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## Remote Piloted Aircraft: Game of Drones

With remote piloted aircraft systems – or drones – increasingly used commercially, what are the insurance risks involved?

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Time moves fast in the world of drones. In the last month alone, UK police announced plans to use unmanned aerial vehicles to survey the land around Gatwick airport after major incidents; Australia declared its intention to have drone fleets patrol its borders; and a US judge overturned a fine issued last year for using a drone to shoot a promotional video. It said the Federal Aviation Administration had no authority over commercial drone use.

**Timeline** *Huerta v Pirker* **June 2013** Raphael Pirker, a Swiss drone operator, is fined \$10 000 by the US Federal Aviation Administration for using a drone to film an advert for the University of Virginia's medical school **October 2013** Pirker files a motion to dismiss the order and the penalty on the basis that there are no written regulations regarding unmanned aircraft systems **6 March 2014** A federal judge overturns the ruling and the fine saying the FAA does not have the legal authority to prohibit drone use **7 March 2014**

FAA appeals the decision to the National Transportation Safety Board on the grounds that the decision "could impact the safe operation of the national airspace system and the safety of people and property on the ground".

The most significant of these for insurers is undoubtedly the latter, as it gives the green light for greater use of remote piloted aircraft in business activities in the US. And while Amazon's personal drone delivery service may still be some way off, the entrepreneurial spirit of America's dreamers means hobbyists, academics and professionals will be vying to find ever more innovative – and lucrative – uses for unmanned airborne devices. However, it is not just in US that regulators are struggling to keep up with the evolving uses of unmanned aerial systems. The European Commission is currently undertaking a study on the liability and insurance requirements generated by remote piloted aircraft systems, with a view to developing an EU-wide regulatory framework. Neil Smith, head of underwriting at the Lloyd's Market Association, attended a knowledge-sharing meeting earlier this month, where representatives from various EU member states shared their approach to regulation. "The underlying thrust was that all these regimes are slightly different," he explains. Among its recommendations to the commission, the LMA has called for an industry-wide definition of what constitutes an RPAS. Due to the significant hazard, loss and third-party risk potential posed by RPASs, the LMA has called for licensing of operators and pilots. It has also proposed a system to link the RPAS with its operator so that it will be possible to trace the origin of the drone in case of accidents. Compared with much of Europe – and even the US, where the issue of commercial drone use is still the subject of legal wrangling – the UK is actually fairly advanced. Under guidelines in place since 2010, anyone operating a small unmanned aircraft of 20kg or less and undertaking aerial work for which remuneration is being received will need permission to operate from the Civil Aviation Authority.

**Obtaining permission** Operators of small unmanned aircraft carrying out surveillance or data acquisition, which involves flying close to people or objects, also require permission from the CAA. To obtain permission, an operator has to prove a sufficient level of competence and an understanding of the safety implications, including allowing the the CAA to see an up-to-date operations manual for the requested activities and evidence that its pilot is sufficiently competent. Since 2010, the CAA has issued over 200 permissions for the use of unamanned aircraft in aerial work. But while the guidelines on who can and can't fly and where are fairly stringent, the insurance requirements are far less onerous. "Anyone using aerial vehicles for work needs to have permission from us, part of which involves seeing that they have liability insurance in place," says Richard Taylor, a spokesperson for the Civil Aviation Authority. "All we need to see is that there is a basic level of cover in place. If people are using [UASs] for private means we have no oversight of that. They don't need insurance for their own personal use," he adds. Mark Welbourn, partner at Kennedys and specialist in aviation, believes many UAV operators may be seriously underinsured. "Legally, all these operators should have insurance that covers them up to 750 000 special drawing rights [supplementary foreign exchange reserve assets defined and maintained by the International Monetary Fund], which at the exchange rate of today is somewhere in the region of £720 000. From speaking with brokers, it seems that some – if not most – operators don't have a specific UAV insurance policy, and certainly not one as far-ranging as your all-risk policy within the aviation market." He continues: "Most of these operators are not your usual aircraft operators and may not be aware of their insurance obligations under EC regulations."

**UK unmanned aerial system rules** Permits are required for small unmanned aerial systems weighing 20kg or less if used for paid aerial work, or undertaking surveillance or data acquisition which involves flying over or within 150 metres of a congested area, over or within 150 metres of an organised open-air assembly of more than 1000 persons, or within 50 metres of any person, vessel, vehicle or structure not under the control of the pilot. Pilots must maintain direct unaided visual contact with the small unmanned aircraft at all times. Within the UK, 'visual line of sight' operations are normally accepted to a maximum distance of 500m horizontally and 400ft vertically from the pilot. Flights beyond this distance may be permitted but the operator is required to provide explicit proof that this can be conducted safely.

