Why Ruminate? Just fly

DRAMA LAMA?
TURNING A BLIND EYE

IN THEORY
LETS BE MORE PRACTICAL SHALL WE?

LIDAR

APPLICATIONS
SO MANY GOOD THINGS TO COME.

MEMORIES?
SHOW ME WHAT YOU GOT

FGA PATREON NEWS

Everything is Possible

A couple of years ago I was approached to speak at a world conference in my home town Brisbane about drone technology and its applications in the real world. At that stage drones were THE buzz word and because of my high profile the organisers assumed I was an expert. I did not consider myself anything other than a nerd who built his own quadcopter and flew toys for fun. The conference organiser was keen for me to raise public awareness because she had heard of me speaking in South Korea where I talked about the limitations of drone technology (and debunked much of the hype about drone racing).

When I asked the conference organiser what I should talk about she said she wanted me to draw a picture of what drone technology could do for business in the future. It was then I suddenly realised they were only interested in futuristic projections and not what was realistic/possible today. They wanted hype - not something I am good at. I did want to tell the conference that recreational FPV self build pilots could certainly teach the commercial drone industry a number of important lessons. One of those things was that recreational fliers understand the limitations of what drones can and can not do, given the existing technology. The other thing I wanted to say was that recreational "self build" pilots know more about flying, maintaining, tuning, and fitting different components into one flying package than all the academics put together. I was desperately trying to say that the drone industry should consult more with recreational fliers because they deal in realities every time they fly. Instead of being "airy fairy" I wanted conference participants to realise there was a long way to go before the sorts of innovations the academics and wannabe entrepreneurs were predicting would actually happen. The media is good at projecting fantastic images of such things as flying taxis and fast flying delivery services. Entrepreneurs too (especially those funded by investors with money to burn) are also apt to claim amazing possibilities. The truth is that we are a huge distance away from all this happening. Lots of things are certainly "possible" but so many things I have seen projected are many years away from happening on any large scale. Sure rough prototypes are seen here and there. In essence, the infrastructure needed to make many of these things work is simply not there and this will take time.

I was away when the conference was held in 2017. And I was also away overseas last year and missed that one too. But I did watch from the sidelines and learned one thing. The world is filled with people who dream. That's perfectly ok because I dreamed too. But almost all the things presented at both of these conferences were unworkable given current conditions.

And so on to this year's conference. Who's presenting and who's attending? Not surprisingly its the same people - CEOs from global companies looking for commercial outcomes, clever entrepreneurs of startup companies intent on using the conference as an advertising platform, academics who are investigating and researching particular funding to make their inventions happen. And so, through my manager, I asked to be a presenter at this years World of Drones Conference. I was told it was going to cost me almost $1000 to attend and speak. I felt like a drone racing pilot - being part of the show but paying your way to enhance it and the conference organisers standings. It would seem these conferences are really only for idealists. I am not one of these people. I walked away in disgust. Let's get real people!!!

3D drone mapping software

I occasionally train people to gain their commercial drone licences but I also get to use a variety of drones on commercial projects. Each job is about solving problems - doing things more efficiently and for less cost. Although drones have their limitations there is one piece of software technology (that has been around for quite some time) that I know is already making a huge impact. When I fly my quad recreationally I usually record my flight on a high quality camera. What if this camera had more features? What if it had LIDAR?

LIDAR stands for light detection and ranging - recording laser pulses that strike an object and back to the sensor. LIDAR measures the distance from the sensor to the object by determining the time between the release of laser pulse to receiving of the reflected pulse. For ground uses, LIDAR uses infrared laser and for water penetration, a green light is used. LIDAR therefore can be used literally anywhere. Because drones can fly in 3D space this software is making things easier and quicker in many operations. Taking LIDAR photos and recording LIDAR videos from your drone takes on a whole new meaning. Here are some applications of LIDAR.

1. Landscape: Regular survey technology can miss the surface elevation value that is hidden by vegetation or forest canopy. LIDAR can penetrate through the object and detect the surface value.

2. Agriculture: LIDAR can be used to create elevation maps of farmland that can be converted to create slope and sunlight exposure area maps thus helping farmers to save on the costly fertilizer.

3. Forest Planning and Management: LIDAR is widely used in the forest industry to plan and mange by measuring the vertical structure and density of forest canopy. It is also widely used as an aid in fire management.

4. Tourism and Parks Management: LIDAR is used to plan park and tourism areas by accurately measuring surfaces that work best for such things as playgrounds and walking trails.

5. Environmental Assessment: LIDAR sensing is used to find the areas that are most affected by human activities.

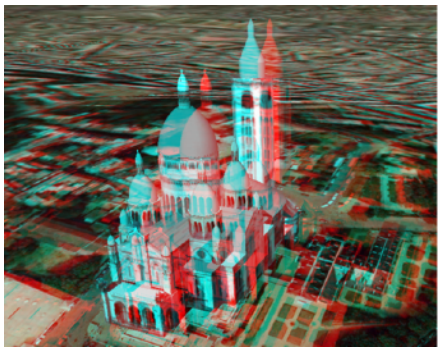
6. **Biodiversity for Birds:** LIDAR technology is used to measure vertical structure of trees, shrubs and other plants to inform what species can live and prosper in that area.

7. Flood Model: LIDAR is used to create high resolution and accurate surface models of a river so that better planning of buildings on the river bank can take place.

8. Watershed and Stream Delineation: LIDAR is used to create watershed areas and show stream line delineation.

9. River Survey: LIDAR is used to measure under water and to understand depth, flow strength, and the width of the rivers during peak and low flow times.

10. Modelling of the Pollution: LIDAR can detect pollutant particles of carbon dioxide, sulphur dioxide and methane. This information helps research to create pollutant density map of the area which can be used for better planning of a city.



