



TAKING TO THE SKIES

– with The Helicopter Girls

Helicopter Girls **Katya Nelhams-Wright** and **Emma Boswell** have taken their company from a startup two-woman operation in 2011 to a much larger outfit now offering multiple drones, a team of regular pilots and aerial DoPs, plus a brand new drone lighting solution. A recent partnership with aerial DoP **John Marzano** looks set to turn this into one of the most prestigious aerial filming operations in Europe.

After training at Harvard's Film and Visual Studies programme, then working as an award-winning theatre director in her 20s and as a successful documentary maker and camera operator in her 30s, Katya Nelhams-Wright started The Helicopter Girls with co-director and partner, Emma Boswell, in 2011. Since then, the company has evolved from the two of them working together (with Kat flying the drones and Emma operating the cameras) into a fully functioning operation with three high-spec units and numerous pilots, aerial DoPs and support crew on the books, operating on large features, dramas and commercials.

The pair have established a top reputation, presenting an ARRI masterclass in drone filming at Camerimage and being among the first to get their hands on the ALEXA Mini. Their drone work has featured in productions from the cult series *Detectorists* to the feature film *Mission Impossible 5*, British films such as *The Corrupted* and *Hope Gap*, and Amazon's blockbuster series *Jack Ryan*, the first season of which was shot on location in 2017 in Morocco, and this year Katya

has been back with the Paramount crew for three months, filming in some very challenging locations.

Preparation is key

Katya's philosophy is twofold: preparation is key – never leave anything to chance; and always invest and reinvest in the kit to make sure you're offering the best you possibly can. "One of the most important aspects of running a drone company is choosing the right equipment. In the early days, we used to build our own platforms and I became obsessed with how to build the perfect drone for heavy-lift work. I spent hours researching motor/ESC [electronic speed controller] combinations, testing different flight controllers and experimenting with various frames and arm configurations to work out what would give the best performance.

"I designed an X8 octocopter loosely based on a Freefly Cinestar frame with a Tiger motor/ESC power set. Its weight-to-power ratio was really good, meaning we could carry a decent camera and lens package, and still get reasonable

“ I’m still really proud that a drone I designed and built flew on *Mission Impossible 5*.

flight times (back then around 5 minutes). Its first big test was in early 2015 doing VFX plates for *Mission Impossible 5*. The conditions were quite challenging: it was January and cold (which reduces the flight times), we were operating over water, just shy of our full all-up weight of 20kg, with a MoVI 15 gimbal carrying a RED Carbon Dragon and Ultra Primes. We did more than 22 flights in a day and the footage was so smooth it was given a full thumbs up by Double Negative, a reasonable achievement back then. I’m still really proud that a drone I designed and built flew on *Mission Impossible 5*. All these years of R&D gave me invaluable experience in understanding what makes a safe, reliable camera platform.

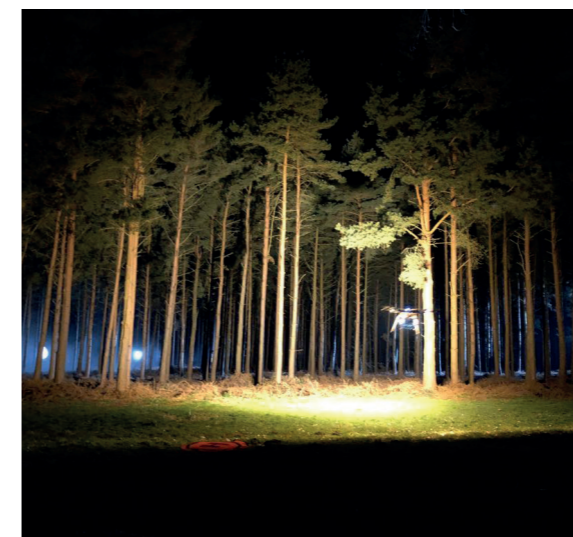
“After that, we really focused in on heavy-lift drone work. It was always my goal to fly bigger and better cameras and glass, so I began to look at ready-to-fly aircraft systems. Initially, there wasn’t much choice, as most manufacturers were just using the same parts I had in my homemade drone, wrapped up in a slick-looking frame. Then, in 2016, along came the Freefly ALTA 8, which is still my aircraft of choice. We have three of them and, in my humble opinion, they are the best cinema drones on the market by a country mile, and arguably the safest. It’s not just an innovatively designed aircraft – a flat octocopter which folds down to less than a metre – it lifts an ALEXA Mini with a decent cine prime and two-axis lens control for 8 minutes, and we’ve flown it with an Angénieux short zoom and Hawk V-Lite anamorphics. I loved it from the minute I first flew it and the best thing about it is a proprietary flight controller with black-box data, which means I know exactly how the aircraft is performing. The level of control we have over the functionality of the aircraft is unrivalled. Translated into a filming context, there isn’t a scenario where

