Flying into the world of drones

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Agenda

1. Types and uses for drones
2. Law & regulation of drones
3. Drones & insurance coverage issues
4. Claims scenarios
5. Underwriting challenges
6. Market response
7. A look to the future
8. Conclusions

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Types & Uses of Drones

Some (very) basic terminology

UAV = Unmanned Aerial Vehicle

UAS = Unmanned Aerial System

- Vehicles
- Camera
- GPS
- Radio controller
- Propulsion system
- Operator
- etc.

Drones = Common slang

Some (more detailed) basic terminology

UAVs (Unmanned Air Vehicle)

- a power driven aircraft, other than a model aircraft, that is designed to fly without a human operator on board.

UAS (Unmanned Aircraft Systems)

- an unmanned aircraft (UA) and all of the associated support equipment, control station, data links, telemetry, communications and navigation equipment, etc., necessary to operate the unmanned aircraft.

RPAS (Remote Piloted Aircraft Systems)

- a newly emerging definition from the International Civil Aviation Organization that intends to highlight the fact that the systems involved are not fully automatic but always have a pilot in command responsible for the flight. RPAS describes a remotely piloted aircraft, its associated remote pilot station(s), the required command and control links and any other components as specified in the design.

Model Aircraft

- an aircraft, the total weight of which does not exceed 55 pounds (unless otherwise certified), that is mechanically driven or launched into flight for recreational or hobby use only and is not designed to carry persons or other living creatures.

Types of Drones

Drones can range from the size of a Boeing 757 aircraft to the size of mosquito.

- Large/small fixed wing aircraft
- Quadcopters, as well those with 6 or even 8 blades.
- Large fixed winged unmanned aerial vehicles (UAV) that resemble small planes
- Microdrones, which are insect-sized and sometimes insect-shaped, and have flapping wings
- Biomimetic, that imitate naturally occurring animals
- Blimps and balloons
- Pocket sized (foldable, based on origami)

What is a UAV today?

- A handheld toy to a 32,000 pound military vehicle
- $20 to over $100 million

http://amazon.com https://en.wikipedia.org/wiki/Northrop_Grumman_RQ-4_Global_Hawk

Classifications and Categories for UAVs

UAS Description	Weight (Pounds)	Overall Size (Feet)	Mission Altitude (Feet Above the Surface)	Mission Speed (Miles per Hour)	Mission Radius (Miles)	Mission Endurance (Hours)
Nano	< 1	<1	<400	<25	<1	<1
Micro	1 to 4.5	<3	<3,000	10 to 25	1 to 5	1
Small UAS	4.5 to 55	<10	<10,000	50 to 75	5 to 25	1 to 4
Ultralight Aircraft*	55 to 255	<30	<15,000	75 to 150	25 to 75	4 to 6
Light Sport Aircraft*	255 to 1320	<45	<18,000	75 to 150	50 to 100	6 to 12
Small Aircraft*	1,320 to 12,500	<60	<25,000	100 to 200	100 to 200	24 to 36
Medium Aircraft*	12,500 to 41,000	TBD	<100,000	TBD	TBD	TBD

*FAA-defined Manned Aircraft Weight Categories

UAV Components

Airframe

- numerous shell materials
- 3D printing could be the future of airframes

Power Plants/Propulsion System

- Many currently are gasoline and electric engines
- Research being done for solar, steam, hydrogen fuel cells, nuclear, laser, propane fuel cells, magnetic resonance, CNT fuel cell, liquid hydrogen

Communication, Command and Control Systems

- Currently UAVs use radio to communicate to their controller/control center
- HACMS (High Assurance Cyber Military Systems) - software program designed to protect a UAS from cyber attacks
- Volume of video and other sensor data transmitted will require significant communications bandwidth.

