

Cashing in on FPV?

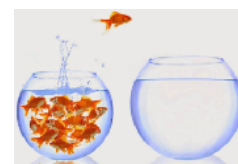
LESSONS
ARE FPV SKILLS
TRANSFERABLE?



OBSERVATIONS
HOBBY OR
BUSINESS?



#NATURALSELECTION
IMPROVE SOMETHING -
ANYTHING WILL DO



Q & A
DEPRESSION,
BUILD OR FLY

FGA PATREON NEWS

FPV- Cashing In?

The media keeps spruiking the imminent introduction of aerial drone technology into ALL aspects of life. Personally I don't think this will be the case - at least in the near foreseeable future. Instead, I can definitely see drones being deployed in a few select industries like survey engineering, public safety and first responders, agriculture, oil and gas and telecommunications and utilities.



So how do I view the FPV quadcopter hobby fitting into this marketplace and is there money to be made applying FPV flying and building/maintenance skills or transferring your passion to a more commercial setting? I am exploring the possibilities of doing exactly that myself at the moment. Despite all the hype about "opportunities" I can see it's not as straightforward as some have suggested. Just because you consider yourself as having solid piloting skills does not necessarily translate to having high market value. FPV is definitely a skill that takes time to learn and fortunately there is an increasing trend for firms to create in-house drone departments instead of outsourcing to a select number of specialists.

This means there will be an increasing number of jobs on offer for skilled FPV pilots - both as trainers and as pilots. But, and its a big BUT, as more and more people get into this hobby, just like drone racing, competition for FPV drone job is also on the rise.

Despite what vested interests are wanting you to believe, sales growth in the recreational self-build FPV minicopter hobby market have plateaued. The number of people entering the self build and fly FPV quad hobby is nowhere near the avalanche predicted a few years ago. It's sad news indeed for those who entered the industry with the aim of making a profit from an exponentially rising market demand. The existing recreational market is being saturated by lots of new online players many of whom claim to be innovating but instead, are simply adding a wider range of brands/products to their shelves or rebranding existing products and selling hype. Business development opportunities are being squeezed just as much as piloting opportunities.

Mini-quads and their pilots do have a place in the commercial drone world, more specifically for use in niche applications where more agile and flexible camera platforms yield advantages over larger slower moving ready-to-fly consumer drones. But landing a full time job here is tricky because the pool of skilled personnel is being rapidly filled to the brim by people eager to offer their services.

With students beginning to study drones and STEM in high schools I can see the landscape shifting radically from cheap drones to high-end drones developed for niche applications. Pilots as well as technicians will be required.

Observations

Interesting to read the many comments made in response to my last newsletter. Here's some more observations:

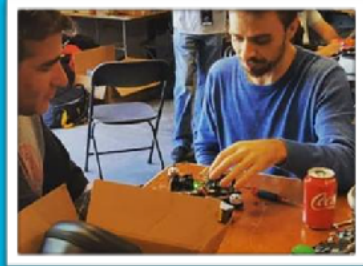
1. Is there such a thing as a typical “self-build quad pilot”?

How many drones does the typical recreational self-build-and-fly quad enthusiast posses? Gauging from posts showing workshop walls, the vast majority of enthusiasts have lots more than just one. I believe this is what is keeping drone component sales alive at the moment. I see many references to personal “fleets” and pilots who claim they buy and build a new drone regularly, many in order to test and compare what's new. Some people like to tinker with alternative brands while others build multiples of the one quad. Simply put, the “typical” self build quad pilot is one who has many quads.



The “FPV experience” means different things to different people and although we know that first view through FPV goggles is likely to be a mind blowing epiphany for some there are just as many people who go on and find the building process just as exciting. There are lots of different skills to master. If you are attracted to flying for fun or flying fast in competitions, or if you are just a technical nerd - no matter which, it means doing it over and over again because “practice makes perfect”. Fly often, or fly fast, means you soon realise you will need to build and repair often. The reality is you will be forced to regularly invest in new products - and this means lots of fun building, lots of fun flying and most likely, lots of quads on show (or at the very least, one backup quad in case of a crash).

