection.

The Pointer has been used to demonstrate the craft's ability to handle long-duration, high-altitude telecommunications relay services, harvest optimisation imaging and weather forecasting.

Dimensions length 3.6m, wingspan 3.6m
Performance endurance 14-16h, ceiling 80,201ft
Weight GTOW 315kg, max payload 67.5kg
Powerplant 8 brushless direct-current electric motors, 1.5kW each
Payload various scientific instruments, including imagers
Launch & recovery wheeled
Company information www.aerovironment.com

The Pathfinder is a solar-powered remotely piloted flying-wing aircraft that has been designed for long duration, high-altitude flights at airspeeds of only 13-22kt. Solar arrays covering most of the upper wing surface are used to provide power for the aircraft's electric motors.

Pathfinder was developed for a classified government programme in the 1960s. The aircraft became part of NASA's Environmental Research Aircraft and Sensor Technology (ERAST) programme in 1994. Four years later, the Pathfinder was modified into the longer-winged Pathfinder Plus configuration. This vehicle is powered by eight electric motors, two more than Pathfinder.

Pathfinder Plus has been used to demonstrate the craft's ability to handle long-duration, high-altitude telecommunications relay services, harvest optimisation imaging and weather forecasting.

AEROVIRONMENT (USA)

Exdrone UAV, a delta flying-wing. Capable of pre-programmed, autonomous flight, the Dragon Drone has a launch weight of 43kg and a 9kg payload capacity. Payloads for Dragon Drone include a camera, an EW jammer and a tactical remote sensor system.

A Dragon Drone system consists of 10 air vehicles, two GCSs and support equipment. Exdrone, for Expendable Drone, started out as a USMC EW asset, but was given a low-cost, expendable, reconnaissance capability. Exdrone and Dragon Drone are now being used for war games and military exercises.

AURORA FLIGHT SCIENCES (USA)

Perseus B
Perseus B is a unique UAV designed for HALE missions, such as telecommunications monitoring and collecting atmospheric samples. It is available as a testbed for sensors, payloads, and subsystems. The aircraft is powered by a three-stage turbocharged Rotax piston engine and is capable of flights to 65,000ft, with an endurance of 7h at 60,000ft. With external fuel tanks and engine upgrades, the Perseus B is capable of carrying a 80kg payload at an altitude of 55,000ft for up to four hours. The aircraft can be disassembled to fit within a 6m trailer for transport.

The third generation of the Perseus design, the Perseus proof-of-concept demonstrator and the Perseus A, all part of NASA’s ERAS project, preceded it.

Dimensions length 7.6m, height 3.5m, wingspan 21.8m
Performance endurance 8-24h, ceiling 20km
Weight GTOW 1,100kg
Powerplant Rotax 914 with three-stage turbocharger
Payload various scientific devices and instruments
Guidance & control GPS, C-band, Mode 3C transponder
Launch & recovery wheeled

BAE SYSTEMS (UK)

Phoenix
The first of 198 BAE Systems Phoenix UAVs entered service with the British Army in 1998, but the major procurement has not been without technical problems. Upgrades, including a more powerful engine, are already planned.

The Phoenix was procured to give the British Army a deep target spotting capability for artillery units. Development began in 1982 by GEC Marconi, but due to delays and technical issues, a production contract was not signed until 1996. The Phoenix saw its first combat deployment in 1998 over Kosovo, with mixed results.

Dimensions length 3.8m, wingspan 5.5m
Performance endurance 4h, ceiling 3,000m
Weight GTOW 209kg, max payload 52kg
Powerplant TTL WAE 342 19kW piston engine
Payload stabilised thermal imager, TV, IR line scan, radar, laser designator, EW
Guidance & control autonomous
Launch & recovery truck-mounted hydraulic catapult
Company information www.aurora.aero

BAI AEROSYSTEMS (USA)

BQM-147A Dragon Drone
The Dragon Drone is an upgrade to the BQM-147A Exdrone UAV, a delta flying-wing. Capable of pre-programmed, autonomous flight, the Dragon Drone has a launch weight of 43kg and a 9kg payload capacity. Payloads for Dragon Drone include a camera, an EW jammer and a tactical remote sensor system.

A Dragon Drone system consists of 10 air vehicles, two GCSs and support equipment. Exdrone, for Expendable Drone, started out as a USMC EW asset, but was given a low-cost, expendable, reconnaissance capability. Exdrone and Dragon Drone are now being used for war games and military exercises.