



June 3, 2013



Meeting Agenda

- Welcome-Visitors and Members
 - Introductions
- Recognition
 - Hellbender!
- Calendar/Event Items/ Announcements-
 - ARRL Convention
 - Field Day
 - Test Session
 - Calendar for 2013
- Tech Talk- Drone Ranger- KD0JLM
- New Business-
- Next Meeting- July 1



Announcements

Hellbender June 3



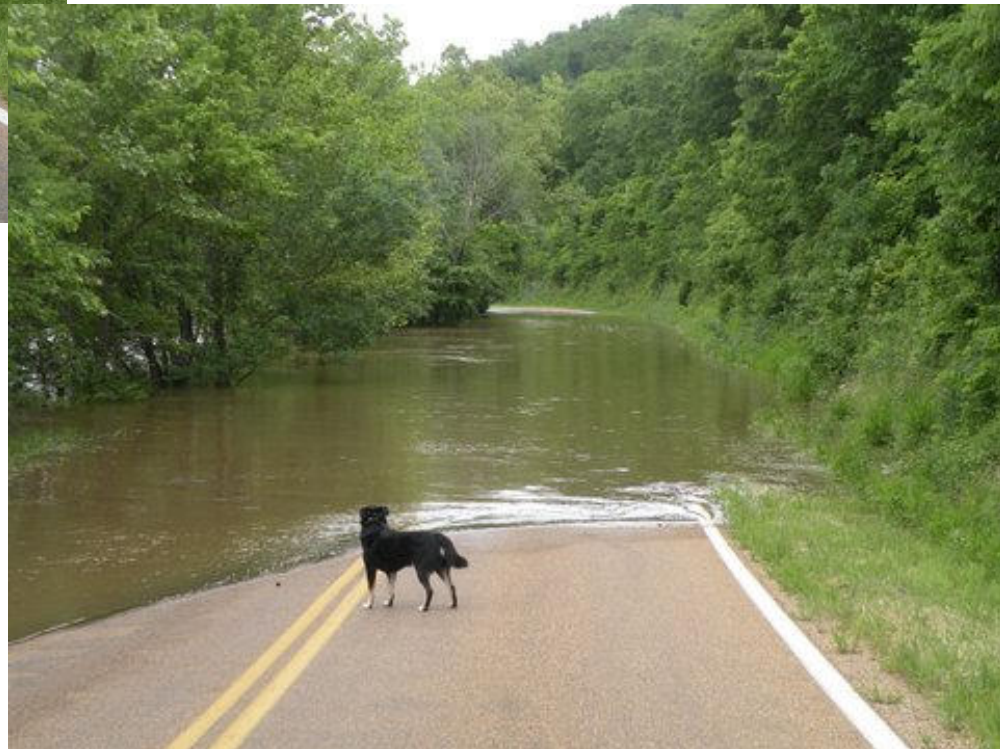


Hellbender





Hellbender





Hellbender





Hellbender





Hellbender



Holden and Shawn KD0DMJ- Checkpoint Echo



Hellbender

Antenna



Net Control- KD0OWE, N6RHQ, KD0JNI



Hellbender



Net Control- KD0OWE and KD0JNI



Hellbender

THANKS!!!



- Shawn, KD0DMJ and Holden- checkpoint Echo
- Rosa, KD0GLO- checkpoint Delta
- Gary, KF0TW- King of the Mountain
- Ann, KD0JNI- Finish Line
- Russell, KD0OWE- Medic Mobile
- Peter, N0XZN- checkpoint Foxtrot aka “Waterworld”
- Mike, KD0TEA- checkpoint Hotel
- Louis, AI0LM (on deck sweeper)
- Steve, N6RHQ- Net Control



Announcements

FIELD DAY is June 22, 23

- Lion's Club Park
- Station Stewards
 - Digi- K0OG
 - SSB- KD0OWE
 - CW- KF0XQ
 - PIO- KB9ZBO
 - BBQ- KD0JNI

PIO= public
information officer





Announcements

FIELD DAY is June 22, 23

- Test Session
- Saturday, June 22
- 3:00 PM
- Contact K0OG





Announcements

Midwest ARRL Convention Nov 8,9



2013 ARRL Midwest Convention



November 8 & 9, 2013



Update from Joe K0OG.....