UAV Components (continued)

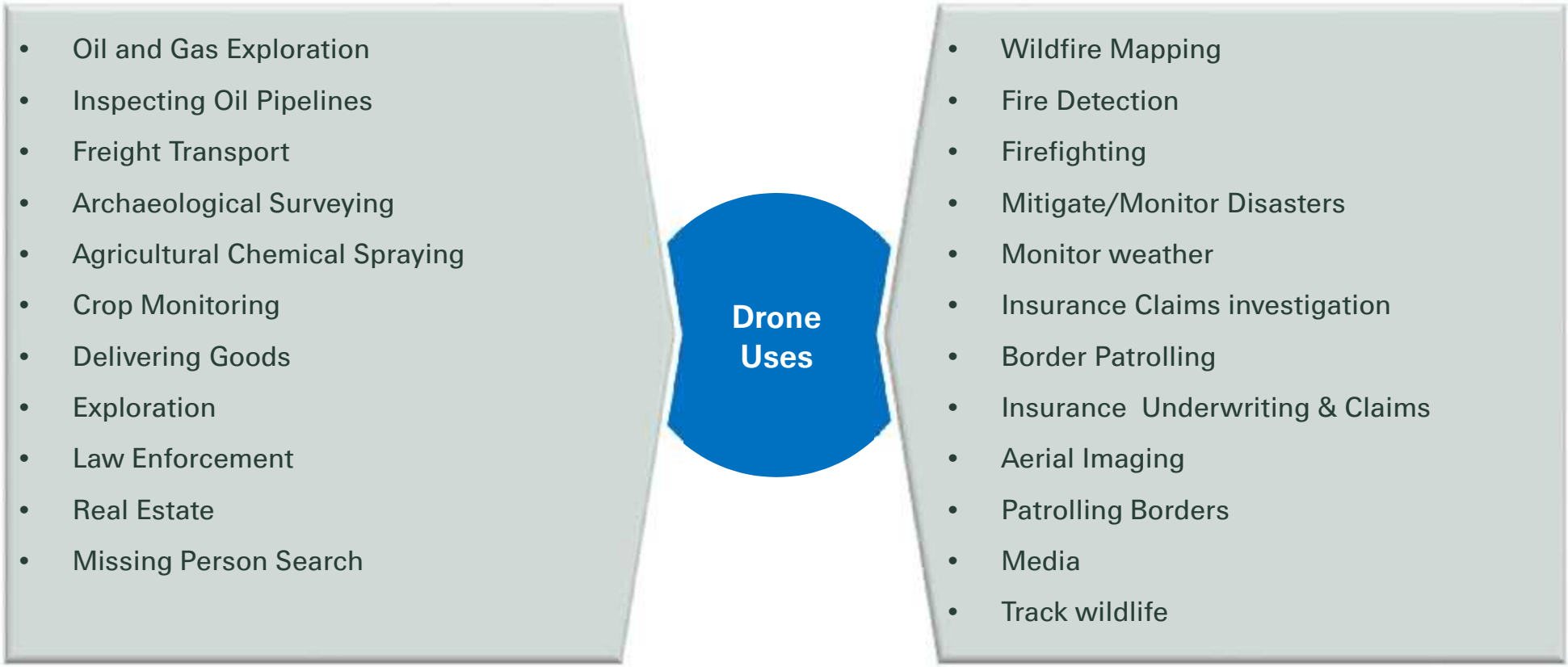
Sensors

- Visual Range Detectors (Cameras), Infrared Detectors, Hyperspectral Sensing/Imaging Spectroscopy, Radar, Acoustic Sensors, Barometers, Anemometer, LIDAR, Magnetometers, Sense and avoid technology

Information Technology

- Cloud computing
- On board data reduction algorithms (gets rid of unnecessary data)
- UAVs computing capability will continue to increase as technology continues to grow and develop.

Commercial Drone Uses



Why the recent growth?

In a word >> technology !!

- Batteries
- High power electric motors
- Small computers
- Low power computers
- Micro-gyroscopes
- Micro-accelerometers
- GPS
- Cameras, video and sensor equipment
- Exterior shell materials

Invasion of the drones

The drone market is blossoming because drones are now affordable.

