

Ejemplos de aeronaves existentes similares a las propuestas en los RFP 2007

UAV

Sergio Esteban

sesteban@us.es

Advanced Technologies and Engineering Co (Pty) Ltd (ATE).

■ Vulture

- **Production:** Production
- **Manufacturer Name:** Advanced Technologies and Engineering Co (Pty) Ltd (ATE)
- **Type:** Air
- **Country:** South Africa
- **MTOW:** 125 kg
- **Length:** 3.1 m
- **Wingspan:** 5.2 m
- **Height:** 0.7 m
- Empty Weight: 75 kg
- Payload Weight: 37 kg
- Speed: 97.2 kt
- Endurance: over 3 hr
- Ceiling: 5,000 m
- Mission Radius: 60 km

■ Info

- PayloadSens: near-infra-red optimised TV camera, laser rangefinder, FLIR, communications relay
- Data Link: radio command uplink, real-time video/data downlink
- Guidance: full autonomous pre-programmable mission (optional semi auto-matic capability using a navigator)
- Launch: automatic atmospheric catapult from vehicle-mounted rail (all-terrain deployment in 30 mins)
- Recovery: automatic using a parachute and airbag
- Material: composite carbon fibre (modular)
- Power Design: TTL-WAE 342
- Power Rate: 25
- Power Unit: hp
- Power Type: piston engine

- Advanced Technologies and Engineering Co (Pty) Ltd (ATE).
- <http://www.ate-aerospace-group.com/>





Shadow 200 TACTICAL OPERATIONS

- **Performance**
 - Endurance: 6-7 hours
 - Max Altitude: 19,000 ft. (4,827 m)
 - Max Dash Speed: 123 kts (228 kph)
 - Cruise Speed: 90 kts (166 kph)
 - Loiter Speed: 60 kts (110 kph)
 - Takeoff Distance (Launcher): 30 ft. (10 m)
- **Features**
 - All-Composite Construction
 - Combat-Proven Hardware
 - Rotary Engine with Excellent Performance
 - Multiple Payload Capability
 - Multiple Launch and Recovery Methods
 - Operates with MOGAS
 - Modular Design Enables Growth
- **Technical Data**
 - Length: 11.17 ft. (3.4 m)
 - Wingspan: 14 ft. (4.3 m)
 - Max Gross Weight: 375 lbs. (170.5 kg)
 - Payload capacity: 45 to 60 lb* (27 kg)
 - Data link range: 125 km
 - Engine: 38 bhp



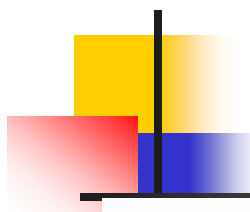
Shadow 400 SHIPBOARD OPERATIONS

- **Performance**
 - Endurance: 5 hours
 - Max Altitude: 12,000 ft. (3,660 m)
 - Max Dash Speed: 100 kts (185 kph)
 - Cruise Speed: 75 kts (139 kph)
 - Loiter Speed: 65 kts (120 kph)
- **Features**
 - All-Composite Construction
 - Multiple Launch and Recovery Methods
 - Shipboard Operations Qualified
 - Airborne Video Tape Recorder
 - Multiple Sensor Capability
 - Dual Redundant Data Links
 - Long-Life Emergency Battery
- **Technical Data**
 - Length: 12.54 ft. (3.82 m)
 - Wingspan: 16.80 ft. (5.1 m)
 - Max payload: 75 lb (34 kg)
 - Empty weight: 412 lb (147 kg)
 - Max gross weight: 465 lb (211 kg)



Shadow 600 SENHANCED TACTICAL OPERATIONS

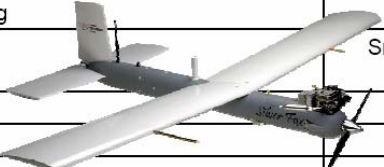
- **Performance**
 - Endurance: 12-14 hours
 - Max Altitude: 16,000 ft. (4,877 m)
 - Max Dash Speed: 108 kts (199.8 kph)
 - Cruise Speed: 80 kts (148 kph)
 - Loiter Speed: 65 kts (120 kph)
- **Features**
 - All-Composite Construction
 - Combat-Proven Hardware
 - Rotary Engine with Excellent Performance
 - Multiple Payload Capability
 - Multiple Launch and Recovery Methods
 - Airborne Video Tape Recorder
 - Long-Life Emergency Battery
- **Technical Data**
 - Length: 15.7 ft (4.79 m)
 - Wingspan: 22.40 ft (6.83 m)
 - Wing area: 40.41 sq ft (3.75 sq m)
 - Max payload: 91 lb (41.0 kg)
 - Max gross weight: 585 lb (265 kg)