11. Mapping: Surface model created from LIDAR is used to show a 3D view which makes it easier to plan roads, buildings, bridges and rivers.

12. Management of Coastline: LIDAR data of both the coastline and under the water surface can be combined to analyze the erosive behavior of waves.

13. Transport Planning: LIDAR helps to understand width, elevation and length of an existing road so that a road engineer use calculate cut & fill, culvert sizing, vegetation removal, grade calculations and more.

14. Oil and Gas Exploration: Differential Absorption LIDAR is used to trace amount of gases above the hydrocarbon region which helps to find the oil and gas deposits.

15. Mining: LIDAR is also used in mining business to measure the ore volume by taking series of photos of ore extraction space. These interval photos are used to calculate volume of extraction.

16. Archeology: LIDAR can detect micro topography that is hidden by vegetation which helps archeologists analyse surfaces.

17. Right to Light: LIDAR data can capture 3D model of a building to produce a shadow map which shows illumination area during particular time of the day.

18. Accident Scene: Ground based LIDAR can be used to capture the accident and crime scene. LIDAR technology can be used quickly to record the accident scene on the road that can be used later for the investigation. This allow the traffic to flow smoothly if there is the accident.

19. Sewer and Manhole Survey: A LIDAR sensor can be attached to a drone which is sent into a pipe to survey information that can be analysed in different ways.

20. Meteorology: LIDAR on drones has been used to study cloud formations and their behavior.

Drama will continue but only if you let it.

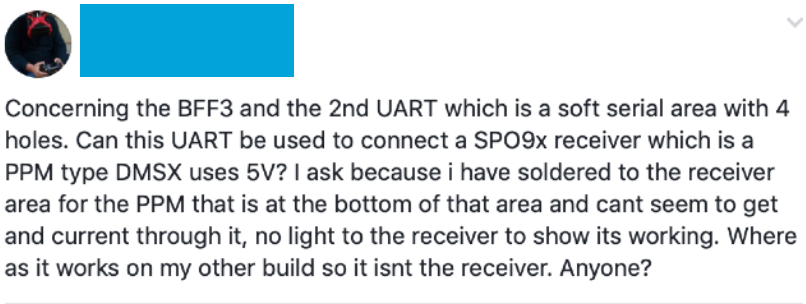
It is not surprising that as soon as you switch off Facebook or Twitter (social media) the drama you often see in the FPV drone hobby suddenly disappears from your view. After many years in the limelight I withdrew from many FPV groups in the last 6 months and jettisoned a number of individuals who tended to take up a lot of my time. I even blocked some of these people - the ones who continue to spread vitriol on political and religious topics. I don't need these people in my life. Opinions are what makes social media tick over. The big thing I have noticed is that the majority of the groups where drama is fostered are commercial groups that are in the business of selling FPV gear to people who populate those groups. Most of these groups highlight new products and hype up any new offerings and denigrate competitive products. No matter who it may be I can almost guarantee you that hype and advertising is stirred up by people primarily with vested commercial interests. And the sad part is that each of the groups have a band of fanboys who wait for any opportunity to sink their boots in if there is a negative comment about a product they believe in.

So the final comment I want to make about the recent bullshit to do with whether a group should be called a community or a fan club is this. I have no interest in pulling down any FPV organisation. I have worked very amicably with lots of people in this industry. I spent 2.5 years of my life trying desperately to build the RR brand so I have no desire to be negative and drag that group down. That is not to say I like the direction RR have been heading since I left - there is far too much overt advertising and this has been hurting the brand more than they let on. Give it a go, unfriend yourself from groups you think are creating drama - you might be surprised how less stressful your life might become.

"In other news ....."

1. Gossip in the industry is that DJI is close to releasing a "GoPro" killer camera. The compact form factor predicted would make it very popular in the recreational drone industry. It makes sense because DJI has a partnership going with Hasselblad, one of the best known camera companies in the world.
   Watch this space.

2. You have to admit we are a very nerdy community. Came across this post the other day. Says it all. There are many pilots out there that get turned on by all this technical stuff but it's not for everyone. For many, the frustration in building



and tuning and upgrading is too much and

they eventually leave but for others, it is what the sport is all about. The self build recreational quad market will always only be a niche market until things get easier. It may be well and good to say “you learn a lot when you crash often” but so much of the learning frustrates the hell out of people. Things have got to be made easier. I can hop into any car these days and drive it without much effort in understanding how it operates. Eventually self built drone firmware and software will be like that. DJI drones are the opposite end of the spectrum - they fly themselves but this too is a turnoff for some. So in the meantime ..... chose to enter the technical world of “build it yourself” drones (with all their frustrations) or buy one ready-to-fly straight off the shelf. Either way make sure you take every opportunity to fly and have fun and don’t spend too much time on technical stuff like upgrading something that already flies well. Life is too short.

3. When an online retailer claims a particular product is so unique that everything else that comes out is simply a copy of it then you have to laugh. There is nothing out there in the FPV industry that is “unique.” Innovation has stagnated and everyone is rebranding stuff and trying to make out the it is somehow more efficient or advanced. There are few real innovators left in this hobby and you can count the original ones on one hand. Just because someone claims it is ‘original” or “innovative” does not mean it is - no matter their reputation. Currently 43 motor manufacturers in China are laughing all the way to the bank. They each watch each other like hawks and jump on anything that looks interesting and immediately copy it. So what do you do when you hear that an entrepreneur come innovator claims a motor he has “sourced” for his celebrity pilot is so amazing it is being copied by everyone else? You treat all statements like this with a grain of salt and DO YOUR HOMEWORK. Research will soon show you that hype is everywhere in this hobby. Don’t get sucked in.

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