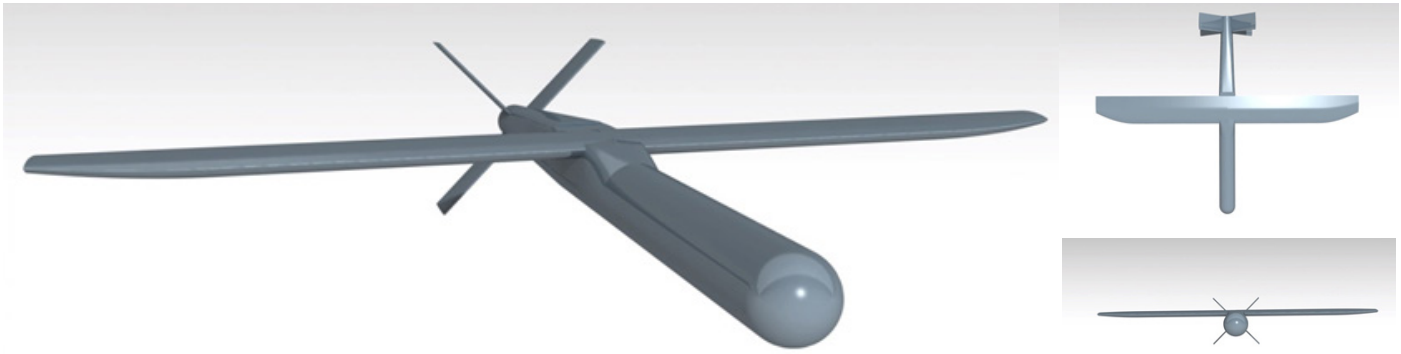
DEVELOPMENT



RAVEN 145

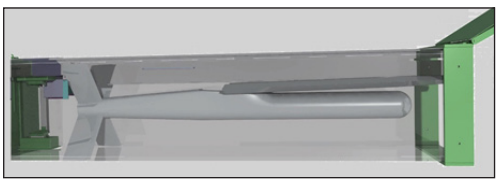
Loitering area denial weapon

This loitering area denial weapon represents a low cost and long range surveillance/strike weapon intended for real time surveillance and strike on a wide range of targets beyond the forward edge of battle area. Intended use: destruction of tanks and other armored vehicles, command posts, artillery fire positions, live force, and other moving or stationary targets, patrol boats and drones.

• Range	150+ km at 150 km/h (44 m/s)	
• Max. flying height (ceiling)	2000 m	
• Initial mass	50 kg, loaded (35 kg, unloaded)	
• Load/Workload, mass	15 kg	
• Drive	Launching powered by a solid rocket fuel (booster) motor;	
	Flight powered by a flat-twin motor (two cylinder gasoline motor)	
• Drone dimensions	Length	2.2 m
	Wing span	2.4 m
	Height, with booster	0.4 m
• Launcher	Truck FAP 2028	
	Number of containers	21-27
	Launching angle 45°	
• Control station	Truck mounted (FAP), with 2 or 3 guidance consoles in an air-conditioned cabin	
• Portable control station	2 x 25 kg	

Launching from a container, propelled by a solid fuel booster motor.
Transport and packing: It can be transported to a battle position when fully armed and with full tank. Wings are foldable.
During launching, gasoline motor starts up at the exit from the launching container.

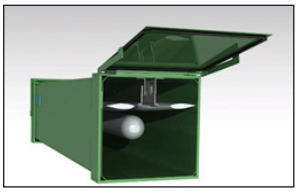
• Preparation at battle position:	3 min. for moving into position and elevation
	30 sec. for launching from each individual container
• Number of simultaneous TV links	3
• Number of drones in the air at a time	12 (3 video channels are followed simultaneously, at operator's choice)
• Guidance/navigation system	Inertial, GPS, GLONAS, terminally guided TV/IIR homing head
• Approach angle	15° to 75° (Top Attack)



Drone 145 mm, containerized

Control station with antenna system

Launcher vehicle with 24 containers



Drone 145 mm, containerized

Environmental requirements:

1. Operating temperature range from -20°C to 65°C
2. Sand, dust, and water-proofed
3. Resistant to vibrations, shocks, and transport vibrations
4. Resistant to fungi, salt mist
5. Resistant to spraying water, rain
6. Resistant to sun exposure, UV radiation