Silver Fox Block B-3 Specifications



Parameter	Value (U.S.)	Value (Metric)
Maximum Gross Takeoff Weight (MGTW)	27 lbs	12.2 kg
Nominal Mission Takeoff Weight (NMTW)	26.2 lbs	11.88 kg
Nominal Mission Endurance (MOGAS)	8-10 hours	
Fuel Type	Unleaded MOGAS (87 Octane Minimum)	
Airspeed (Cruise @ NMTW)	38-50 kts	70-90 kph
Airspeed (Dash - Level Flight @ NMTW)	55 kts	102 kph
Airspeed (Max. Endurance @ NMTW)	35 kts	65 kph
Airspeed (Stall @ NMTW)	28 kts	52 kph
Airspeed (VNE @ NMTW)	110 kts	203 kph
Navigation	DGPS/GPS, DGPS/GPS/INS ¹	
Nominal Mission Altitude	500-1,200 feet AGL	150-365 meters AGL
Service Ceiling	12,000 feet MSL	3,657 meters MSL
Launch	Small Footprint Catapult (<75 lbs)	Small Footprint Catapult (<34 kg)
Recovery	Belly Skid	
Payload (EO)	Daylight RS-170A Standard, 10X Optical Zoom	
Payload (IR)	320x240, Uncooled IR	
Command and Control Radio (C2)	Up to 2 Watt, Discrete/Frequency Agile, Military Band / ISM Band Radio Modem (TX/RX)	
Command and Control Radio Range	20 nm, Line of Sight (LOS)	36 km, Line of Sight (LOS)
Video Transmitter	2 Watt (Optional 5W), S-Band FM Video TX With Optional 19.2 kbps Data Carrier	
Video Transmission Frequency Range	S-Band, L-Band	
Video System Range	20 nm, LOS	36 km, LOS
Payload Capacity	5 lbs	2.27 kg
Onboard Power	BA5590/5390 LiSO2 Battery	
Nominal Mission Fuel Capacity	90 ounces	2.6 liters
Engine	1-Cylinder (25cc), SOHC, 4-Stroke, Reciprocating Engine With Oiling System	
Ignition	Electronic, Capacitive Discharge	
Propulsion	17x8, Tractor Propeller	
Starting Method	Hand-Held Electric Starter (12V)	
Shipping Container Size	60" x 14" x 16" Composite Box with Wheels	1.52 m x 35 cm x 40 cm Composite Box with Wheels
Wingspan	94 inches	2.4 meters
Fuselage Length	58 inches	1.47 meters
Tail Height	11 inches	28 cm
Fuselage Diameter	5 inches	12.7 cm





Dragon Eye

- **Mission Descriptions** USMC Light Infantry, Dismounted Urban Warfare
- **Features** Fully Autonomous Operation, In-Flight Reprogramming, Small Size, Lightweight, Bungee-Launched, Waypoint Navigation, Laptop Mapping, Image Capture.
- **Payloads** Dual Forward- and Side-Look EO Camera Nose, Forward- and Side-Look Low Light Camera Nose and Side-Look IR Camera Nose.
- **Range** 5 km
- **Speed** 35 km/h
- **Operating Altitude (Typ.)** 100–500 ft AGL
- **Span** 3.75 ft (1.1 m)
- **Length** 3 ft (0.9 m)
- **Weight** 5.9 lb (2.7 kg)
- **Launch Method** Bungee-Launched
- **Recovery Method** Conventional Horizontal Landing



Raven

- **Mission Descriptions** Remote Reconnaissance and Surveillance, Target Acquisition, Force Protection and Convoy Security, Battle Damage Assessment, for Light Infantry, Dismounted Warfighter and Military Operations in Urban Terrain (MOUT).
- **Features** Simple Operation, Lightweight, Small Size, Hand-Launched, Autonomous Navigation, Autoland, Interoperable System Interface.
- **Range** 10 km
- **Payloads** Dual Forward- and Side-Look EO Camera Nose, Electronic Pan-tilt-zoom with Stabilization, Forward- and Side-Look IR Camera Nose (6.5 oz payloads).
- **Speed** 20 - 57 km/h, 17-50 knots
- **Operating Altitude (Typ.)** 100-500 ft (30-152 m) AGL, 14,000 ft MSL max launch altitude
- **Wing Span** 4.5 ft (1.4 m)
- **Length** 3.0 ft (0.9 m)
- **Weight** 4.2 lb (1.9 kg)
- **Launch Method** Hand-Launched
- **Recovery Method** Deep-Stall Vertical Landing