Sales of small drones dominate, with many hobby and entry commercial drones costing under $300 each.

By one estimate, 500,000 drones of all sorts have been sold in the USA

US sales may top $40 million in 2015 alone. Worldwide consumer drone sales may top $720 million in 2014-2015 alone.

Amazon is selling more than 10,000 drones a month.

FAA estimates global drone sales could exceed $90 billion in a decade, equating to 200,000 units sold each month.

Technology experts are bullish about future sales of drones.

How many are in the sky?

The FAA is issuing an increasing number of permits for the commercial use of drones as it tries to meet the growing demand for unmanned aircraft while it develops rules for their use.

Exemptions to current regulations recently exceeded 1000 due to demand.

- 48% photo/film (Hollywood has led the way)
- 28% real estate (some real estate agents have FAA permission, most do not)
- 23% energy. utilities, infrastructure
- 20% agriculture (farm field surveillance is very common)
- 17% construction
- 3% insurance

The FAA has estimated that as many as 7500 small commercial drones may be in use in the US by 2018, assuming regulations are in place.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Drone Law & Regulation

Drone rules are changing !

Most countries' aviation laws didn't originally contemplate use of drones by public

Law is catching up to technology

US regulation of drones in state of flux

Drones are (largely) a federal affair >> the US government (FAA – Federal Aviation Administration) is the primary regulator of airspace

But does the government control of airspace extend all the way to ground level? 1946 Supreme Court ruling says that landowners have '"exclusive control over the immediate reaches" above their land.

Where does 'navigable airspace' begin and end?

This presents a regulatory dilemma that is far from settled.

Where do we see conflict and controversy?

Is it a model aircraft or UAV ??

- "Model aircraft" vs. commercial UAS/UAV >> hard to distinguish
- Technology for model aircraft has become more sophisticated
- The FAA does not have the authority to regulate model aircraft that meet certain criteria (2012 FAA Modernization Act)
- Term "drone" used ubiquitously for both
- In the law there is a fine line between both
- Generally how do we distinguish?
  - Recreational versus commercial use
  - Regulated versus unregulated
  - Weight

US drone regulation today (tomorrow ??)

Recreational use

- 55 pounds or less
- visual line of sight operation
- no permit required
- voluntary safety rules
- no commercial use whatsoever
- reckless or commercial use can lead to a fine

Non-Recreational Use

- Government or government funded or research use >> Certificate of Waiver or Authorization (COA) required OR § 333 exemption from COA
- Commercial use >> Special Airworthiness Certificate (SAC) required OR § 333 exemption from SAC

Both COA & SAC require operator to have a pilot's license!

How high is compliance?

Change in the rules is very near! October 1 date (will it be met?)

New proposed regulations

FAA published draft rules February 16, 2015 regarding commercial use

- Expected to lead to new era in which UAS flights become common!
- "Most flexible regime for small drones in the world"
- Drone interests favors new rules, a good first step!

New and simple process for commercial operators 55 pounds or less

- Operational requirements much easier!

Final rules could be published as soon as 2016, maybe 2017

- Current SAC & COA requirements remain in force (or get exemption)

FAA draft rules don't (yet) deal with big privacy concerns

- White House issued draft federal privacy rules for public & private use

No private insurance requirements for users (unlike Canada)

No effect on existing FAA recreational drone rules (non-commercial)

What do the proposed new rules say?

Operator passes written exam every two years for FAA certificate

- FAA will publish all info needed to pass exam
- No medical test, no pilot license required (required today for § 333 exemption)
- Background check by DOT

Safety rules must be followed!

- Weigh 55 pounds or less
- Maximum 500 feet above ground & maximum 100 miles per hour speed
- Daytime flight only
- Visual line of sight operation
- No flights near airports or over people
- Always cede way to manned aircraft even if you risk loss of the drone

Backed by cost-benefit analysis

- Replace risky manned flights, e.g., cell tower & bridge inspections, etc.
- Less burdensome rules = more compliance, lower enforcement costs

FAA's Pathfinder Program

Existing and new rules only allow operation during daylight hours and within the visual line of sight of the operator.

