

Lake County Radio Control Club

FlyPaper



AMA CHARTER CLUB #777

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www.lakecountyrccclub.org

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Oh No.

RADIO CHATTER

Flypaper invites your contributions. If you get a new aircraft, or do something of which you are proud, or have a . . . uh . . .uh . . . “learning experience” with a plane or heli, or anything good or noteworthy to share, let Jack Cutrone know and he will write it up in the next Flypaper. His email and phone number appear in the masthead at the top.

Cover Story – Glen Learnahan’s Lost Plane

Glen Learnahan’s heart stopped and then began to sink. He was flying the maiden flight on a quarter scale TR 260 that he had been working on for two years. The pre-flight check had gone well with the DLE 55 engine running smoothly. After taxiing out and giving a last glance at the windsock, he had advanced the throttle, eased it off the runway and begun flying circuits. He hadn’t noticed that he was getting further from the runway and was well over the corn field. Without warning the plane made an uncommanded roll to the left.

Glen, an experienced radio control and full scale pilot, struggled to maintain control, but unsuccessfully, the plane seeming to have a mind of its own. The plane kept getting lower and quickly disappeared from view. Glen concentrated on getting a visual line to where it went down. The spot was a little north of mid-field and close to the tree line. Once his nerves settled a little, he walked that line across the runway and into the corn field. Deceptive from the flight stations, the corn was much higher than it had appeared, about two or three feet over his head. Despite the corn, Glen was confident that given its size, he would be able to locate the plane without too much difficulty.

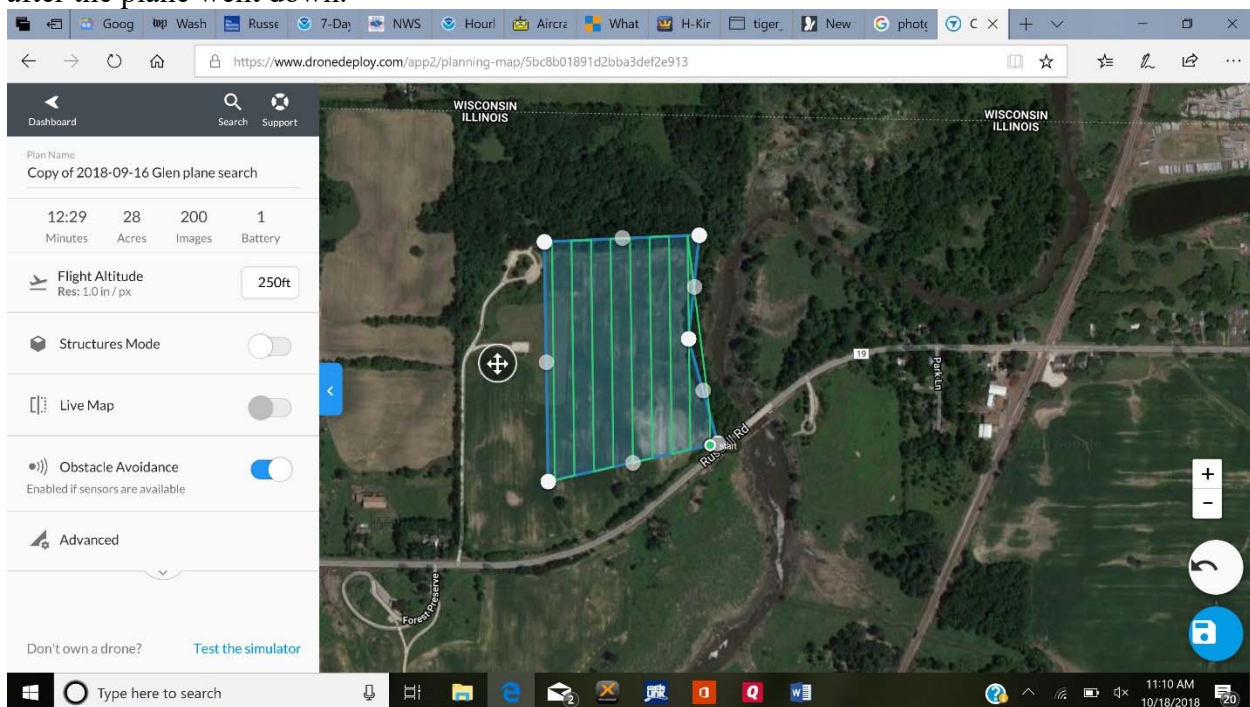
Four hours later, Glen came out of the corn without the plane. The corn had been brutal but to make matters worse, thick weeds filled in the space between the corn rows. The walking cast on Glen’s foot made it even worse. Over the next nine days, Glen returned to the field and put in four hours days searching for his plane before he had to go to work. He took to carrying a machete to help cut his way through the weeds. He met with no more success and, adding insult to injury, he even managed to lose his machete. He reluctantly reached the conclusion that the plane was lost forever.