Over the years I derived great satisfaction in all aspects of the hobby - creating, building, tuning, testing and flying. I have also assisted lots of people, both newbies and more



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experienced fliers, to hone their skills. I've been "in the zone" myself many times and fully appreciate the time required to master skills - both technical and muscle memory. This is what I loved so much about the hobby. But when it comes to a commercial bent I leave that to others. Being passionate about the hobby and being "there for the community" can therefore have different connotations. Some do it to cash in on the business opportunities while others do it because its great fun (despite the frustrations). Immersing yourself in the building/testing/repairing process and showing off more than one quad separates you from the others - the people who buy an off-the-shelf-drone and fly occasionally. And there are many more of those.



2. I fly FPV but want to become a commercial FPV pilot - are there any carry overs?

My son will soon be learning to drive a car. After a bit of practice he will eventually pass his licence test and hit the road with minimal practical experience - something you only get driving over many years. As a licence tester for commercial drone qualifications (and a senior gliding instructor a few years ago) I can tell you that just because you pass a test to fly does not mean you can immediately call yourself an accomplished pilot. My point is this. Self build drone pilots work closely in small groups where they get informal training to fly (and build, and repair). Some of this training is very intense. Practice, practice, practice to become skilled.



I have therefore found that pilots who have the more amazing skills are those who fly for fun - who picked up their skills flying with friends or in competitions. They fly fast and they fly in many different locations and conditions.

Unlike pilots who build their own drones, a large majority of pilots who fly larger slower commercial drones rely on the drones "flying themselves" (until they crash or fly away). It's not surprising that the majority of unlicensed pilots who have built their own quads consider themselves far more experienced/skilled pilots than those who buy a consumer drone such as a DJI and then pass a short commercial test.

In Australia you can obtain your drone pilot's licence (RePL) fairly easily but that does not mean you can immediately use your quad to generate business. You have to have an additional drone business licence (RPAS) which is sanctioned by the Civil Aviation Safety Authority (CASA) to allow you to put in an application to develop and fly a project in order to gain remuneration. There are annual costs to cover so a RPAS means you need to cover recurring costs. Fly commercially without the relevant licence and you will be courting a visit from CASA (or similar authority in every country). So if you are thinking about gaining your commercial licence to enhance your chances of gaining work in the field there are many more hoops you will still have to jump through. And the problem is that there has been a dramatic increase worldwide in the number of pilots passing their commercial licence.

So yes, there are carryovers, but becoming a professional FPV pilot in the commercial world is not a straight forward path as the FPV training companies would have you believe.

Interesting side note: there are strict regulations about where drones can be flown. Flouting the rules will get you in trouble. Pass a commercial drone course and these rules can be waived. Go figure.

3. Improvement vs Innovation?

They say that making an exact copy of a product is cheating/cloning but many people who slightly change what they have copied try to argue that their change somehow, suddenly becomes “an innovation”. Every change, even a slight one, purporting to “improve” the product by making it more efficient seems to be fair game. That’s good - is it not? Let’s explore this thinking a bit further and apply it in the FPV minicopter hobby.

When I first got my hands on the Alien frame and won the US Drone Nationals in 2015 I was labeled a cheat because my quad was so radically different. No-one had seen anything like it before. It was pure INNOVATIVE. As time progressed the pundits began to claim that you cannot design a quad frame any other way - four arms and a cage to house the electronics. What people did not appreciate was that the frame was radically different to what else was on offer in 2015 yes but it also was combined with other “improved” components and tuned to perfection (like KISS flight controller and Cobra motor). I went on to “change” minor aspects of the Alien frame design over the next couple of years but I never considered any of the changes I made to be “innovations”, only improvements. As it turns out in the end I realised that what I really wanted in a freestyle frame could not be made by “improving” the Alien any further. The Reverb was redesigned from the ground up. It did incorporate some of the aspects that the Alien offered to the world but it certainly can never be called an Alien. The differences are quite radical. I ranted loudly against Banggood when they copied the Reverb exactly piece by piece and marketed it as a “unique” frame. What Banggood offered was exactly the same as the Reverb itself. Meanwhile vested interests tried to tell the world that the Reverb is actually an

Alien in disguise. Despite this the Reverb and the Alien are sold as separate sales lines by ImpulseRC. Its true that the Reverb has had enormous success (arguably the highest selling freestyle frame on the global market in 2018) but could the Reverb be called “innovative?” The answer is tied up in the fact that a number of sub component ideas have been copied by other frame makers. These sub-components are considered to be different enough that others have incorporated them into their designs as “improvements.”