the drone won’t take off, and we can confidently offer our clients a safe and reliable camera platform. Safety is fundamental – especially now we have multiple crews going out and working on high stakes productions.”

Flying in built-up areas

“Creatively, the tendency is more and more towards operating in cities and environments that are hostile for drones. In these situations, you have to be able to trust your aircraft. Something else that is unique to the ALTA is the option to fly with the compass switched off. Every drone on the market uses the compass to help the flight controller know which direction the aircraft is pointing. If the drone doesn’t know that, then it can cause a ‘flyaway’ or crash. These incidents occur when the compass experiences interference on startup, which can be caused by the environment in which you are flying. Earlier this summer we were flying from the 10th floor of a building site to get a shot of Broadgate Circle, right in the heart of the City of London. We were surrounded by metal struts and girders, and so it was no surprise that when we booted up the aircraft it showed compass errors because of all the steel. With any other drone, the flight controller would have prevented takeoff and we would have had to concede to the client that it was not possible to fly from that location. Instead, we were able to switch the compass off, let the drone use its GPS system to find its position and we were safe to fly.

“Working with drones is a continual learning curve as the technology is constantly changing. For a business, this can be quite hard to keep up with but from a creative point of view it’s massively exciting. We are always looking for different ways to use the drone and enhance what we are able to offer productions.”



Left and Right: The Helicopter Girls’ drone light on the set of *The Encounter* in 2018

The drone light

“The latest addition to our kit is a drone light. It’s early days for this as a creative tool, but for the right project it provides a powerful moving light source. Its debut was on an 80s sci-fi feature *The Encounter* earlier this year for cinematographer Bart Sienkiewicz. Bart came to us with a sequence involving UFO flying light orbs through a forest, which he wanted to capture as much as possible in camera. Previous drone light projects have only carried three or four 100W LED lights but that wouldn’t be powerful enough to simulate a flying UFO, so we did some extensive testing and came up with a design that gave him the power he needed.”

“Kat created a 20x100W LED light fixture, which was a very powerful LED light and exactly what I was after,” says Bart. “The UFO orb sequence was shot over a few nights in a large pine forest during the UK winter, so I was a bit worried that the weather conditions would affect the already tricky flight path for the drone. Thankfully, we were lucky with the weather. They did a fantastic job and it worked superbly, thanks to Katya’s amazing work.”

Partnership with Marzano Films

This year sees The Helicopter Girls moving from strength to strength with the emergence of a new partnership with Marzano Films, owned by aerial DoP John Marzano. A fortuitous meeting at BSC Expo in February quickly sowed the seeds of what has already become one of the most prestigious aerial filming operations in Europe.

“We are thrilled to be working in partnership with Marzano Films,” says Katya. “From the first time I worked with John we just clicked. Creatively, he is an inspiration on set and it’s great for us to be able to complement what Marzano Films offers with the full-size helicopter aerals.”

