Where will the drones take us?

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Agenda

1. Underwriting challenges
2. Market response
3. A look to the future
4. Conclusions


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Underwriting Challenges

Underwriting Challenges - General

- Do we really know if the insured has a drone? what are they doing with it?
- 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

The Drone Zone

Aviation vs. Casualty: Where does coverage belong?

Casualty

- smaller size (for example, less than 30 kg or so weight)
- operated only within visual line of sight
- operated only in non-controlled airspace
- products liability for drone manufacturers, including component parts (non-aviation specific manufacturers)

Aviation

- UAVs not meeting the above criteria
- cover for hull (including on-board equipment)
- cover for cargo and/or carve back for care & custody (both are payload covers)
- fleets (how many?)

Underwriting Issues – Lines of coverage

Potential exposure/opportunity present in multiple lines:

- commercial general liability insurance (primary, 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, drone operators?)
- 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 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).

- Is that is a requirement for insurance coverage?
- Many more drones are sold than permits issued.
- 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)

Underwriting and 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?

Underwriting and costing considerations

Which rating elements to use ?

1. type of drone (altitude, weight, speed)
2. type of use (complexity of operation)
3. flight within or beyond visual line of sight
4. payload (technical sophistication of video, sensing and data equipment)
5. operator experience
6. operating environment/flight area
7. what is/is not covered
8. own use or for hire?

It is challenging to combine these into clear risk categories.

Need specific coverage language.

Aviation guidance

Primary aviation market may charge $750 – 1000 for 3rd party liability cover with 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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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)

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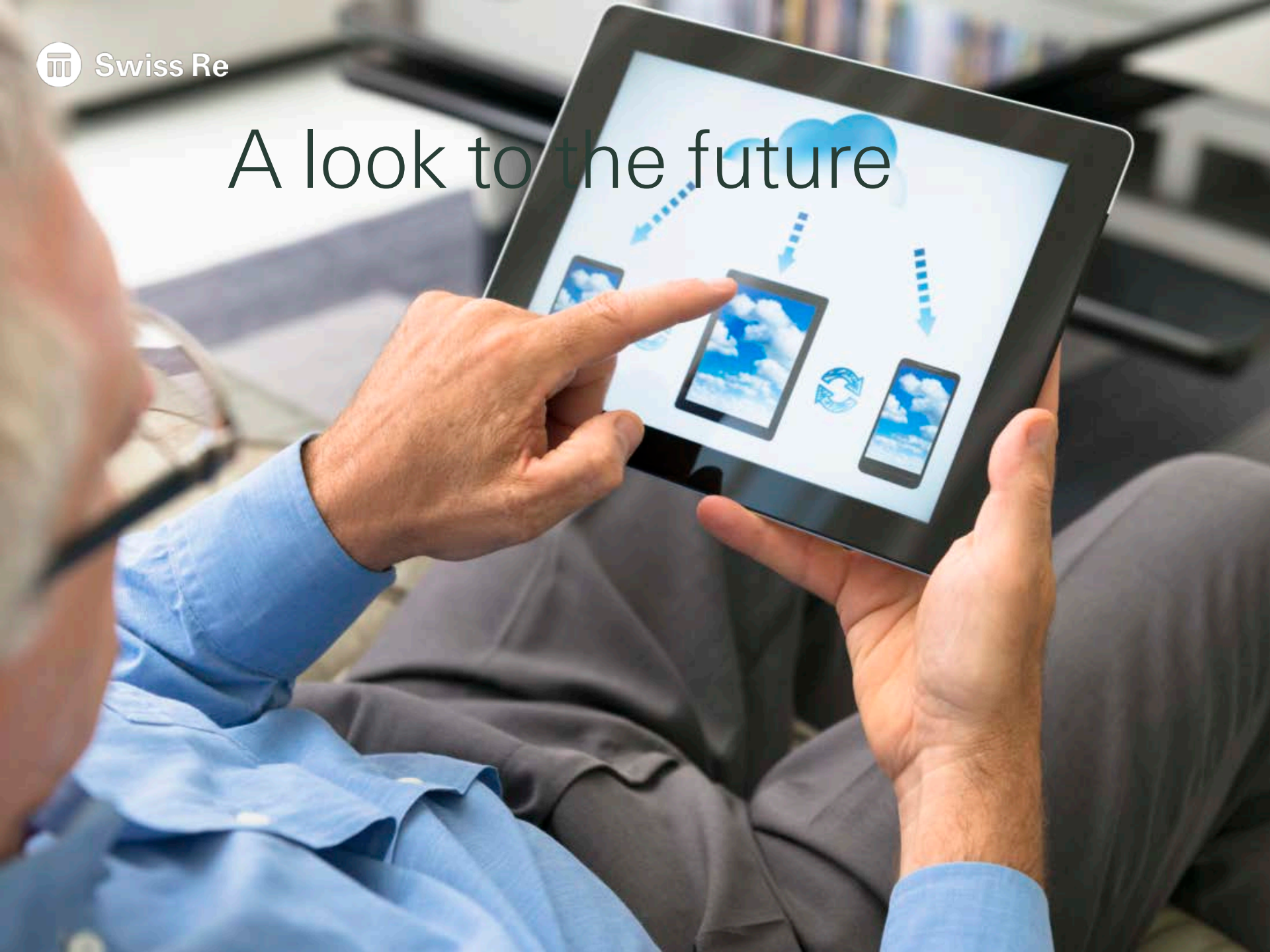
A look to the future



Where are we headed?

Drones become standard tools of trade (self use as well as specialty service providers).

FAA drops the line of sight requirement ?

Insurance coverage becomes routine and normal ?

Major investments by leading companies 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 rogue 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

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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 20 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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