

BATMAV is the name of the system; WASP III is the AV name

1 BATMAV SYSTEM DESCRIPTION

1.1 Introduction

The Battlefield Air Targeting Micro Aerial Vehicle (BATMAV) is a hand-launched reconnaissance and surveillance tool. The Wasp Air Vehicle transmits live airborne video images and location information to a Ground Control Station (GCS). This capability enables operators to navigate, search for targets, recognize terrain, and record all information for analysis. BATMAV provides operational capability in the following areas:

- Remote reconnaissance and surveillance.
- Force protection.
- Convoy security.
- Target acquisition.
- Battle damage assessment.

This operators manual provides technical information and guidance for assembly, operation, maintenance, and field repair.

1.2 System Specifications

The Wasp Air Vehicle can be launched and recovered in minutes without special equipment on unprepared terrain. The system employs a self-stabilizing configuration with stability augmentation and provides ease of control and steady video imagery. Air and ground components are lightweight and easily configured for back-pack transport. The Wasp Air Vehicle is battery-powered and has extremely low visual, acoustic, and thermal signatures. The optics package includes two integrated Electro-Optical (EO) color cameras (front- and side-look) and a removable payload with either front- and side-look Pan, Tilt, Zoom (PTZ) EO color cameras for day operations, or an infrared (IR) camera (front- or side-look, zoom) for night operations. The Wasp Air Vehicle flies for 45 minutes on a rechargeable Lithium Ion (Li-Ion) battery pack. The BATMAV system is typically operated by a Vehicle Operator (VO).

Table 1-1 System Components

Quantity	Description
2	Air Vehicle with EO cameras
1	GCS (Hub Unit, RF Unit, Cable, and Antenna)
1	Universal Battery Charger
2	GCS Battery
1	Joystick
1	EO/IR Payload Set with Plate
2	Mast
1	Field Repair Kit (FRK)
1	Spares Kit
2	Air Vehicle Flight Log
1	Operator Manual

1.3 Air Vehicle

The Wasp Air Vehicle is assembled from four components in under a minute. It is broken down for storage and transport into a single case measuring 17" x 12" x 3". The loaded case weighs approx. 2 lb. and holds one Air Vehicle and spare parts. The assembled Wasp Air Vehicle is shown in Figure 1-1.



Figure 1-1 Wasp Air Vehicle

The Wasp Air Vehicle's characteristics are listed in Table 1-2. System limitations are shown in Table 1-3.

Table 1-2 Air Vehicle Characteristics

Parameter	Characteristic
Wingspan	28.5 in.
Length	9.3 in.
Weight	Approx. 16 oz. (450 g.)
Normal Operating Altitude	150 to 500 ft. AGL
Nominal Low Altitude	75 ft. AGL
Speed	20 - 40 mph (10-18 mps, 600-1080 mpm)*
Range	3 - 5 km Line of Sight (LOS)
Endurance	45 min.
Climb Rate	500 ft./min. at 100 ft. MSL
Turn Rate	360 deg. in 20 sec.
Motor	Direct drive electric
Air Vehicle Batteries	Li-Ion (rechargeable)
Launch Method	Hand-launched
Landing	Manual glide or autonomous landing
Navigation	C-code GPS and electronic compass
Flight Control	Manual or autonomous
* mps = meters per second, mpm = meters per minute	

Table 1-3 System Limitations

Parameter	Characteristic
Wind Speed	<ul style="list-style-type: none"> • Minimum: No restrictions • Maximum: 15 knots <p>The Wasp Air Vehicle can be operated in winds higher than 15 knots, but will have reduced mission capability and higher risk of damage during launch, landing and recovery.</p>
Rain	Maximum: 0.15 inch per hour, except for Battery Charger, which should not be operated in rain.