■ ScanEagle Specifications

- Max Takeoff Weight 37.9 lb / 18 kg
- Payload 13.2 lb / 6 kg
- Endurance 20+ hours
- Service Ceiling 16400 ft / 5000 m
- Max Level Speed 70 knots / 36 m/s
- Cruise Speed 49 knots / 25 m/s
- Wing Span 10.2 ft / 3.1 m
- Fuselage Diameter 7.0 in / 0.2 m
- Length 3.9 ft / 1.2 m
- Camera Range 100+ km

■ Insitu Integrator™ Specifications

■ Performance

- Max Horizontal Speed 90 knots / 46 m/s
- Cruise Speed 60 knots / 30 m/s
- Ceiling at MGTW 20,000 ft / 6000 m
- Endurance about 24 hours

■ Dimensions

- Wing Span 15.8 ft / 4.8 m
- Fuselage Cross Section
10 in x 10 in / 0.25 m x 0.25 m
- Length 7 ft / 2.1 m

■ Weights

- Empty Weight 55 lb / 25 Kg
- Maximum Payload 50 lb / 23 Kg
- Maximum Fuel 45 lb / 20 Kg
- Max Gross Takeoff Weight 125 lb / 57 Kg

■ System Features

- Propulsion: 8 horsepower advanced reciprocating engine
- Fuel - Auto gas / Heavy fuel
- Navigation - Differential GPS
- Launch - Pneumatic catapult, Insight™ compatible
- Recovery - SkyHook™ wingtip snag, Insight compatible

■ Insitu Insight™ Specifications

■ Performance

- Max Horizontal Speed 75 knots / 38.6 m/s
- Cruise Speed 48 knots / 25 m/s
- Ceiling 19,500 ft / 5944 m
- Endurance 20+ hours

■ Dimensions

- Wing Span 10.2 ft / 3.11 m
- Fuselage Diameter 7 in / 0.18 m
- Length 4 ft / 1.22 m

■ Weights

- Empty Structure Weight 26.5 lb / 12 Kg
- Fuel and Payload 12.4 lb / 6.58 Kg
- Max Fuel 12.1 lb / 5.5 Kg
- Max Takeoff Weight 44 lb / 20 Kg

■ GeoRanger Specifications

- Max Takeoff Weight 41.9 lb / 19 kg
- Payload 15.4 lb / 7 kg
- Endurance 15 hours
- Service Ceiling 16400 ft / 5000 m
- Max Level Speed 70 knots / 36 m/s
- Cruise Speed 49 knots / 25 m/s
- Wing Span 10.2 ft / 3.1 m
- Fuselage Diameter 7.0 in / 0.2 m
- Length 4.9 ft / 1.5 m



VIKING
100



VIKING
300



VIKING
400

FEATURES

- Fully Autonomous
- GPS Navigation
- Small System Footprint
- 30 lb Payload Capacity
- UHF, L-Band, S-Band, C-Band Data Link
- All Composite Construction

SPECIFICATIONS

- GTOW (fuel+max payload) - 318 lbs
- Empty Weight - 210 lbs
- Wing Span - 17.5 ft
- Length - 13.5 ft
- Power Plant - Two Stroke Twin Engine 25 HP

PERFORMANCE DATA

- Endurance - 8-10 Hours
- Cruise Speed - 56 kts
- Dash Speed - 08 kts
- Launch - Conventional or Pneumatic Launcher
- Recovery - Conventional or Optional Parafoil

Electrical System

- On-board 500W alternator with rechargeable batteries that provide power for the air vehicle and payload.

