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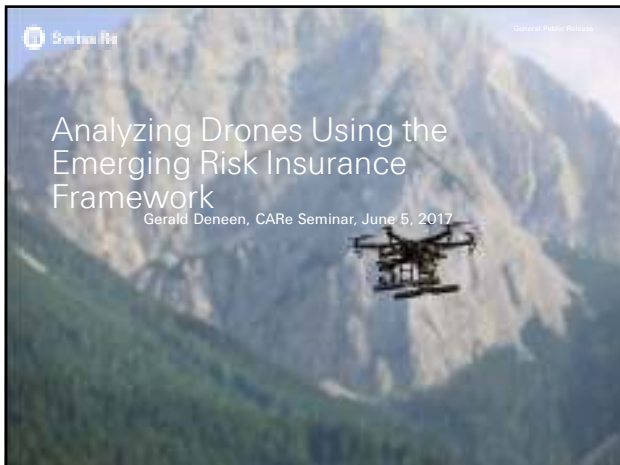
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## Analyzing Drones Using the Emerging Risk Insurance Framework

Gerald Deneen, CARe Seminar, June 5, 2017

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## Drone emerging risk challenges

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**Drone emerging risk challenges...both qualitative and quantitative for insurers**

**How do you identify, measure, classify, and price the drone risk with credibility? Too unique and no historical data**

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# Drones and the Gartner hype cycle

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## Drones and the Gartner hype cycle

- **Plateau of Productivity:** Mainstream adoption starts to take off. Criteria for assessing provider viability are more clearly defined. The technology's broad market applicability and relevance are clearly paying off. Separate hype from the real drivers of a technology's commercial promise.
  - Agricultural Sector
  - Construction
  - Real estate photography
  - Pipeline exploration



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## Drones and the Gartner hype cycle

- **Trough of Disillusionment:** Interest wanes as experiments and Implementations fail to deliver. Producers of the technology shake out or fail. Investments continue only if the surviving providers improve their products to the satisfaction of early adopters.
  - For drones, laws need to change to make them practical for some industries or sectors
    - Home delivery of retail goods
    - Law enforcement
    - Homeowners insurance
      - Roof inspections
  - Fear that all drones will be grounded because of privacy and intentional infliction of injury (terrorism) concerns



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## Drones emerging risk opportunity: the nature of risk (main loss drivers from drone use)



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### Drones emerging risk opportunity: the nature of risk (main loss drivers from drone use)

- **Loss drivers arising out of drones**
  - loss of positive control or a collision causes:
    - third party bodily injury and/or property damage
    - damage to hull
  - activity that violates aviation law causes:
    - accident with private or commercial aircraft
      - should these losses be excluded or covered by insurers?
  - trespass
  - invasion of privacy
  - nuisance




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## Emerging risks: insurance “enabler” role for drones



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## Emerging risks: insurance "enabler" role for drones

**Insurance as "Enabler"** ▶ Supports the development of and response to social, technical and economic evolution by managing and financing the associated risks

### Three Stages of Insurance Coverage

1	Early study period	<ul style="list-style-type: none"> <li>▪ Efforts to understand exposure</li> <li>▪ Risks may unknowingly be covered</li> </ul>
2	Apprehensive phase	<ul style="list-style-type: none"> <li>▪ Initial risk knowledge leads to concerns</li> <li>▪ Insurers look to reduce/contain coverage</li> </ul>
3	Mature phase	<ul style="list-style-type: none"> <li>▪ Increased risk knowledge = enhanced understanding, leading to...</li> <li>▪ Risk management, customized coverage &amp; other approaches, at reasonable prices</li> </ul>

Source: R. Blumenthal - Unfamiliar Exposure - Insurance Networking News, 2008 and Gerry Finley of Marsh & McLennan's earlier presentation

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## Early study period: efforts to understand the exposure

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### Early study period: efforts to understand the exposure

