


The Latest Buzz: Drones and Energy Companies

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The Latest Buzz: Drones and Energy Companies

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Unmanned Aircraft Systems (UAS) Operations Safety / Risk Management



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Unmanned Aircraft Systems (UAS) Operations Safety / Risk Management

- UAS applications
- UAS operations requirements
- Why 838 Inc.
- 838 Inc. services
- Value proposition
- Defining UAS potential risk
- Broker team utilization

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UAS Applications

Why UAS?

- Can operate in areas of high risk reducing exposure to humans
- Can be programmed to operate in precise, repeatable patterns
- Can maintain a constant, persistent presence performing tedious tasks
- Have the ability to carry payloads for various sensors such as cameras, video, infrared, and many others
- Much less expensive than larger, manned aircraft

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UAS Applications

- Safety
- Security
- Leak detection
- Marine mammal monitoring
- Magnetic field surveys
- Pipeline integrity
- Improved jobsite communication and safety
- 3D modeling
- Real-time imaging for inspections
- Significant cost benefits versus manned aircraft
- Can operate in areas unavailable to manned aircraft
- Vegetation management

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The Role of Federal Regulations / Guidance

- FAA regulates by regulations, advisory circulars, policies, and orders
- Encourages safety management systems (later discussion)
- FAA puts UAS systems into three categories
 - Hobby / recreation
 - Public operations
 - Civil operations

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Hobby / Recreational UAS

- Self-regulated
- Section 336 of the FAA Modernization and Reform Act of 2012
- Advisory Circular 91-57

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Public / Commercial UAS Operations

- FAA classifies non-recreational UAS as “Aircraft”
- In order to fly an “Aircraft,” three things are needed
 - Certificate of Airworthiness
 - FAA Registration
 - Pilot’s License

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Public Operations

- Airworthiness issued by COA
(Certificate of Waiver or Authorization)
 - Permits public agencies and organizations to operate a particular aircraft, for a particular purpose, in a particular area
 - 60 business days to process
- Still requires registration and Pilot’s License

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Commercial Operations / Now

- Airworthiness issued by Section 333 Waiver & COA or Special Airworthiness Certificate (SAC)
 - 333 Waiver allows an operator to perform commercial operations in low-risk, controlled environments
 - 120 day approval process
 - “Blanket” COA
 - Flights at or below 200 feet
 - Aircraft weight less than 55 pounds
 - Daytime visual flight rules (VFR) conditions and within visual line of sight (VLOS) of the pilots
 - Stay certain distances away from airports or heliports and people
 - May apply for additional COA outside the “blanket” COA
 - Still requires Registration and Pilot’s License

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Commercial Operations / Future

- Current Notice of Proposed Rulemaking (NPRM)
 - Operational limitations
 - Operator certification
 - Aircraft requirements

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Federal Regulations Summary

- Commercial use of drones can be legal in this country with many limitations
- The FAA Modernization and Reform Act of 2012 included money for the modernization of the country's air traffic control systems as well as an expansion of airspace to accommodate the commercial use of UASs
- Congress has tasked the FAA with integrating UASs into the national airspace system by late 2015

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Federal Regulations Summary

- For commercial operations, the FAA has granted Section 333 waivers to 800+ commercial operators with 20+ platforms up to 250 pounds
- The FAA is working to develop effective policies and standards that will address: increasing UAS capacity, efficiency, and predictability while enhancing safety; operating globally; creating a flexible paradigm for airspace uses; and mitigating congestion with a concern for protecting both safety and the environment
- In 2013, the Drone Aircraft Privacy & Transparency Act was introduced to create a regulatory scheme for the private use of drones, including privacy protection, data collection, and enforcement

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Practical UAS Operations Requirements

- Navigation system architecture
 - Guidance options
 - Beyond line-of-sight (BLOS) operations
 - Threats
 - Countermeasures
- Control and communication (C2) link and backup
 - Disruptions
 - Contingency operations

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838 Inc. Services

- Safety and risk identification and reduction experts
- Safety driven company accustomed to managing complex business operations
- Military operations experience / command and control software to optimize operations and logistics
- Training experts in government and commercial systems dealing with critical / high-risk operations
- Manage real time operations without failure