I look with some interest (less so as time progresses) at solutions marketed by people who believe they have unique design flair. The reality is that over the last couple of years there have been a minuscule number of radically new concepts that work. The majority are simply recycled ideas that do nothing to push the industry forward. What it does do is keep refreshing the existing product pool that the hobbyists are desperate to try (and buy). This is what is keeping the hobby afloat at the moment. When you look closely at some “innovations” it is patently obvious that there are some “designers” who have scant knowledge about aviation/physics/geometry/end results. In the end whether it’s simply an improvement or a dubious “innovation” will depend upon the reputation of the commercial entity offering the “new” product. And I know from experience that the FPV market will quickly decide what is worth buying and what to shun. But then again some fickle people will buy anything - improvement or innovation aside - because they believe the hype and do no research of their own.



Trends

Vendor consolidation

Over the past year the hype about drones “transforming” industries has fueled investment which has not resulted in reasonable returns. In fact the dreams of some well know vendors such as GoPro, Airware and 3D Robotics have turned to shit. Smaller firms playing in the recreational hobby (as manufacturers and/or online sales resellers) have also experienced a downturn in growth as more and more businesses enter the market and sales become diluted. Some claim this is the industry maturing, or consolidating.



The result is that many recreational drone related business are hanging on for grim death and are hoping that the day will come when one of the big guys will arrive at their door and offer to buy them out. But some companies continue to buck the trend. DJI, for example, captured 75% of the recreational drone market last year (estimated at about 2.5 million drones). They have reaped their reward because they have invested in aggressive technical development, technological advancements and have build a solid reputation for products with higher than average quality.

It's probably safe to say that DJI's market share in the hobbyist and commercial market will continue because their Phantom 4 RTK

and Mavic Enterprise products target industrial users, their continuing strong relationship with Hasselblad cameras and Microsoft software will build value, and their recent investment in an R&D facility in Palo Alto, California, will ensure future innovation. It will be interesting to see how the little guys fare. Many will continue to struggle as online giants Amazon and Banggood aggressively eat up the market.

More Regulation

Due primarily to public distrust and civil liability/safety/security/privacy/public nuisance concerns (aka recent Gatwick debacle), I am expecting to see more headlines about an up-and-coming drone apocalypse. In truth, stories like this hurt recreational flyers like me just as much as legitimate commercial operators who have to seek permission to do their jobs (such as performing inspections and survey mapping) over private and public land. It's all about inhibiting freedom as arbitrary lines are drawn to define aerial trespass restrictions and no fly zones. Every country is watching what others are doing. It's all obviously a disturbing ruse exacerbated by our media full of sensationalism. Despite our hobby having an amazingly low rate of accidents compared to other aviation pursuits more regulation is on its way folks. It takes time for regulators to get their laws invoked but its certainly coming. I fear what the effects will be for the hobby I love but I also can imagine the huge amount of hoops that commercial operators will have to go through to get their projects completed. Its sad because I know first hand that many of the commercial operators are not making money in the more popular aerial cinematography areas and are trying instead to team up with specialists to get a foothold in industrial applications such as mapping and surveying where skills other than how to fly and how to operate a camera is in play. Regulation is going to be a major part of life if you wish to fly quads, whether it be for fun or commercially.

More about this hot topic next month.

So Wot's Doing?

I get emails from the general public. Many are technical questions about products that I have not got the answer for, some seek my personal opinion about products or services which I am loath to give and some simply ask how I am doing. Joy to the world.

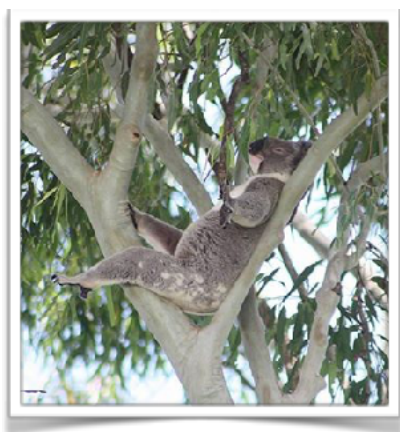
THOMAS

Hello, I flew my last mini quads about a year ago. Since your videos (but more importantly your personality) were the reason I started to fly some 3 years ago, I wondered how you were doing? I was surprised to see a lot has changed in the mini quad community. Very sad to see. Having gone through a severe depression the last year, and knowing you have suffered similarly, I just hope all is well. Hoping you are doing what you love and what brings you joy. I have learned that severe depression is actually a never ending fight consisting of seperate battles to win. I sincerely hope you are winning yours!