DRONE – Versions

	Reconnaissance drone, with gasoline motor	Drone with Electric motor	Drone with Gasoline motor	Drone 200 or 150 mm in diameter, with gasoline motor	Anti-drone drone, with gasoline motor	Drone with Turbo jet motor
Range	300	40	150	150	50	50
Speed (km/h)	150	160	150	140+	150	500+ (140 m/sec)
Time of flight (TOF) (min)	180	30	180	80	180	10
HH	TV	TV/IIRN	TV/IIRN	TV/IIRN	TV	TV/IIRN
Precusor	-	50 mm	50 mm	-		-
EO	Autopilot & control unit	Autopilot & control unit	Autopilot & control unit	Autopilot & control unit	Autopilot & control unit	Autopilot & control unit
Range of radio link with antenna (km)	150	50	150	150		50
Battery	+	+	+	+	+	+
WH	-	Tandem 145/50	Tandem 145/50	Combined 175, or fragmented 130	Non-guided rockets, with fragmented WH	175, or 130, or tandem 145/50
Wings and control surfaces/fins	Composite	Composite	Composite	Composite	Composite	Composite
Control section, with rudders	4 rudders, with 4 electric motors	4 rudders, with 4 electric motors	4 rudders, with 4 electric motors	4 rudders, with 4 electric motors	4 rudders, with 4 electric motors	4 rudders, with 4 electric motors
Driving/booster motor	Flat-twin (boxer) motor, 170 ccm, 15 hp	Brushless electric motor, 6 KW	Flat-twin (boxer) motor, 170 ccm, 15 hp	Flat-twin (boxer) motor, 170 ccm, 15 hp	Flat-twin (boxer) motor, 170 ccm, 15 hp	Kerosene
Parashute	+	-	-	-	+	-

Main parts of the system

1. Drone
   - a. Homing Head (optional , 1 of 2 types)
     - i. TV HH
     - ii. IIR HH
   - b. War Head (optional , 1 of 4 types)
     - i. Combined (blast & fragmented), with steel balls, 130 mm
     - ii. Combined (blast & fragmented), with steel balls, 122 mm
     - iii. Anti-tank, tandem shape charged wh, 145 mm
       1. Precusor, 50 mm
       2. Main charge, 145 mm
       3. 2 Fuzes
     - iv. Combined (shape charged & fragmentation wh, with steel balls)
   - c. Auto-pilot section
   - d. Control section
   - e. Radio link
   - f. Wings with demounting mechanism.
   - g. Fuselage
   - h. Booster motor
2. Container
3. Launcher
   - a. Vehicle FAP 2028 or similar.
   - b. Hydraulic elevation mechanism
   - c. Elevation platform
4. Ground Control Station
   - a. Inside the cabin, with 2-phase antenna, range 200 km
     - i. Cabin
     - ii. Consoles (3 pcs, each having 2 monitors), antennas,
   - b. Portable, with 50 km range antenna for local control of 1 UAV
5. Power generator and an UPS

Warheads

Combined (blast & fragmented), with steel balls, 130mm, total mass 10.5 kg

Combined (blast & fragmented), with steel balls, 122 mm, total mass 13 kg

Anti-tank, tandem shape charged, 145 mm, total mass 6.4 kg

The drone can be equipped with either a combined (blast & fragmented) warhead, 175 mm, the total weight is 13 kg, or another type warhead the total mass of which does not exceed 13 kg.

HH – Homing Heads

TV/IIR HH 200 mm

TV/IIR HH 175 mm

TV/IIR HH 145 mm

GCS - Ground Control Station

Ground control station (GCS) is used for launching, entering the flight profile data, guidance/control of the drone and the TV/IIR homing head.

GCS can be installed in/mounted on:

1. Vehicle mounted container, including
   a. 3 consoles, each having 2 monitors
   b. UPS units
   c. Power generator, to supply operation of the equipment and an a/c unit
2. Trailer mounted container
3. Portable/carry-on box, for on-site
   a. Two members of the crew carry 25 kg packages each, including the station, the antenna, and the battery

Radio / Antenna
Phased array antenna
TV Link: Analog frequency hopping szstem
Data Link: Frequency hopping spread spectrum (FHSS), with encription.

Shown in the figure are two console stations that can be placed inside a vehicle or in a schelter mounted on a trailer.

YUGOIMPORT SDPR J.P.

Should you have any further enquires, please do not hesitate to contact us at **fdsp@eunet.rs**