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838 Inc. Services

- Experience in airspace system rules and integration
- Real-time performance monitoring (CoMotion)
- Operations and safety training
- Operations (and airworthiness) programs design and documentation (manuals)
- Mishap investigation / root cause analysis

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Value Proposition

- Common operating picture
 - Managed service
 - Command and control of all assets
 - Unprecedented operations and logistics collaboration
 - Real-time operating picture
 - Unmanned aircraft system integration
 - Integrated safety and risk management



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The Latest Buzz: Drones and Energy Companies

Cynthia Fee

Senior Risk Management Analyst
Sacramento Municipal Utility District

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Sacramento Municipal Utility District

- **6th largest US municipal utility**
 - Approx. 614,000 customers; \$1.5 billion annual revenue
 - Serves Sacramento County (85 miles NE of San Francisco)
 - Rates set by publicly elected Board of Directors
 - No financial interdependencies with the city, county or state
- **Diverse generation portfolio (1813 MW)**
 - Hydro (13 dams, 8 plants)
 - Natural gas (4 plants)
 - Wind

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Sacramento Municipal Utility District

- Application submitted for Certificate of Authority (COA)
- Challenges
 - COA issued for governmental function
 - Broadly or narrowly interpreted?
 - Evolving regulations
 - Differing requirements based upon time COA issued
 - Specified UAS, specified pilot
 - Insurance
 - Owned and operated – fall under aircraft exclusion?
 - Endorse onto casualty tower or separate aviation policy

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Drone Utilization

- **Line patrol**
 - Transmission lines
 - Distribution lines
- **First person on pole**
 - New OSHA requirement = 100% fall protection
- **LiDAR studies**
- **Confined space inspections**

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Risk Concerns

	First Party	Third Party
Physical security of plants	X	
Property damage	X	X
Privacy		X
Attractive nuisance		X
Contract risk	X	X

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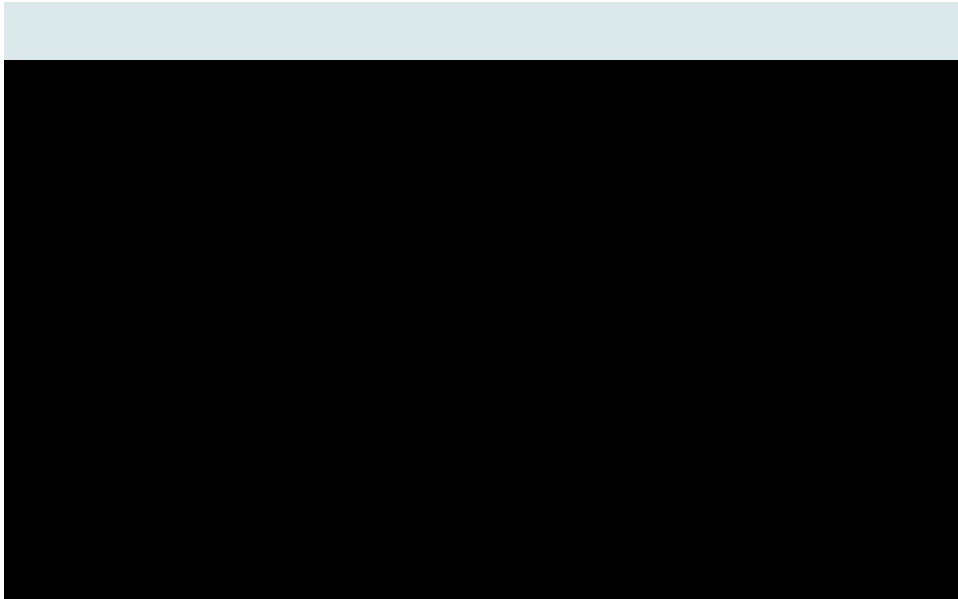
Risk Concern

Physical security of plants

- Detailed close-up videos and photos of plants
 - Security measures and weaknesses
 - Equipment connections
- Unmanned substations
- Detection is challenging
- Recreational fly-over or threat
 - Example – France nuclear plants
 - Example – SMUD Rancho Seco decommissioned nuclear

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Mitigation Strategies

Physical security of plants

- Support legislation expanding no-fly zones
- Detection and prevention technology
- Physical barriers
- Trespassing – notify police, sheriff, FBI, NRC