FEATURES

- Fully Autonomous
- GPS Navigation
- Small System Footprint
- 60 lb Payload Capacity
- UHF, L-Band, S-Band, C-Band Data Link
- All Composite Construction

SPECIFICATIONS

- GTOW (fuel+max payload) - 493 lbs
- Empty Weight - 265 lbs
- Wing Span - 20 ft
- Length - 14.7 ft
- Power Plant - Two Stroke Engine 34 HP

PERFORMANCE DATA

- Endurance - 10-12 Hours
- Cruise Speed - 56 kts
- Dash Speed - 78 kts
- Launch - Conventional or Pneumatic Launcher
- Recovery - Conventional or Optional Parafoil

Electrical System

- On-board 500W alternator with rechargeable batteries that provide power for the air vehicle and payload.

FEATURES

- Fully Autonomous
- GPS Navigation
- Small System Footprint
- 20 lb Payload Capacity
- UHF, L-Band, S-Band, C-Band Data Link
- All Composite Construction

SPECIFICATIONS

- GTOW (fuel+max payload) - 150 lbs
- Empty Weight - 105 lbs
- Wing Span - 12 ft
- Length - 8 ft
- Power Plant - Two Stroke Engine 16 HP

PERFORMANCE DATA

- Endurance - 6-8 Hours
- Cruise Speed - 50 kts
- Dash Speed - 75 kts
- Launch - Conventional or Pneumatic Launcher
- Recovery - Conventional or Optional Parafoil

Electrical System

- On-board 500W alternator with rechargeable batteries that provide power for the air vehicle and payload.