Jack Cutrone, had recently purchased his first “drone,” a DJI Mavic Pro™. He was trying to learn about its features and was interested in using it for mapping. He downloaded the free version of DroneDeploy’s™ mapping software. Glen’s lost plane was a perfect opportunity to put this new app to practical use.

The DroneDeploy software™ could hardly be easier to use. After downloading and installing the app, the user goes to the DroneDeploy™ website and registers, giving access to the user’s DroneDeploy™ dashboard. At the dashboard, once the user clicks on the option to create a new mapping plan, the software shows a satellite view of the immediate area. The user sees a default map of a five-acre rectangular area, a flight altitude of 246 feet, calling for a three minute, twenty-four second mapping flight during the course of which 31 photos will be taken and the number of batteries that the flight will require. The app allows the user to set various parameters. By clicking and dragging on dots shown on the perimeter of the area to be mapped, the user can change the shape of the area to be mapped, as well as set a higher or lower altitude for the flight. Lower altitudes will increase both flight time because more passes are required

and will increase the number of photos taken during the flight. The advantage of a lower flight altitude is that the resolution improves. At the default 246 feet, the resolution is .9 inches per pixel, while at 100 feet, the resolution is .4 inches per pixel. Given the high definition photos the Mavic Pro can take, these photos contain great detail. In setting the area to be mapped, the user is not restricted to a rectangle but rather can set the outer edges of the area to be mapped in almost any shape required. There is an option to turn the drone's obstacle avoidance system on or off as well as to set the software for terrain or structure mapping. Other options under the advanced tab are to set the direction of flight, which can be helpful in avoiding obstacles, maximum flight speed and the starting waypoint. Another advanced setting is for the amount of "frontlap" and "sidelap," the overlap from photo to photo which will be used later in creation of the map.

Glen was sure that the plane had come down in the cornfield and thought it was close to a tree line adjacent to the Des Plaines River, east of the field. Jack set his first mapping effort to cover most of the cornfield, concentrating between the flying field and the tree line and all but a small portion of the cornfield far south of the area Glen described. The screenshot shows the area Jack set to be mapped with the flight path showing as green lines. As indicated, the flight was at 250 feet, lasting 12:29 minutes, covering 28 acres and resulting in 200 images. It was flown the day after the plane went down.



After the flight, Jack uploaded all the images to the DroneDeploy™ website. The company's proprietary software then "stitches" the photos together into one map using the geocoding tags on the photos as well as matching the frontlap and sidelap of the photos themselves. The resulting map is then overlaid onto a Google™ map of the surrounding area and is accessible from the user's dashboard.



Jack spent well over an hour examining the resulting map at the highest resolution possible. He found the resolution to be somewhat disappointing. However, even with the resolution limitations, he was almost certain that the plane was not in the area mapped. In further discussions, Glen repeated that he was certain that the plane had gone down in the cornfield and had not flown past the tree line. And he continued his search in that area for the next week.