Its going to be big!



Calendar/ Events 2013 RADAR



Jun 22-23 Field Day

Sep 7-15 Route 66 On The Air

Saint to Saint? (Robert to James)

Nov 2nd- OT100

8th- ARRL Midwest Convention, Lebanon, MO!



Tech Talk- Drone Ranger



With
Jeff,
KD0JLM

DJI PHANTOM

R/C Quadrotor Aircraft



WHAT IS IT?

- ▶ Radio Controlled, 2.4 GHz
- ▶ 12 channel GPS
- ▶ IMU – Inertia Measurement Unit
 - ▶ Digital compass
 - ▶ Gyroscope
 - ▶ Digital barometer (altitude)
 - ▶ Accelerometer
- ▶ ESC – Electronic Speed Control
 - ▶ Microprocessor controlled
- ▶ 4 Rotors
 - ▶ 2 rotating CW, 2 rotating CCW
 - ▶ Take-off weight < 1 kg.



PERFORMANCE SPECS

- ▶ Maximum Flight Velocity
10 m/sec, (22 mph)
- ▶ Maximum Ascent/Descent
Speed: 6 m/sec.
- ▶ Flight ceiling: FAA limited to
400 feet, actual TBD
- ▶ Transmitter Range, 300
meters (1,000 yards)
- ▶ Flight Time: 8 to 12 minutes
on 2200 mAH LiPo battery
- ▶ GPS Features: Stabilization,
course lock, home lock, RTH



AIRCRAFT FEEDBACK

- ▶ Large visible LED uses red, green, and yellow signals to indicate IMU status, GPS satellite lock, flight mode, compass calibration, and battery condition.
- ▶ Under-rotor LEDs to indicate front and rear sections of aircraft (two red in front, two green in rear).