- This is a big impediment to unlocking the full potential of commercial UAS, e.g.,
  - inspecting or spraying crops on large commercial farms,
  - responding to emergencies (utilities, pipelines, accidents, extreme weather, etc.)
  - delivering small packages to remote consumers
  - insurance companies that want to underwrite or claim adjust remote risks

To try to mitigate this problem, on May 5, 2015, the FAA announced its "UAS Pathfinder Program"

- FAA will partner with three U.S. corporations -- CNN news service, PrecisionHawk, and BSNF Railroad
- Research ways to extend commercial UAS operations outside the current visual line of sight limitation.

Success for the Pathfinder program would open the door to potentially even larger scale use of UAVs.

State laws vary widely

As of 2015

45 states, 156 bills

26 states have laws

Benefits of Commercialization

Lower labor costs

Safety >> takes the 'human' out of dangerous tasks.

Faster way to gather information.

Reduced cost of environmental oversight and weather monitoring.

Improvement to public safety and law enforcement → surveillance.

Recognition of UAS flights as a data collection tool, with a market driven by the information gained.

Promotes technological development in general.

FAA has approved a fleet of over 300 drones (consulting and service provider)

Benefits for insurers

Claims review, especially in remote areas, after nat cat events and in dangerous situations

- quicker response
- accurate real time information
- cost savings
- safety (for example, fewer workers comp claims since adjusters don't need to climb ladders to access the roof)

Deliver emergency supplies/humanitarian relief

Property surveys

- initial surveys
- validation information
- very powerful when combined with infrared technology - an asphalt shingle can be seen with enough detail to count surface granules, nail pops, roof blisters and other common issues >> remote assessment of damage (or lack of it),

Legal issues to think about (1/3)

Violating FAA Rules

- Fines can be very large
- Injunction stopping use

Physical damage and bodily injury

- What if your drone crashes into property or people on the ground?
- State tort laws may impose liability

Nuisance

- Depending on drone size, noise or kicking up dust onto neighbor's property
- Interfere with neighbor's use of property = lawsuit for nuisance

Legal issues to think about (2/3)

Trespass

- Several states have enacted laws prohibiting drone use over private property without owner consent
- A number of these laws provide a private cause of action for an aggrieved property owner.
- Violating a statute that expressly allows a lawsuit is, depending on the statutory wording, a lot easier to win than winning a tort claim.
- Insurers and drone operators should become very familiar with these statutes.
- Property boundaries are difficult to notice for a drone operator.
  - Because the potential for such a lawsuit is so ubiquitous, insurers have to ask themselves if this is an insurable exposure
  - Legislatures may have to amend their statutes so that innocent use of a drone that unintentionally ventures onto another's property or unintentionally films or photographs people located outside an insured's property is not subject to a lawsuit >> what is ‘unintentional’ ?

Legal issues to think about (3/3)

Stalking and harassment

- Drones could be used by criminal voyeur or stalker and in harassment by paparazzi

Wiretap laws

- Drone could be used to intercept oral communications (commercial microphones can record sound up to 300 feet away)
- Could violate federal wiretap statutes

Conclusion: Drones can be simple to operate, but they create complicated legal problems for users and their insurance companies.