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Risk Concern

Property damage

- First party and third party risk
- Proximity to energized equipment
- Loss of control
- Wildfire risk
- Business interruption or contingent business interruption

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Mitigation Strategies

Property damage

- Micro UAS
 - Collisions not likely to cause damage
 - Too small to cause phase-to-phase faults
- Line of sight required
- Licensed pilot

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Risk Concern and Mitigation Strategies

Privacy

- **Risk concern: privacy**
 - Public perception
 - Future litigation
 - Future legislation
- **Mitigation: privacy**
 - Internal policies, procedures and controls
 - Recording and retaining video feeds – defense against claims
 - Monitor legislation

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Risk Concern and Mitigation Strategies

Attractive nuisance

- **Risk concern: attractive nuisance**
 - Shooting
 - Theft
 - Third party injury
- **Mitigation: attractive nuisance**
 - Public awareness
 - Advance notification

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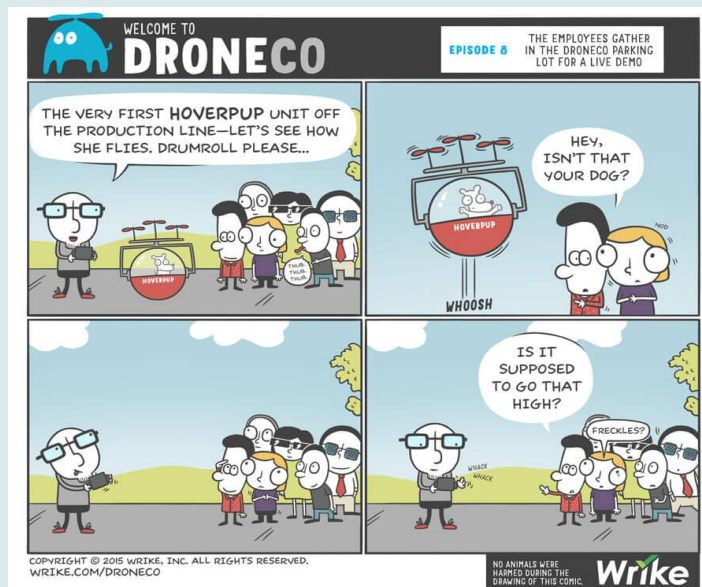
Risk Concern and Mitigation Strategies

Contractors

- **Risk Concern: contractual risk**
 - Contract for service, UAS not owned
 - Non-standard insurance – CGL or Aviation
 - Determining proper limits
- **Mitigation: contractual risk**
 - Contractor insurance
 - Specify permissible endorsements
 - Require additional insured protection
 - Specify compliance with federal, state and local regulations

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Derek Whipple

Managing Director
Aon Global Power

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Unmanned Aircraft Systems (UAS) Insurance Implications

- Overview of current landscape
 - Non-owned operations
 - Owned operations
- Property considerations
- Directors and officers liability
- Environmental liability
- Other liabilities?

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Overview of Current Landscape

Why should we care?

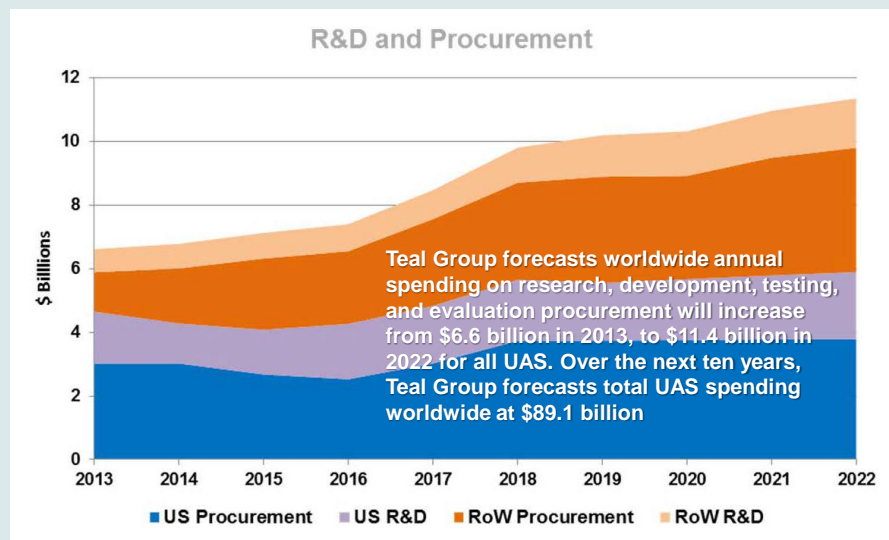
- The Federal Aviation Administration (FAA) estimates that by 2020, about 30,000 small, unmanned aircrafts will be used for all types of business purposes
- The FAA estimates that roughly 7,500 commercial drones could be viable in five years