- **Until part 107 (§107) to Title 14 Code of Federal Regulations (14 CFR) was enacted on August 29, 2016, no one knew when a drone was flown illegally <https://www.gpo.gov/fdsys/pkg/FR-2016-06-28/pdf/2016-15079.pdf> . Should insurers cover or exclude:**
  - a drone that does not meet the unmanned aircraft physical parameters such as weight (55 lbs including payload § 107.3), speed (<100 mph § 107.51), lighting, etc., described in the new FAA rule
  - a drone operated by a person (remote pilot in command) without the proper FAA licensing credentials §§ 107.12 & 107.19



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Early study period: efforts to understand the exposure

- **Should insurers cover or exclude the use or operation of a drone that is not in compliance with FAA Regulations:**
  - flying at night or twilight 14 CFR §107.29
  - visual line of sight 14 CFR §§107.31 & 107.33
  - failure to obtain prior authorization from the applicable airport's air traffic control tower or center (ATC) when flown in Class B, Class C, or Class D airspace or within the lateral boundaries of the surface area of Class E airspace 14 CFR §107.39
  - not be flown over human beings unless (a) the human being is directly participating in the operation of the small unmanned aircraft 14 CFR §107.41
  - when flown within 5 miles of an airport for hobby or recreational use, the drone operator provides the ATC with prior notice of drone operation and receives permission to fly the drone (§336 of Public Law 112-95)




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Early study period: efforts to understand the exposure

- **Should insurers cover or exclude the following torts that arise out of the use or operation of a drone:**
  - Trespass
  - Nuisance
  - Invasion of privacy
- **If not (apprehensive phase), how do you prevent your agent from an E&O claim?**
  - Insured's expect this coverage when buying a drone policy!




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Early study period: risks may be unknowingly covered




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**Early study period: risks may be unknowingly covered**

- **Personal lines policies**
  - Many have an exception to the aircraft exclusion.
    - 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
    - Model or hobby aircraft is undefined. Recommendation is to define the term in the policy using language from §336 of Public Law 112-95
  - Review property section(s) of policy language for coverage of hull. May want to exclude or sub-limit or have a separate high deductible
  - Many proprietary personal umbrella policies list invasion of privacy as a covered personal injury offense. With drones, this exposure increases exponentially. May want to remove or modify.

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Drone "known" "unknowns"

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**Known unknowns for insurance coverage of drone hull policies**

- No credible rates because the exposure is so new
- No credible deductible credit percentages
- No credible charges by peril or cause of loss:
  - damage to drone from collision in air
  - damage to drone from take-off or landing
  - theft
  - damage arising out of an inexperienced or unqualified operator
  - loss of positive control
    - anecdotally, hull damage from loss of positive control is so frequent to the point it might not be insurable (apprehensive phrase)
- Replacement cost or ACV
  - depreciation rate of drones and market value of used drones
  - cost to repair a drone and who does the repair?



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### Known unknowns for insurance coverage of drone liability policies

- No credible rates because the exposure is so new
- How often does a drone "fall from the sky" and cause bodily injury
  - very few known instances so far
  - how effective would policy exclusions be?
- How often will people sue for:
  - trespass
  - nuisance
  - invasion of privacy
- If they sue, what is the average cost per claim for insurers for both defense and indemnity?
- How much airspace above ground level does one own above their owned property?
  - laws supporting 400 feet, 500 feet and 1,000 feet, but nothing certain. It will be up to a court to decide, unless Congress passes a law stating so
  - uncertainty increases insurance costs
- How will FAA effectively enforce their laws?



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### Should insurers provide drone insurance including coverage for the hull, trespass, nuisance and invasion of privacy?

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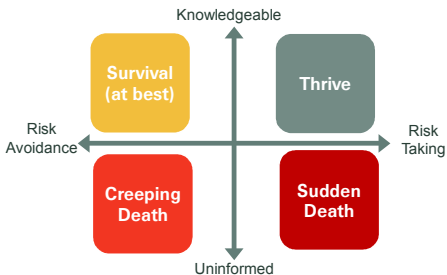
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### Should insurers provide drone insurance including coverage for the hull, for trespass, nuisance and invasion of privacy?



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# Questions and Discussion



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