Greetings from Belgium

ANSWER

Thank you for your email. It certainly moved me. Depression is something many people have to grapple with. Evidently mental health issues affects one in four people around the world. I have spoken about it in my videos - it's something that I have to continually work on. Little things can set it off but I now appreciate the warning signs myself and try to react appropriately. Its one foot in front of the other as I push forward.



Depression is essentially about lack of self esteem. I believe my own depression comes

from setting unrealistically high goals for myself and believing I am a failure when I don't achieve them. I never ever considered myself to be a role model and I have always been up front and honest with my Patreons and with the hobby community generally. It's true that the last 3 years have been the most awe inspiring of my life but they have also taken a toll on me personally. Many people did look up to me but a number turned off when they realised I have values that were not shared by them. I came to accept that I was not perfect.

Stepping back from the public limelight has had its benefits. I am more aware of my family and my friends, plus my surroundings, and am less concerned about what my "adoring public" think or prefer. But the transition from high profile artist back to being just a private person has not been simple. 3 years of constant moving around the globe while living out of a suitcase may appear to be a mind blowing experience for many but I can tell you there have been times that its been an absolute nightmare. Part of the issue was that people I worked with who traveling around the world with me were able to go back to a normal life in their house when a project finished except for me. I was always thousands of kilometers from home with a suitcase as my home. I only saw my boys and family once or twice a year and then only for a limited time before the next project. Not having a regular and adequate remuneration added to my stress. Having living expenses and travel covered did not pay the bills back home. I felt privileged to be showered with products to test but needing to sell my meagre assets to fund my lifestyle. Eventually I was forced to evaluate my direction in life and what I felt was important. I knew I had tried very hard to accommodate the wishes of others but you can only do that for so long. I was looking into an abyss but with the help of my close friends and family I came out the other side with a much better understanding of myself and others. Today I make time to smell the roses and enjoy planning for a future where mini quads and celebrity status are not the highest aspirations on my agenda. I am always happy to talk about depression. It's an important discussion for anyone to have.

Stephan

I get turned on by the building process because I want to experience, first hand, how the latest innovations perform. As a result I have many quads displayed in my workshop which I enjoy looking at but am loath to fly and consequently destroy. Given your high level of technical knowledge are you that way inclined too?

ANSWER

Building is certainly something I enjoy, but only up to a point. I don't build quads just to look at or to be displayed and admired on my wall. Yes I like to ensure that my build is clean and professional because cutting corners only causes problems later when flying, but I always build to fly. I have built many different quads but I usually only keep a maximum of 3-4 quads of similar makeup because its the only way for me to compare apples with apples when testing. I enjoy tuning and have spent countless hours getting to the point where I have confidence that all my quads will fly the same way each time I throw them up in the air - no matter what there flight controller or motor combination. What I have found though, is that there is minimal difference between components these days and that the "Sunday" pilot would be hard pressed to tell if there is any improvement in performance between different brand quads they build that are the same size.

I smile when pilots pimp up their quads and transmitters with colourful stickers, pads and additional add-ons. If you build quads to fly you will quickly learn that the first crash is the harshest so take a photo before your maiden. A bashed quad means you are learning. But then each to his own. I am not interested in looks, only functionality. My quads are work horses, ready to fly (and crash). And if you keep hankering after the latest gear then there are lots of places that will take your money but don't expect the new components will blow your mind. There is ample proof showing that older quads are as much fun to fly as today's latest releases. Oh and another thing - I keep flying the same quads that have been around for quite some time - if there were components that demonstrated serious improvements I would have changed over to them long ago. My components of choice are components I designed especially for me - I have listed these in my previous newsletters. As for printed parts, like GoPro mounts, I can recommend David Owens, one of my loyal Patreons,

Enough from me. Go fly a pack or two for fun.

Cheers

Chad.

