

# The Power of 3

ISSUE 22  
April  
2018

Driving the future further

*"We're finally in the future/There's a new bird in the sky/Watching from above/  
with an electronic eye/I finally have the feeling/that there's nothing we can't do ..."*

*~ with apologies to DJ Earworm*

## Overview

Drones (unmanned flying robots) – some as large as airliners, some as small as pigeons – have been both lauded and maligned as agents of subterfuge and destruction, deployed by the military to spy on and strike at 'enemy' targets.

Today, of course, compact drones are ubiquitous. Not only are they getting smaller but also cheaper and easier to operate and, as is the case for many devices with wide appeal, the potential for misadventure and misuse (collisions with aircraft, infrastructure and individuals, the performance of malicious acts) is escalating as regulations on their use are finalised. (Sadly, in Russia the test flight of a mail delivery drone ended prematurely when it crashed into a building.) That said, the positives of adapting such innovative technology to myriad private, public and commercial ends are readily apparent.

As global insurance giant **agcs.allianz.com** reports, drones are becoming mainstream across the globe and within many industries. They can be used to perform menial or dangerous tasks, help problem-solve and overcome challenges and enhance the safety of thousands of workers every year while significantly reducing costs. Drones are ideal for industrial inspections, aerial photography (including cinematic shots), crop surveys, goods delivery in far-flung regions and situations involving emergency personnel, right down to dispensing fast food in the outback.

And, yes, drones-for-hire is a 'thing' now too.

## Up, up and away – drones are shaping the future

### Delivery by drone

**Companies large and small are investing in drone delivery, not least Amazon, UPS, Walmart and Domino's, while a plethora of start-ups have the same thing in mind.**

### *New kids on the block ...*

In 2016 Australian start-up Flirly, based in Nevada, executed the first instant drone delivery in the US under the watchful eye of the Federal Aviation Authority. In so doing, it pre-empted the big guns throwing money at the same technology.

Flirly set its sights on markets for humanitarian relief, online retail and food delivery, practising in Australia and New Zealand, where it teamed with Domino's to deliver the world's first 'pizza by drone'. Before anyone gets too excited though, Domino's admits the concept has a way to go, especially in the Antipodes.

Other small-ish companies touting drone deliveries include Californian-based Matternet, whose vehicles share the same airspace as emergency helicopters and constantly broadcast their location as they move blood and other medical resources between hospitals in urban parts of Switzerland. Recently, Matternet and e-commerce start-up siroop teamed with Daimler's Mercedes Benz to test the latter's van-based drone delivery concept in Zurich. Matternet plans to expand into the rest of Europe, the US and Japan.

Further afield in Rwanda and Tanzania, Zipline (also California-based) drone-delivers vital medical supplies to health workers in remote locations. Orders are sent by text, prepared by the company and dropped by parachute in a matter of minutes, with workers kept in the loop throughout. This week, Zipline unveiled "the fastest commercial delivery drone on Earth," capable of flying at up to 128 kilometres per hour (80 mph), and it has plans for a pilot programme in the US.

Flyver.co is a drone software company producing aerial solutions for industry.

It maintains that, with a combination of autonomous drones and cloud software, any business can deliver straight to their clients' doorsteps. Apparently, the challenge is all in the code.

