

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 50 km
- Speed 160 km/h
- Time of flight 30 min
- Homing head TV/IIRN
- Precursor 50 mm
- EO Autopilot & control unit
- Range of radio link with antenna 50 km
- Battery yes
- WH Tandem 145/50
- Wings and control surfaces/fins Composite
- Launcher 4x4 or 6x6
- Number of containers 18-27
- Launching angle 45°
- Control station Armored vehicle 4x4, with 2 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.

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 |
| Precursor | - | 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 |

Environmental requirements:

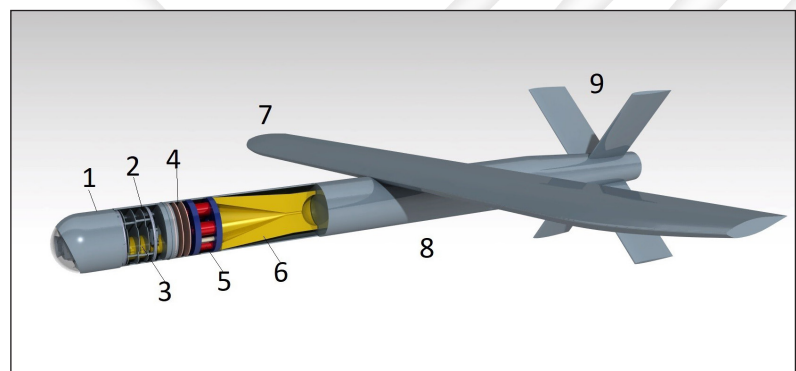
1. Operating temperature range from -20°C to 65°C
2. Sand, dust, and water-proofed
3. Resistant to vibrations, shocks, and transport vibrations
4. Resistant to fungi, salt mist
5. Resistant to spraying water, rain
6. Resistant to sun exposure, UV radiation

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. Precursor, 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

Raven composition (with tandem warhead):

1. Homing head
2. Homing head electronic
3. Front heat warhead
4. Autopilot
5. Battery block
6. Heat warhead
7. Wings
8. Fuselage with petrol reservoir
9. Wings with control surfaces



RAVEN COMPOSITION

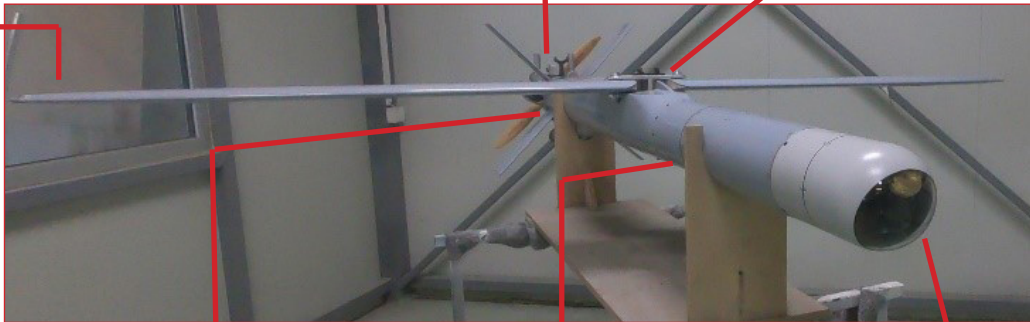
Wings



Engine



Bodies



Booster



WH



HH

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 Head



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. 2 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 system
Data Link: Frequency hopping spread spectrum (FHSS), with encryption.

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