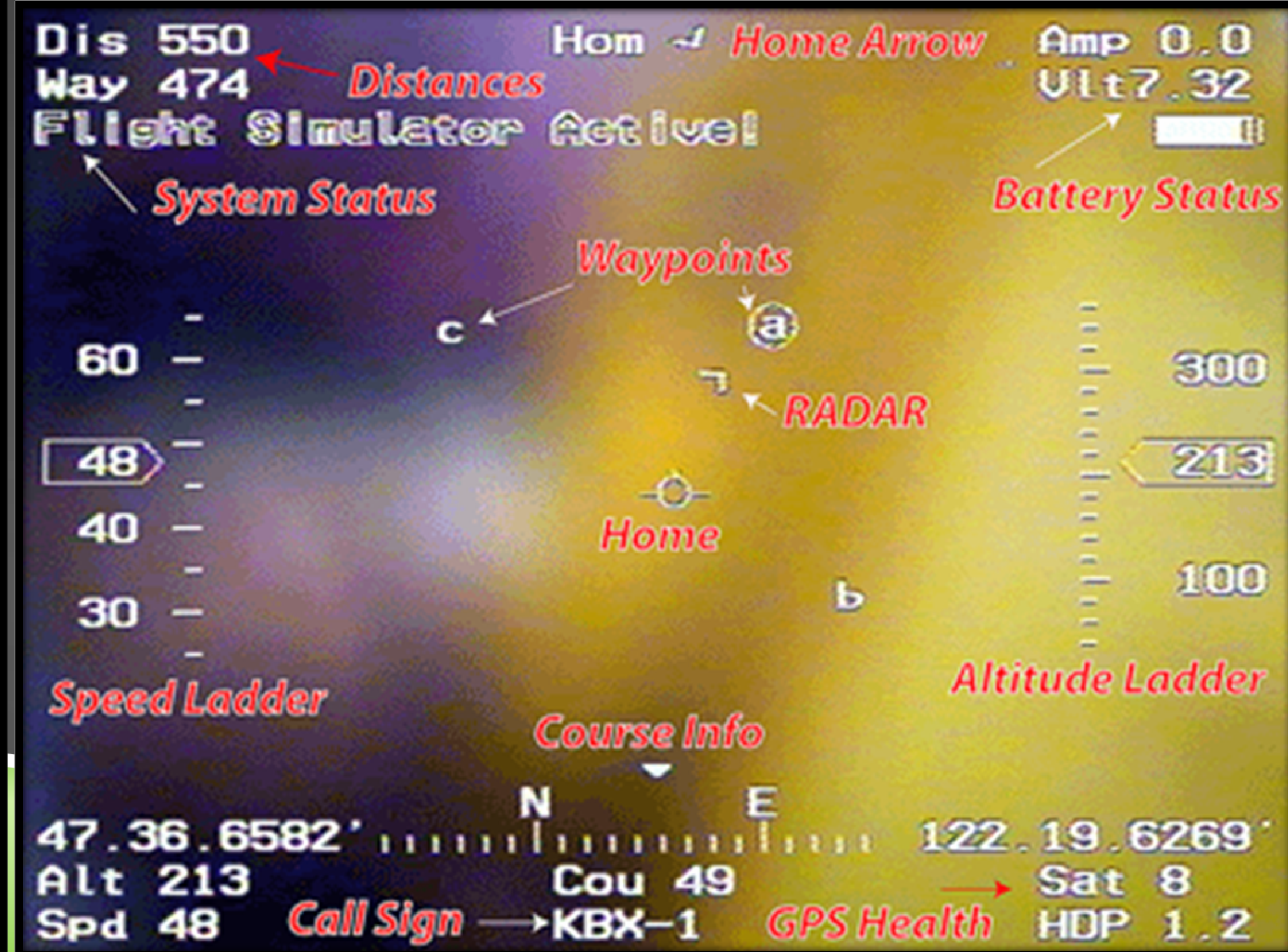
INCLUDED SOFTWARE

- ▶ NAZA-M software downloadable for registered users
- ▶ GPS feature settings for failsafe, RTH
- ▶ Gyroscope, accelerometer, and digital compass calibration
- ▶ Channel gain for pitch, roll, yaw, vertical
- ▶ Motor control
- ▶ Firmware upgrades

ACCESSORIES

- ▶ Tuned high-efficiency props
- ▶ Propeller balancers
- ▶ Camera gimbals
- ▶ Still and video cameras (GoPro mount included)
- ▶ FPV (First Person View) live video downlink systems
- ▶ OSD (On Screen Display) flight, aircraft, and GPS info on FPV
- ▶ Ground station equipment
- ▶ Autopilot waypoint GPS navigation systems

EAGLE TREE SYSTEMS OSD



APPLICATIONS

- ▶ Still and video photography (non-commercial)
- ▶ Search and rescue
- ▶ Law enforcement
- ▶ What else?
 - ▶ Roof inspections
 - ▶ Antenna inspections
 - ▶ Loft or string an antenna
 - ▶ Video of kids' ballgames
 - ▶ Game spotting and movement

FAA REGULATIONS

- ▶ UAVs (Unmanned Aerial Vehicles) cannot be used for any commercial purpose in U.S. airspace.
- ▶ FAA is very aware of explosion of UAVs and their sophistication, flight capabilities, and legitimate applications.
- ▶ New rulings for UAVs expected from the FAA by 2015.
- ▶ Currently regulated as “model aircraft” under FAA Advisory Circular 91.57.
 - ▶ Operating ceiling of 400 feet
 - ▶ Must not be closer than 3 miles to an airport
 - ▶ Must not fly over heavily populated areas

GoPro Silver, 11 megapixel camera, 170 degree FOV

SAMPLE STILL PHOTOS

















Q & A



Announcements

New Business/ Announcements

- Jeff did a series of demonstration flights in the parking lot to a lot of oohs and ahhs- very cool.
- Jeff also showed videos shot from a uav- these are not included in the notes here.
- See you at Field Day- if you want to come to the BBQ on Sat, please let me know- smiller@rollanet.org



Next meeting: July 1

(Meeting notes are posted on RRARS.org)