Rover UAV DESCRIPTION OF AIRCRAFT SYSTEM

Summary: The Rover UAV is an electric powered, small UAV (wingspan=72") manufactured by Integrated Dynamics and is used for aerial surveillance. It is typically flown by manual radio control but may be fitted with the Piccolo II autopilot by CloudCap Technologies for autonomous operation. The data sheet is included for reference but the specifications below are based on actual test flight at U.S. Army Redstone Arsenal.

Description:

Wingspan:	72 in.
Length:	54 in.
Height:	12 in.
Wing Area:	860 sq.in.
Empty Weight:	5.5 lb (w/o Batteries)
Max Take off weight:	11.0 lb
Propulsion:	Electric motor (Axi 2826/12 brushless)
Motor Battery:	Li-Polymer battery (4cell-5000 mAh)
Controls:	Aileron, elevator, rudder, throttle
Speed Range:	20 – 60 mph
Range:	4 miles
Endurance:	15 min. nominal
Recovery:	belly landing
Tracking &Telemetry:	Eagle Tree "Sea Gull" telemetry with map display; or Piccolo II autopilot telemetry
Ground Station:	Laptop PC w/Eagle Tree or Piccolo map/telemetry display
Payload Capacity:	2.2 lb
Typical Payload:	Daylight TV camera

(Please also see manufacturer's information sheet which follows)

Earlier Flight Test Results:

In early March 2011, GTRI was requested to perform preliminary evaluation on the Rover UAV. After completion of a two-day training program, Rover was flown and GTRI pilots trained. Nine (9) test flights were performed at Range TA-3 on the U.S. Army Redstone Arsenal, Huntsville, Alabama. These tests proved the Rover UAV to be stable in flight and safe to operate. It has moderate wing-loading which proves helpful in windy conditions. NO incidents occurred during testing. GTRI pilots practiced flying the Rover UAV for two days and rapidly achieved proficiency. This testing also provided an opportunity for GTRI to develop a Pre-Flight Checklist, Safety Procedures, and familiarity with maintaining the system, that will prove valuable if/when a COA is approved for operation in NAS. Photos of the Rover UAV, taken during manufacturer's training and during flight test at range TA-3 are included in the following pages.

Figure 1. GTRI Personnel and Rover UAV during training program

Figure 2. Rover ready for launch

Figure 3. Rover being launched

Figure 4. Rover UAV landing

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