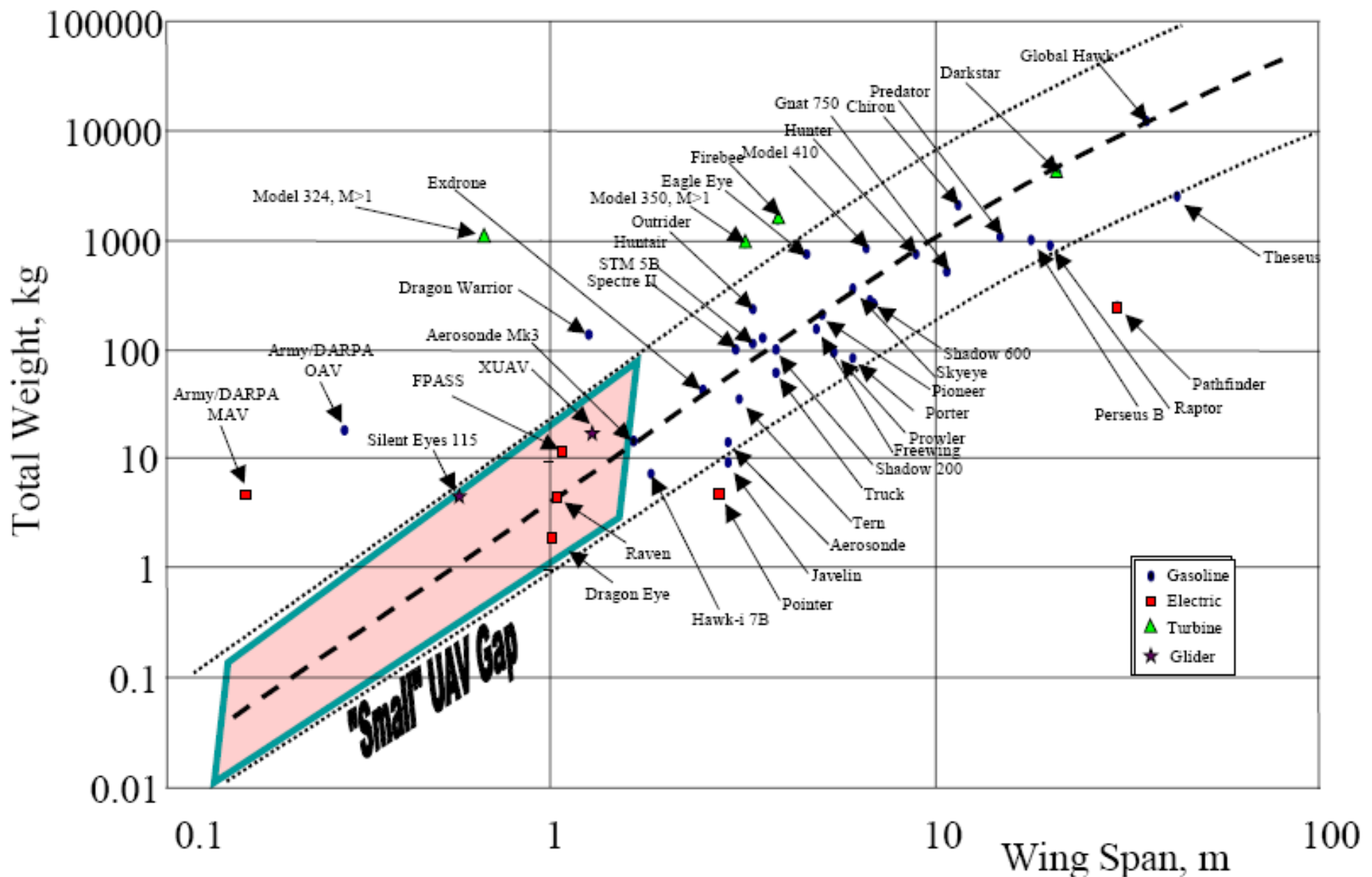


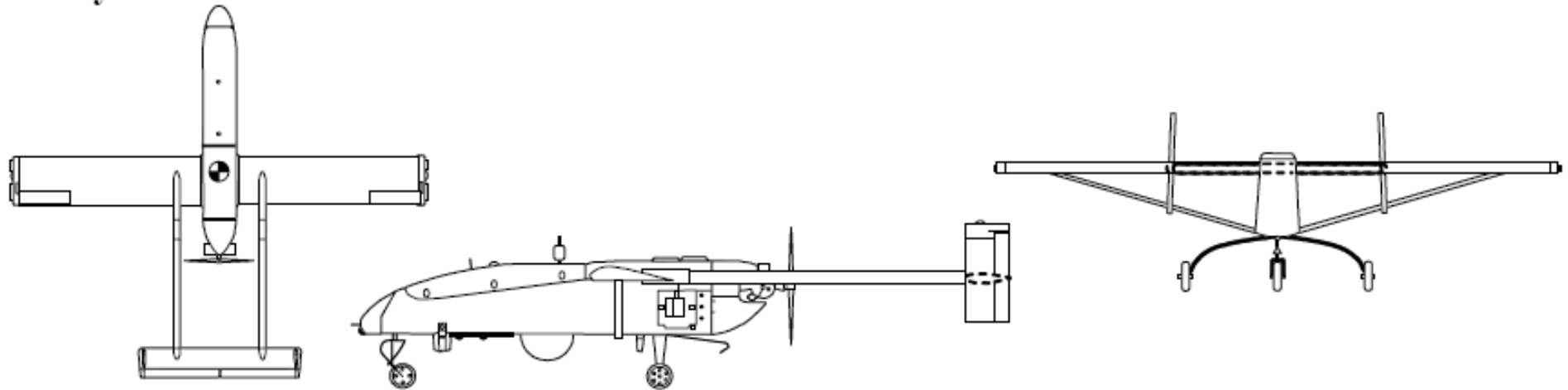
FIGURE E-1: UAV WINGSPAN VS. WEIGHT.

RQ-2B Pioneer

User Service: Marine Corps

Manufacturer: Pioneer UAV, Inc.

Inventory: 175 Delivered/35 In-Service



Characteristics:

	RQ-2B		RQ-2B
Length	14 ft	Wing Span	17 ft
Gross Weight	452 lb	Payload Capacity	75 lb
Fuel Capacity	76 lb	Fuel Type	AVGAS
Engine Make	Sachs SF 350	Power	26 hp
Data Link(s)	LOS C2	Frequency	C-band UHF

Performance:

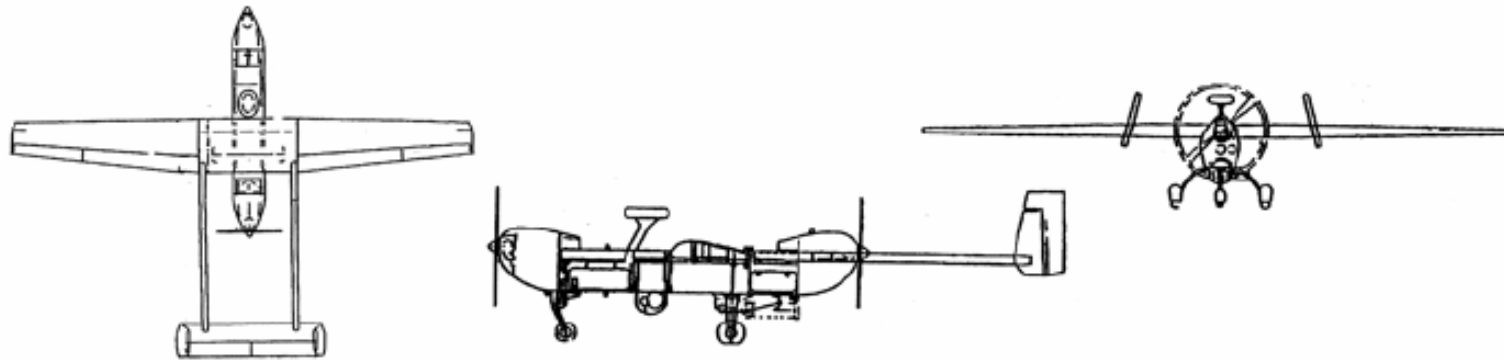
Endurance	5 hr	Max/Loiter Speeds	110/65 kt
Ceiling	15,000 ft	Radius	100 nm
Takeoff Means	RATO/Runway/ Pneumatic Launch	Landing Means	Net/Runway with Arresting Gear
Sensor	EO/IR	Sensor Make	Tamam POP 200

RQ-5A/MQ-5B Hunter

User Service: Army

Manufacturer: Northrop Grumman

Inventory: 62 Delivered/35 In-Service



Characteristics:

	RQ-5A	MQ-5B		RQ-5A	MQ-5B
Length	22.6 ft	23 ft	Wing Span	29.2 ft	34.25 ft
Gross Weight	1,620 lb	1,800 lb	Payload Capacity	200 lb	200 lb
Fuel Capacity	Moto Guzzi 421 lb HFE 280 lb	Moto Guzzi 421 lb HFE 280 lb	Fuel Type	MOGAS	JP-8
Engine Make	Moto Guzzi (x2)	Moto Guzzi (x2) Mercedez HFE (x2)	Power	57 hp (x2)	57 hp (x2) 56 hp (x2)
Data Link	LOS	LOS	Frequency	C-band	C-band

Performance:

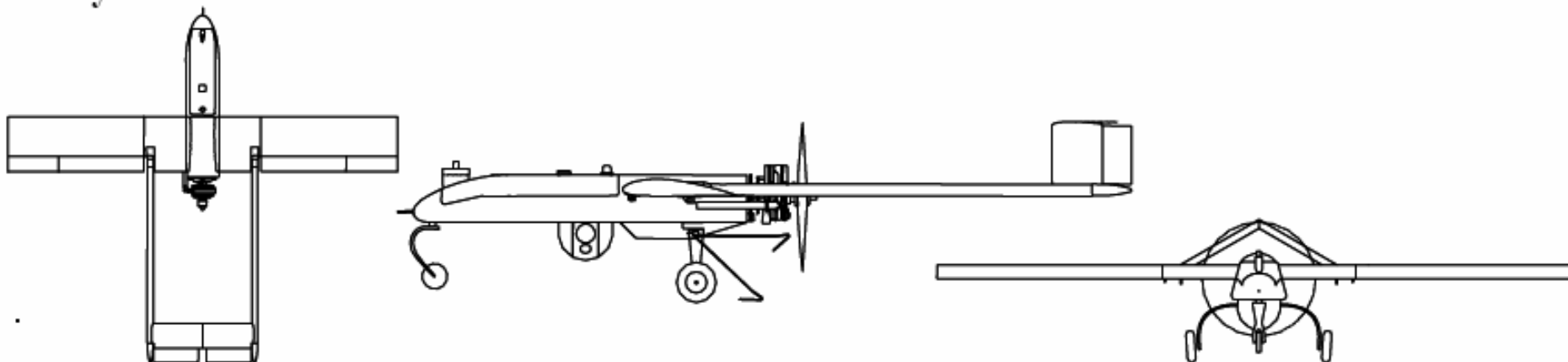
Endurance	11.6 hr	18 hr	Max/Loiter Speeds	106/89 kt	106/89 kt
Ceiling	15,000 ft	18,000 ft	Radius	144 nm	144 nm
Takeoff Means	Runway	Runway	Landing Means	Runway/Wire	Runway/Wire
Sensor	EO/IR	EO/IR	Sensor Make	Tamam MOSP	Tamam MOSP

User Service: Army

Manufacturer: AAI

Inventory: 100 + Delivered/332 Planned

RQ-7A/B Shadow 200



Characteristics:

	RQ-7A	RQ-7B		RQ-7A	RQ-7B
Length	11.2 ft	11.2 ft	Wing Span	12.8 ft	14 ft
Gross Weight	327 lb	375 lb	Payload Capacity	60 lb	60 lb
Fuel Capacity	51 lb	73 lb	Fuel Type	MOGAS	MOGAS
Engine Make	UEL AR-741	UEL AR-741	Power	38 hp	38 hp
Data Link(s)	LOS C2	LOS C2	Frequency	S-band UHF	S-band UHF
	LOS Video	LOS Video		C-band	C-band

Performance:

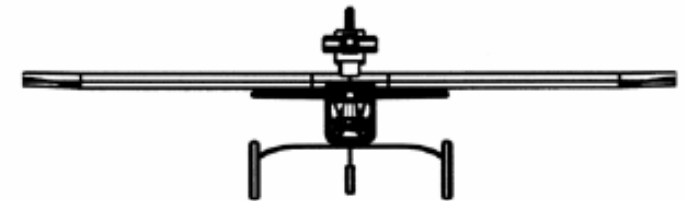
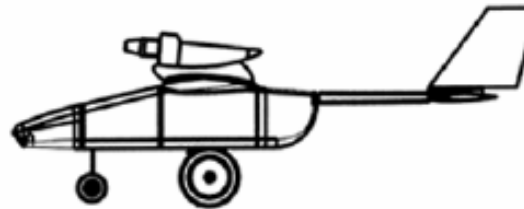
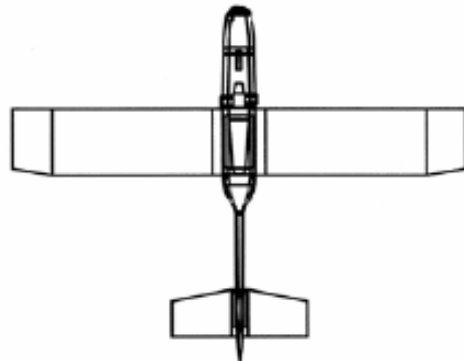
Endurance	5 hr	7 hr	Max/Loiter Speeds	110/70 kt	105/60 kt
Ceiling	14,000 ft	15,000 ft	Radius	68 nm	68 nm
Takeoff Means	Catapult	Catapult	Landing Means	Arresting Wire	Arresting Wire
Sensor	EO/IR	EO/IR	Sensor Make	Tamam POP 200	Tamam POP 300

XPV-1 Tern

User Service: SOCOM

Manufacturer: BAI Aerosystems

Inventory: 65 Delivered/65 Planned



	XPV-1		XPV-1
Length	9.0 ft	Wing Span	11.4 ft
Gross Weight	130 lb	Payload Capacity	25 lb
Fuel Capacity	28 lb	Fuel Type	MOGAS/oil
Engine Make	3W 100 cc	Power	12 hp
Data Link(s)	LOS C2	Frequency	L/S-band
	LOS Video		UHF

Performance:

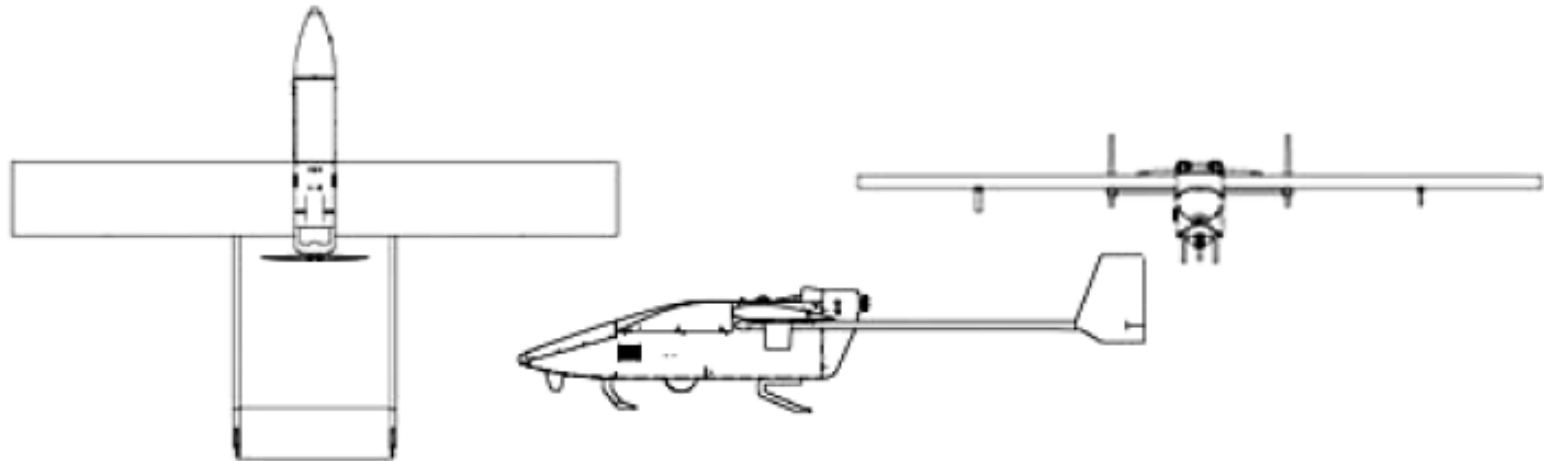
Endurance	2 hr	Max/Loiter Speeds	87/50 kt
Ceiling	10,000 ft	Radius	40 nm
Takeoff Means	Runway	Landing Means	Runway
Sensor	EO or IR	Sensor Make	BAI PTZ