As certain as Glen was about the crash site, Jack was equally certain that the plane had not come down in the corn. He returned a week later to do more mapping at a somewhat lower altitude to increase the resolution. He had also

learned in the interval that the free version of the app produces lower resolution maps than the paid version though the individual photos themselves retain their sharpness. In deference to Glen, he did two searches. One was a lower level search of the corn field more concentrated on the area that Glen described. The other was a search which included the trees to the north and east of the corn as well as a small area across the Des Plaines River. The expanded search was premised on a caution Jack had received from **Russ Scott** when he got a quarter scale Extra 260 that very large planes seem closer than the really are.

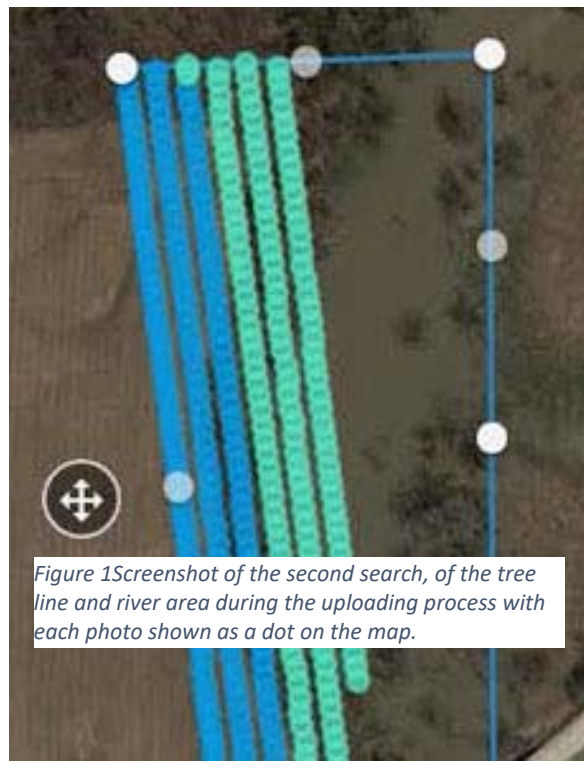
Prior to starting the DroneDeploy™ mapping flight, Jack did an exploratory flight using the DJI Go4™ application for flying the Mavic. During that flight he saw a suspicious object on the far side of the Des Plaines River but continued a search of the trees and later returned to the object for closer inspection. Due to the trees, Jack was very cautious about altitude and obstructions. In the course of trying to lower the Mavic to get a better look at the object, he flew it down towards the river bank but it descended so low that he lost radio signal from the drone. In such a case, the wonderfully engineered DJI software takes over, flies up to clear obstacles and automatically returns and lands the drone at the spot it had taken off from. A video of the flight appears at <https://www.youtube.com/watch?v=xlhFO2l4mA0>



After this exploratory flight, Jack was prepared to do the two DroneDeploy™ mapping flights. Due to the lower altitude, the flights last longer, past the flight capacity of one battery. The software flies the first part of the flight and when the battery is getting low, it returns and lands at the home point. After a fresh battery is installed, the software returns it to where it left off and finishes the mapping flight, then returning home.

After the two flights, Jack uploaded all the photos to the DroneDeploy™ website and several hours later, was notified that the maps were finished. At the lower flight altitude the map resolution was better and the suspicious object looked even more like a crashed plane.

The next day, Jack went to the area and indeed discovered the plane as shown in the cover photo. It had crashed nose down at high speed into the muck of the river bank. The spinner was 15 inches into the mud. The fuselage had broken in two aft of the wings. The other wing was adjacent and the canopy was nearby. Jack recovered all the parts and let Glen know of his find and made arrangements to get the remains to him. Glen plans to rebuild the plane and keep it closer in when flying it.



Post Script – At the next club meeting, the members voted to award Jack an “Unsung Hero” award for his efforts in helping Glen locate and retrieve his plane.