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Drones and Insurance Coverage Issues

Standard ISO Policy Language

ISO's Commercial General Liability Coverage Form, Commercial Umbrella Liability Coverage Form, Farm Owners Liability Coverage Form, Personal Umbrella Liability Coverage Form, Business Owners Coverage Form and Farm Owners Umbrella Liability Coverage Form all provide coverage for "personal and advertising injury"

- Only certain specified offenses are covered

  a. False arrest, detention or imprisonment;

  b. Malicious prosecution;

  c. The wrongful eviction from, wrongful entry into, or invasion of the right of private occupancy of a room, dwelling or premises that a person occupies, committed by or on behalf of its owner, landlord or lessor;

  d. Oral or written publication, in any manner, of material that slanders or libels a person or organization or disparages a person's or organization's goods, products or services;

  e. Oral or written publication, in any manner, of material that violates a person's right of privacy;

  f. The use of another's advertising idea in your "advertisement"; or

  g. Infringing upon another's copyright, trade dress or slogan in your "advertisement".

Is the drone offense covered?

What potential personal injury offenses are covered from the use of a drone?

- Invasion of the right of private occupancy of a room, dwelling or premises that a person occupies, committed by or on behalf of its owner, landlord or lessor
  - Coverage is limited to insured's capacity as a owner, landlord or lessor >> not very "all-encompassing" coverage for an owner of a drone
- Oral or written publication, in any manner, of material that violates a person's right of privacy;
  - Example: using a camera on the drone, the insured photographs or films neighbors and then posts the photos or films on the web.
  - Subject to the Knowing Violation of Rights of Another exclusion: Caused by or at the direction of the "insured" with the knowledge that the act would violate the rights of another and would inflict "personal injury" or "advertising injury
  - Under ISO's FL 00 20 10 06 (farm liability policy) coverage for such offense would also have to "arise out of personal activities or out of operations usual or incidental to "farming."

Fact sensitive and to be decided by a court.

Or not covered?

What potential personal injury offenses or lawsuits are not covered from the use of a drone?

- Invasion of privacy or trespass if the insured is not acting in his or her capacity as a owner, landlord or lessor >> this may be the biggest exposure for drone operators to a suit and it isn't covered
- Nuisance
- Stalking and harassment
- Wiretap laws

Fines by the FAA for flying a drone against FAA regulations

- No coverage because FAA fines are not damages for bodily injury, property damage or personal and advertising injury
- Insurers typically don't cover governmental fines

Is it excluded?

Most policies have an exclusion for liability arising out of an aircraft.

- As a result, would most drone claims for bodily injury and property damage be excluded?
- Depends on definition of an aircraft (not defined in the ISO CGL policy) or if the aircraft definition has an exception; most personal lines policies have the following exception:
  - For example, ISO's HO 00 03 05 11 excludes "aircraft liability" and defines aircraft as any contrivance used or designed for flight except model or hobby aircraft not used or designed to carry people or cargo
  - Cargo is undefined. Merriam-Webster on-line dictionary defines cargo as: "the goods or merchandise conveyed in a ship, airplane, or vehicle".
  - Does a drone designed to only carry a camera qualify as "designed to carry cargo"?

- Only a court can decide

ISO drone endorsements effective June 1, 2015 (see ISO circular LI-GL-2014-179 and LI-CU-2014-022)

CG 21 09 06 15 and CU 21 71 06 15

- Excludes all Unmanned Aircraft without exception + maintains the current aircraft exclusion
- Exclusion applies to both Coverage A and B
  - Coverage B exception for the use of another's advertising idea in your "advertisement" or infringing upon another's copyright, trade dress or slogan in your "advertisement".

ISO created endorsements that only apply an unmanned aircraft exclusion to Coverage A (CG 21 10 06 15) and another one so that it only applies to Coverage B (CG 21 11 06 15).

ISO drone endorsements effective June 1, 2015

CG 24 50 06 15– Limited Coverage For Designated Unmanned Aircraft

- Similar to CG 21 09, but provides exceptions to the exclusions for designated unmanned aircraft, but only with respect to operations or projects designated in the Schedule of the endorsement.
  - allows for entry of an optional Unmanned Aircraft Liability Aggregate Limit in the Schedule.
  - Comparable ISO Commercial Umbrella endorsements were also created

Additional endorsements only apply this limited coverage to Coverage A (CG 24 51 06 15) and another that only applies to Coverage B (CG 24 52 06 15).