John Marzano was born in Nairobi, Kenya in 1959, but relocated to the UK with his parents in 1961. After graduating from university, he moved to London and started work in the film industry on the bottom rung of the ladder. His passion for imagery soon found him working his way up through the ranks of the camera department, where he learned not just about shot creation and framing, but also about the technical aspects of film cameras. Coming from an engineering background, John found the technicalities of his craft came easily and his technical skills served to enhance his abilities and passion for film-making.



The Mini Eclipse is the latest state-of-the-art gyro-stabilised system for helicopters, aeroplanes, boats and tracking vehicles. It is the only compact sub 70kg platform that can take the super-large lenses such as the Angénieux Optimo 28:340 and Panavision Primo 11:1 zooms. It has GPS tracking capability and the only true fixed horizon due to the unique integration between its inertial measurement unit and GPS receiver



Left: Katya Nelhams-Wright on location in the desert with the ALTA 8 and MoVI Pro
Right: John Marzano on *A Good Day to Die Hard* with the Eclipse SL HD, shooting with an ALEXA XT and Angénieux 24:290

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The Helicopter Girls and Marzano Films have already worked together successfully on four major feature films and several big-budget series for some of the biggest names in the industry.

Eclipse systems

The system John uses is the Academy Award-winning Eclipse XL HD mount: “The best system available for shooting with large payloads such as an ALEXA 65 and Arriflex 435 Imax 65mm film camera, both with 1000’ loads,” says John. The Eclipse is also capable of shooting with six RED WEAPON cameras and lenses in a synced multicamera array, which, when stitched together, provides the VFX team with an ultra-high definition image that can be zoomed into or cropped without losing definition for the final output.

“I’m also proud to offer a compact version of the larger Eclipse, the Mini Eclipse. As a result of its military-grade GPS

and inertial guidance software, this is the only system of its size to have a genuine permanent horizon and, as such, is capable of accommodating large zoom lenses – such as the Angénieux 28:340 and Panavision 42:425 Anamorphic lenses. I have operated most of the gyro-stabilised aerial camera mounts and can honestly say that the Mini Eclipse is a revelation. Its capabilities are unsurpassed by any other system in its class. It was for this reason, I decided to purchase it. To be able to shoot with a compact system that can handle a RED WEAPON HELIUM 8K and the Angénieux 28:340 without suffering a vignette is truly inspiring.”

As a creative partnership, the two companies have moved their entire operation into a newly built office and warehouse based an hour outside London in the Test Valley. They have already worked together successfully on four major feature films and several big-budget series for some of the biggest names in the industry.

“We are thrilled to be coming together at the perfect time, with a mutual passion for what we do and the shared goal to push the boundaries of technology and deliver the most beautiful work we can with efficiency, top-class crew and our naturally personal approach,” says Katya. “We are all looking forward to exciting times ahead.”



One of three in the Helicopter Girls’ ALTA 8 fleet, carrying a MoVi Pro with ALEXA Mini payload



Fact File

The Helicopter Girls are leading exponents of drone cinematography. After many years providing top-class drone services to the TV and film industries, their experience and dedication to quality of service and image is hard to beat. Now, working in partnership with **John Marzano** and Marzano Films, the turnkey service is comprehensive. John has been an aerial DoP for over 20 years and has shot aerial sequences from full-sized helicopters and aeroplanes for many of Hollywood’s biggest blockbusters, including *007* and *Harry Potter* films, and several Ridley Scott movies including *Black Hawk Down* and *The Martian*.

Since forming the partnership, amongst others, they have provided aerial filming crew and equipment to Disney’s *Artemis Fowl* and *Maleficent 2*, Paramount’s *Jack Ryan* and *Catch 22*, and several TV dramas and commercials.

The partnership is fast becoming the ‘go to’ company for quality and experience.

See more about The Helicopter Girls:
<http://thehelicoptergirls.com>

See more Marzano Films: www.marzanofilms.com