XPV-2 Mako

User Service: SOCOM

Manufacturer: NAVMAR Applied Sciences Corporation/BAI Aerosystems

Inventory: 30 Delivered/30 Planned



Characteristics:

	XPV-2		XPV-2
Length	9.11 ft	Wing Span	12.8 ft
Gross Weight	130 lb	Payload Capacity	30 lb
Fuel Capacity	5 gal	Fuel Type	MOGAS/oil
Engine Make	3W 100cc	Power	9.5 hp
Data Link(s)	C2	Frequency	VHF/UHF
	Video		L-band Video Downlink

Performance:

Endurance	8.5 hr	Max/Loiter Speeds	75/50 kt
Ceiling	10,000' MSL	Radius	40 NM
Takeoff Means	Runway	Landing Means	Runway
Sensor	EO/IR	Sensor Make	BAI

	Dragon Eye	FPASS	Pointer	Raven	BUSTER
Manufacturer	AeroVironment	Lockheed Martin	AeroVironment	AeroVironment	Mission Technologies, Inc.
User Service	Marine Corps	Air Force	SOCOM, AF	Army, SOCOM, AF	Night Vision Labs, US Army
Weight	4.5 lb	7 lb	8.3 lb	4 lb	10 lb
Length	2.4 ft	2.7 ft	6 ft	3.4 ft	41 inches
Wingspan	3.8 ft	4.3 ft	9 ft	4.3 ft	49.5 inches
Payload Capacity	1 lb	1 lb	1 lb	2 lb	3.0 lb
Engine Type	Battery	Battery	Battery	Battery	Gasoline/JP-5&JP-8
Ceiling	1,000 ft	1,000 ft	1,000 ft	1,000 ft	10,000 ft
Radius	2.5 nm	6 nm	6 nm	6 nm	10 km
Endurance	45-60 min	1 hr	2 hr	1.5 hr	4 + hr
Number Planned	467 systems*	21 systems	50 systems	300+ systems	9 systems
Number of UA/System	3	6	2	3	4

* Does not include 4 Dragon Eye, 6 Swift, and 15 Evolution systems (58 UA total) for SOCOM.



Dragon Eye

Pointer



BUSTER



FPASS



Raven

	Silver Fox	ScanEagle	Aerosonde	BATCAM
Manufacturer	Advanced Ceramics	Insitu Group/Boeing	Aerosonde/Lockheed Martin	ARA
User Service	Navy	Marine Corps	Navy	SOCOM
Weight	20 lb	39.6 lb	33 lb	0.84 lb
Length	4.8 ft	3.9 ft	5.7 ft	24 in
Wingspan	7.8 ft	10 ft	9.4 ft	21 in
Payload Capacity	5 lb	5-7 lb	12 lb	0.09 lb
Engine Type	Diesel/Gasoline	Gasoline	Gasoline	Battery
Ceiling	16,000 ft	19,000 ft	20,000 ft	1,000 ft
Radius	20 nm	60 nm	1,000 nm	1.6 nm
Endurance	10 hr	20 hr	30 hr	18 min
Number Planned	20-30 systems	2 systems (lease)	1 system	23 systems
Number UA/System	3	8	5-8	2



Silver Fox



BATCAM



ScanEagle



Aerosonde