Noteworthy:

- ISO does not require that the drone owner and/or operator be in compliance with FAA regulations.
- ISO endorsements do not cover trespass, invasion of privacy or nuisance.

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Claims Scenarios

Potential Loss Scenarios

Drones crashing into people or property (third party liability)

- Pilot error
- Equipment malfunction
- Cyber vulnerability

Product liability claims as a result of drone accident

Invasion of privacy (photos, data collection, etc.)

Cyber criminals hacking into drone (stealing collected data, rogue use, etc.)

Terrorism

What incidents have already occurred?

- Singer Enrique Inglesias was injured by a drone filming his concert. He reached up to grab the drone to give the crowd a close up perspective of his face, and sliced his finger through one of the propellers.
- Near misses during aircraft landings. US Airways flight over Tallahassee, FL nearly collides with UAS at 2300 feet.
- Unauthorized drone crashed into the stands during event at Virginia Motor Speedway and also at US Open tennis tournament.
- Drone crashes onto White House lawn (operator admits he lost control).
- Individuals have swatted/shot drones out of the air over concerns that the drone was interfering with their privacy. Shooting a drone is a federal crime.
- Smugglers using drones to transport drugs.
- Athlete injured when pilot lost control of the drone, which wound up hitting one of the runners in the head, causing minor injuries.
- Restaurant thought it would be cute to fly a drone over diners' heads. Operator tried to land the drone on a reporter's hand but the reporter flinched, sending the drone into the face of her photographer, cutting her nose.

How about claims, lawsuits and related actions?

A drone pilot won a lawsuit against a disgruntled neighbor who blasted his hexacopter out of the sky with a shotgun. Several instances of this type.

California man shoots neighbor's drone out of the sky, thought it was "CIA surveillance device." Drone operator wins suit for $1,000 to replace drone (November 2014)

1000 reckless sightings (mostly drones flying near manned aircraft)

But only five FAA enforcement actions.

Surprisingly enough, very few lawsuits or claims (other than a few lawsuits challenging the FAA's authority)


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Market Response

Casualty Market Response

Avoid >> Evaluate >> Start Slow >> Expand

or

Embrace as a new product opportunity

Basic options:

1. Use ISO endorsements
   a. avoid coverage
   b. be selective with the coverage provided
2. Specimen language
3. Specialty stand-alone product
4. Refer to specialized unit (for example, aviation)

Casualty Market Response

Wide variety of response:

- avoidance
- reluctance
- great new opportunity

Tokio Marine has advertised ‘One Unmanned’ Product

- operators, manufacturers and service providers
- variety of coverage via menu approach


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Underwriting Challenges

Underwriting Challenges - General

- Do we really know what the insured is doing with their drones?
- Experience of pilots and users
- New companies with innovative products/uses but no history
- Cyber liability (shared platforms and networks, cloud computing, data transfer, etc.)
- Implications of data collection
  - The ability to house advanced technology including high-powered cameras, facial recognition technology and audio sensors allows drones to collect a large spectrum of data.
- How will brokers & agents explain exposure and obtain coverage? E&O exposure

Underwriting Issues – Classes of business

Key industries with commercial drone use and exposure (for now):

- film production
- agriculture/land management
- energy (oil & gas, utilities, pipelines, mining, etc.)
- construction
- real estate
- public entity
- news media
- entertainment, hospitality and sporting events

E-commerce and package delivery not yet.