Property Casualty 360 – January 2014

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Overview of Current Landscape



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Overview of Current Landscape

Non-owned operations

- Full \$35 million limit available from AEGIS
- Attaches at corporate retentions
- All drones up to FAA 55 lb. maximum
- Can provide coverage beyond VLOS if FAA exemption obtained
- Other carriers – can purchase primary limits cost effectively
- Some utilities assuming higher self-insured retentions
- Many utilities looking to obtain more additional insured cover and stronger contractual wordings from vendors

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Overview of Current Landscape

Owned operations

- Owned units can be scheduled on excess basis
 - Purchase primary limits similar to non-owned
 - Hull also available
- Third party operators
 - Generally limits of \$1 million – \$2 million purchased for small UAS
 - Up to \$5 million commercially available, larger limits for larger UAS
- Pricing depends on variables such as size and weight of aircraft, usage (type and amount), pilot experience, etc.

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Property Considerations

- Most policies will exclude the drone but cover resulting damage
 - Review policy exclusions (i.e., T&D)
- Terrorism – standalone programs similarly structured with respect to coverage

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Directors and Officers Liability

- Policies are silent, no exclusions
- Prudent risk management practices
- No perceived greater exposure than any other company risks

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Environmental Liability

- Smaller UAS present very minimal risk – larger ones?
- Environmentally sensitive areas
- Water reservoirs
- Pollution Legal Liability (PLL) and Contractors Pollution Liability (CPL) may offer coverage
 - Policies are silent on drones
 - May include natural resource damage coverage

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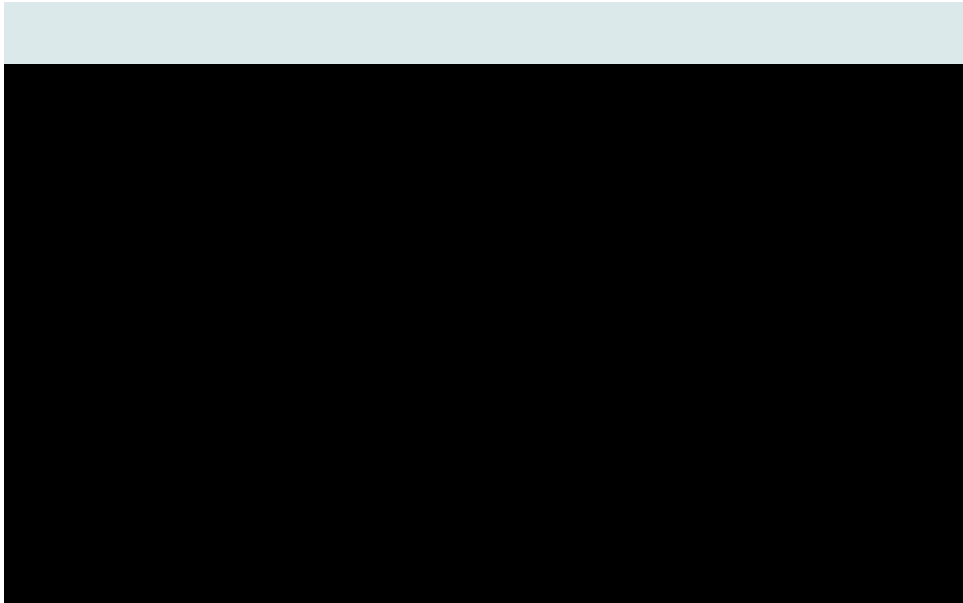
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Other Liabilities?

- Can a property owner claim a drone is “trespassing” on their land?
- What about claims of invasion of privacy and spying?
- Cyber – is hacking a concern?
- Other????

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Questions



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