**Little appetite** While ignorance may be one reason for operators going uninsured or underinsured, the appetite among insurers to underwrite this business is also likely to be a factor. Though many acknowledge the growing space is likely to offer significant opportunities down the line, first mover advantage is weighed against the fact that UAVs and UASs pose a very different risk from their manned counterparts. As Smith explains, the fact that the pilot is on board leads to a certain amount of self-regulation with manned aircraft. "The pilot has a vested interest in landing safely because they want to be able to walk away. If the drone fails and goes down, unless the pilot is very close then he is going to walk away from it. "But if it comes down into a crowd of people or some expensive property, it can cause significant damage – so there are significant liability issues there. Although it is a rapidly growing area it is still relatively small, and there's not a lot of data. This makes it difficult for insurers to make a proper assessment," he adds. Jay Wigmore, aviation underwriter for Kiln, which offers coverage for both UAS operators and UAS manufacturers for hull, third-party liability, third-party war liability and product liability, says that while insurance products offering the necessary coverage exists, "insurers' appetite to cover this class currently varies wildly". When it comes to hull insurance, insured versus agreed hull values are a major sticking point. The volume of production and regular software upgrades means UASs can decrease in value incredibly quickly. It is a bone of contention between operators, who want to protect the asset for its full purchase cost, and insurers, that don't want to expose themselves to over-inflated values, Wigmore says. The cheap production of vehicles at the lower end of the scale means some drones are almost disposable – the real value is in the equipment they carry, adds David Hitchen, senior aviation surveyor at aviation risk management and loss adjusting firm Airclaims. "The ball turret with a camera and forward-looking infrared thermal imaging can be worth \$800 000, so you could have a situation where the platform costs a lot less than the payload it's carrying. "When you get to the middle and upper ends of the scale, the costs of the unit are going to be quite high. But when you get to smaller battery-operated units with rotary wings, the costs are too low to warrant insuring the hull itself. That's why the majority of insurance initially is likely to be focused on the liability aspect," he says. With concerns around liability and the desire not to antagonise the general public – many of whom remain highly suspicious of drones – Grant Goldsmith, chief executive officer of US-based aviation firm Overwatch, believes much of the early progress will be around what he calls the three

Ds – “desolate, dirty or dangerous”. He says: “If you want to fly a drone over the Fukushima reactor in Japan I don’t think you’re going to have a problem as no one wants to expose a manned aircraft to radiation. The threat to the general public is limited – and the threat to the crew is a lot higher.” In a move that could have significant implications for the insurance sector, Goldsmith also believes the use of drones by loss adjusters following weather events – already happening in the US – will become more widespread. “To be able to use an unmanned system to get above the damage, take pictures and do some sort of survey, you can process many claims much more quickly.”

**Bright future** The future may be bright for some commercial uses – but what about Amazon’s delivery drone army? Will our flat screen TVs be buzzing through the air any time soon? Probably not, says Taylor. “That will require a major technological leap to develop what the industry calls ‘detect and avoid’, which is basically creating an unmanned aircraft that can operate autonomously. “Someone sitting a couple of miles away in an office trying to control an unmanned aircraft is not going to be able to see everything it could come into contact with. The device itself will need to be able to steer around those obstacles. It could be a year, or it could be a decade, but until that technology exists that kind of thing won’t happen in the UK,” he continues. And even if the manufacturing and regulatory hurdles are overcome, insurers are unlikely to rush to insure package delivery systems such as the ones mooted by Amazon and UPS, as the successful tracking and proof of delivery of the cargo present risks for insurers, says Wigmore. He comments: “If such flights take place on a broad scale with large volumes, the potential for cargo legal liability claims could adversely affect insurers if cargo is delivered to incorrect addresses, fails to reach its destination because of technical problems, or if it was intercepted by a third party.”

Once national aviation bodies approve unmanned flights in non-segregated airspace, the potential liability exposure for insurers would increase substantially. As Wigmore points out: “If a bird can bring down an aircraft, a 20 kilogram UAS certainly can”. Goldsmith believes the insurance market for UASs will grow, but says the reluctance of insurers to get their fingers burnt will mean the pool of players will remain small in the near future. “Most insurers don’t want to be the first person dabbling in the transactional minimal premium business of small UASs. Everybody wants someone else to do it first, so they can come into the market later on with their entry product modified off your initial experience.”