Another Mishap. Chuck Smith also had an issue but his was with his Freewing Avanti. In his words:

Here's a little something for the newsletter. A few weeks ago, my inrunner Avanti lost the fan with an abrupt bang shortly after takeoff. I immediately did a 180 and made a really nice downwind landing. The photo shows what was left in the engine bay afterwards. When the fan let go, it shredded the aluminum shroud and destroyed the motor. Everything but two big pieces of the shroud went out the tail. The shaft of the motor was bent and the front bearings were gone. When I took the motor apart, I did find one bearing ball stuck to the magnets of the rotor. Motion RC's warranty is 30 days and they don't carry the inrunner fan anymore so I ended up installing a JetFan EDF with an HET inrunner.



While the Avanti was in the hanger to have the failed fan replaced, I decided to add a tail cone as seen in the photo TailCone. It's made of 28 gauge tin plated steel (the 8S inrunner is a bit nose heavy anyway). The afterburner light is reflected off the inner surface of the tail cone and makes the white interior of the exit pipe glow nicely, at least in the basement. If any of the other Avanti flyers want to make a tail cone, I can email them a copy of the template. One could also use aluminum or pretty much any flexible material. It's glued on with FoamTac.



Editor's note – As always, Chuck's scale work inspires envy.

What is so rare as a good flying day in October. Sunday, October 14, 2018. The temperature was in the 60's; the sun was shining; and the winds were 6-8 mph. In short you couldn't ask for a better day and the field was filled with LCRCC members.



Figure 21-r Wally Szempruch, Glen Learnahan, Eddie Okrszesik, Ryan Smith



l-r Mike Taylor, Turbine Tom Stolarik



Rich Hentschel



*Mike Taylor with his new Eflite V900.
That sucker is faaasssst*

Treasurer's Report For Oct 2018

(Represents September 2018 Activity)

Opening Checking Balance	\$ 7,162.66
Dues	
50/50 Raffle	5.00
Sticker Sales	
Total Receipts	<hr/> 5.00
 Bill Rago (Sept. picnic supplies)	 \$ (40.44)
Gary Shakin (floor jack)	\$ (40.00)
Gary Shakin (floor jack)	\$ (56.51)
Jim Doubek (August picnic supplies)	(205.52)
Wally Szempruch (raffle prizes)	(642.80)
Pats Services	(94.95)
Total Disbursements	(1,080.22)
Ending Checking Balance	<hr/> \$ 6,087.44 <hr/>
 Bank Balance	 \$ 6,127.44
Difference (unpresented check - Gary S)	\$ 40.00

October 7, 2018 LCRCC Meeting Minutes

The monthly meeting of the Lake County Radio Control Club was held at the Lake Villa Library, 1001 East Grand Ave, Lindenhurst, IL. **Chuck Smith** called the meeting to order at 7:15 pm.

Secretary's Report:

The previous month's minutes were accepted as written in the monthly "FlyPaper"

Treasurer's Report:

The treasurer's report was presented by **Chuck Smith** was accepted as written.

Field officer's Report:

Glen Learnahan's foot still hurting, **Jack Cutrone** and **Red Matson** groomed the field, looks good guys.

Thanks to Jack and his precision Quadcopter video mapping Glen's missing airplane was found!

Field Safety Officer's Report:

No issues to report

Events Director's Report:

Wally Szempruch will supply Pizza's for our final funfly of 2018 – thanks Wally!

Old Business:

None.

New Business:

None.

New Members:

No new members.

Show & Tell:

Chuck Smith explained the art of installing and wiring LED lights, Chuck has experimented with several different luminosities of these lights and found they can be operated on far less voltage than the manufacturer suggests.

Contact Chuck as to where he purchases his LED lights and drivers.

On a motion and second Chuck ended the meeting 8:13pm

Bill Rago Recording Secretary

2018 Upcoming Events Schedule

- **NEXT MEETING** – November 1, 2018 7:15 pm. Lake Villa Library, Room A, 1001 East Grand Ave, Lindenhurst, IL.
- Indoor flying starts in November. Dates TBA.



Lake County Radio Control Club Officers

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