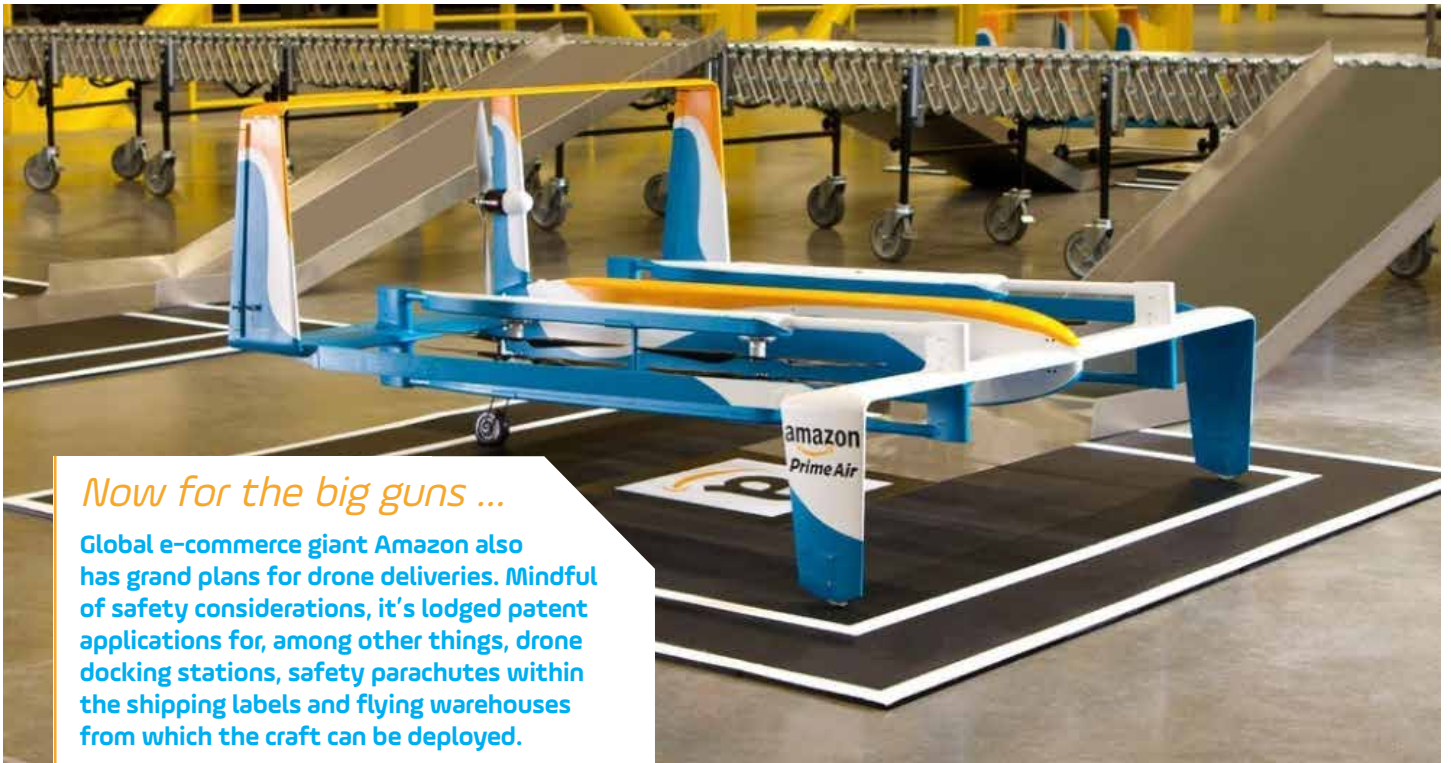
Generally, civilian aviation authorities regulate the operation of drones over a certain weight, particularly for commercial applications ... unlike in the Ukraine, where unmanned aerial vehicles abound but no meaningful attempt at control has been made.

Despite the advances of the Digital Age, it seems though that more future proofing is required before unmanned aerial vehicles are as common as the delivery vans and trucks on our roads.



*Project Wing trials fast-food delivery in the outback.*





## Now for the big guns ...

Global e-commerce giant Amazon also has grand plans for drone deliveries. Mindful of safety considerations, it's lodged patent applications for, among other things, drone docking stations, safety parachutes within the shipping labels and flying warehouses from which the craft can be deployed.

Its latest patent application is for drones that disintegrate if there's a problem, spreading the load of metal and plastic showering down on unfortunate passers-by. While trials are currently underway, legal considerations mean the concept may not take flight for some time yet. Amazon was, however, recently granted a patent for delivery drones that incorporate not just a flight controller but also a 'fragmentation controller' that dictates when certain parts can be broken off and released in the event of an operational emergency.

Meanwhile Alphabet, Google's parent company – also with drone delivery as one of its core goals – has been testing its Project Wing autonomous hybrid drone delivery initiative in the Australian Capital Territory. There, according to project co-leader James Ryan Burgess, the size of estates and housing lots allows flying and delivery in areas not overly populated and where residents interested in new technology and innovation are willing to provide vital feedback.

Unlike traditional quadcopters, says *The Guardian*, Alphabet's Project Wing drones incorporate the best aspects of fixed-wing aircraft and classic rotary-wing drones, in that they're able to travel long distances at high speeds with comparatively little power and can take off and land without a runway, as well as hover in place.

Last month another US retail colossus, Walmart, published a patent, filed in 2017, to create a system of drones that can assist its customers with price verification and locate products for them within its stores. According to the patent, Walmart drones will be fitted with sensors to avoid collisions with other drones, objects within the store and, of course, customers.

Walmart also wants a patent for drone technology that not only pollinates and monitors crops but sprays insecticides as well. In light of bee colony collapse disorder and crashes in bird and insect populations globally in recent times, not to mention the much-opposed Bayer-Monsanto merger, this could be seen as ominously prescient.

## Catch it while you can

Among Japanese company Prodrone's 'revolutionary drones for professionals' is the weatherproof PD6B-AW-ARM. Incorporating two remote-controlled robotic arms, it can attach or join things, cut cables, turn dials, flick switches, drop life-saving equipment, move cargo to out-of-the-way areas and so on. Able to grasp, carry and release a payload of up to 10 kilograms, it can even perch on railings.



And finally ... Ever left your keys at work (or somewhere far more inconvenient) and had to drive or take public transport to retrieve them? That's where UK-based Bizzby SKY's "mobile-first, on-demand drone delivery" can help. An app-summoned service that went live in London three years ago, it uses 'drone highways' to deliver objects like keys or products such as medication almost instantly within the city. Bring it on Oz!

Which Perth-based company is supply-chain planning for the Digital Age?



#### Disclaimer

Links to various sites within this newsletter are for information purposes only and the information presented is not intended to be comprehensive. Nor does this newsletter guarantee, approve or endorse any information, advice or products available on the sites to which links are provided.

The Power of 3 is sponsored by Lithium Australia. Enquiries to [info@lithium-au.com](mailto:info@lithium-au.com).