Underwriting Issues – Lines of coverage

Potential exposure/opportunity present in multiple lines:

- commercial general liability insurance (excess & umbrella)
- business owners insurance
- farm owners insurance
- homeowners insurance
- property insurance

And don’t forget:

- aviation liability
- workers compensation
- directors’ and officers’ liability
- professional liability (insurance agents and others)
- cyber liability
- stand-alone drone liability insurance

Underwriting Challenges - Technology Development

Rapid technology development

- Hardware failure (running out of battery power is a leading cause of crashes)
- Broader and more innovative uses of drones
  - Adequate product testing?
  - Operator experience
  - Limited data/experiments
  - Unforeseen risk factors

Multiple sources of product liability

- software (GPS and navigation systems)
- electronic components
- engines
- security systems

Underwriting Challenges - Public Opinion

Increasing popularity of drones in populated areas raise concerns of the public in terms of:

- Safety
- Erosion of privacy
- Terror attacks

43 states (at least) have already considered legislation restricting drone use

The lag between fast developing technology and slow paced regulation

Underwriting Challenges - Public Entity

Unique issues for law enforcement and local authorities

- do they have the means and/or legal authority to address the use of drones?
- But they are 'closest to the action'
- To what extent can 'noise and nuisance' laws be used to prosecute drone users?

How can drones be blocked or kept out of an area? (geofencing)

But they also have many good uses for their own purposes (emergency response, surveillance, inspections, etc.)

Underwriting challenges – regulatory issues

Few persons or organizations have obtained Certificate of Authority or Special Airworthiness Certificates (although exemptions are more frequent now).

- If that is a requirement for insurance coverage, coverage could be illusory because so few persons or organizations who own/operate drones have obtained one. How realistic is it to expect individual users to pursue a Special Airworthiness Certificate ?
- Insurers probably do not want to be in the uncomfortable position where they can be accused by law enforcement or a regulatory agency for fostering or aiding and abetting illegal activity. Many thousands of drones sold in the US but only 1000+ permits issued by the FAA.
- As long as commercial drone operators purchase drones before they receive a COA, they will want insurance on it without having a certificate of authority.
- Policies are not expected to cover fines by the FAA for flying an uncertified drone, but the insured may expect them to unless the carrier and/or agent disclosed this lack of coverage.
- Whether to insure commercial use of drones that don't have an FAA certificate is an important decision that insurers will have to make.

Underwriting Issues – questions to ask

- How is the drone designed? How much does it weigh? What is its range, capacity, and payload?
- What is the cost of the drone? How much will it be to repair or replace? What are the available upgrades? Maintenance schedule?
- Quality of the electrical, engine, and propeller systems
- Will it fly over transportation arteries (airports especially) or densely populated areas? public waterways? In what airspace, and under whose legal authority will it operate?
- Regulatory requirements for use of the drone(s) and the insured's ability to comply with them, including licensing and permitting, authorized environments and attendant duties of care.
- Whether the anticipated risks to be underwritten are negligence, strict liability, or ultra-hazardous activities will affect premium, scope of coverage, and potential exclusions

Underwriting Issues – more to think (and worry) about

- Inevitably claims will be made for events not intended to be covered such as trespass, nuisance and privacy. Insureds will likely expect coverage for these. Managing expectations will be challenging.
- Fly Aways (software glitches, lost connections, wind, etc.)
- Command & Control deficiencies
- Sense & Avoid deficiencies
- Spoofing (someone successfully masquerades as another), GPS Jamming (transmitters that block lawful communications), RFS Interference (radio frequency)
- Security and Privacy concerns
- The Human Factor (particularly the rise in novice users)

Costing Considerations

We expect drones to be with us ‘forever’ so start early (now) to set up exposure fields and cause of loss fields in a data warehouse.

Design application questions accordingly as well as claim information.

Currently there is no loss and underwriting data to base premium charges.

Rate them separately or as part of the overall ‘general casualty’ exposure?

Which rating elements to use ?

- type of drone
- type of use
- payload
- operator experience
- what is/is not covered
- own use or for hire?

Aviation guidance

Primary aviation market may charge $750 – 1000 for a 3rd party liability cover with a limit of $1mm for UAVs below 30 kg (about 66 pounds) payload and visual line of site operation.

Hull cover may be about 12-15% of the insured value with a deductible of 10% of the value.

Hull cover for drones is a higher exposure than cover for manned aircrafts:

- Less alignment of interest (the pilot's life is not at stake)
- Rapid technological development:
  - fast depreciation of drone value => moral hazard (easy way to get a more advanced model)
  - spare parts for repairs are not readily available => crashes often result in full losses

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A look to the future

Where are we headed?

Drones become standard tools of trade.

FAA drops the line of sight requirement ?

Insurance coverage becomes routine and normal ?

Major investments by leading companies (Google, Amazon, etc.) will drive innovation as well as regulatory action.

National drone ‘air traffic control system’ ?

Establishment of common routes (air highways)?

More formal training and license requirements ?

Third party service providers to reduce aerial traffic by providing common information to multiple users >> nat cat claims survey, for example

A major accident?

Conclusions

Conclusions

Technology is out pacing regulation.

Where is the balance between safety, product development and use?

The technology has substantial upside potential across numerous industries and operations that is just beginning to be realized and appreciated.

Inevitably there will be rouge users and other examples of misuse, as well as product failure.

There is currently no clear agreement about what authority the FAA and other authorities have over drones.

There are many insurance challenges, but opportunities as well.

Is the boundless optimism warranted?

Technology is both a barrier and an opportunity.

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Helpful Resources

Helpful Resources

FAA Unmanned Aircraft Systems
(https://www.faa.gov/uas)

Association for Unmanned Vehicle Systems International
(http://www.auvsi.org/home)

Drone Law Journal (http://dronelawjournal.com)

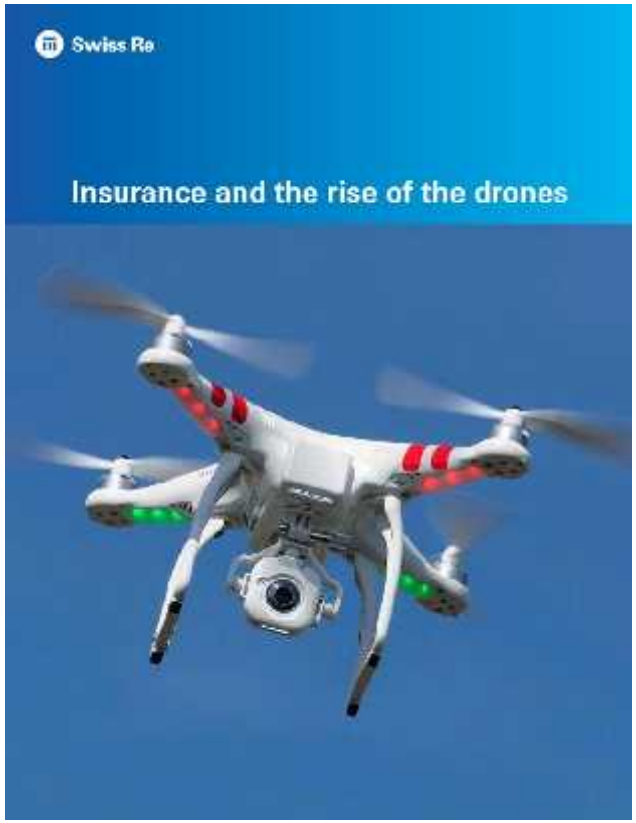
Drone law blog (http://dronelaw.com)

Domestic Drone Information Center
(http://www.nacdl.org/domesticdrones)

Drone View Technologies
(http://www.droneviewtech.com/industry-resources)

Swiss Re report

http://www.swissre.com/reinsurance/insurers/aviation/No_winging_it_insurance_and_the_rise_of_the_drones.html



Thank you!

Speaker Biography

Robert Weireter
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Bob specializes in environmental, energy, and construction liability as well as emerging risks and general casualty. Prior to joining the insurance industry 18 years ago, he spent 12 years in the environmental consulting business working on hazardous waste site investigation and clean up, regulatory compliance, and property transfer due diligence. Bob has a B.S. in Natural Resources Planning, a M.S. in Environmental Science, and a M.B.A. in Management/Finance.

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