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• Current Uses of Unmanned Aerial Systems (UAS)
Enrique Inglesias Concert, May 31, 2015

• Enrique was airlifted to Los Angeles for treatment and had a skin graft done to repair his finger.

• He is reported to have minor nerve damage (may be permanent even after rehab).
On May 31, 2015, Enrique Inglesias was injured by a drone filming his concert in Tijuana, Mexico. As in all his other performances, Enrique reached up to grab the drone to give the crowd a close up perspective of his face, and sliced his right hand's middle finger through one of the propellers. He continued to perform for 30 minutes.
Man Versus Drone

- Recently, in Huntington Beach, a drone was swatted out of the air while it was filming an instructional video. A shirtless man, afraid that the drone would fly over his home, used his shirt to demolish a $1,350 drone owned by Lucky 7 Drones.

- Lucky 7 Drones has since filed suit.

- http://youtu.be/TgPaJHBMleU
• Both recreational and commercial drone use has become increasingly common in the United States.
• Though commercial drones must be flown by licensed pilots, drones are not flown on designated flight paths like commercial airliners.
• This poses a problem: how can we assess the risk of open airspace with a growing drone market?
• Lets look at some industries utilizing drones.
Motion Pictures

• Hollywood was the first major commercial industry to receive limited licensing from the Federal Aviation Administration (FAA) to fly drones.
• The Motion Picture Association of America (MPAA) applied for FAA exemptions on behalf of seven film companies to fly drones for filming. All seven petitions were excepted.
• MPAA argued that flying drones would be:
  – Much safer than flying helicopters for aerial filming.
  – Keep filming in the U.S. Movies like the “Lord of the Rings” Trilogy and “Skyfall” (James Bond) were shot outside of the U.S. with the use of drones.
• FAA exemptions for closed-set filming is becoming increasingly common.
Agricultural and Farm Surveys

• Drones can help yield better crop!
  – Infrared pictures of the fields
  – Mapping irrigation patterns
• There are 50 companies with FAA Section 333 Exemption to use drones in agricultural surveillance and commercial use.
• But, many farmers are purchasing drones for agricultural surveillance and skipping the middleman.
• Niche companies are marketing personal drones directly to individual farmers.
Farmer Drone Surveillance

• The eBee, by senseFly, takes infrared pictures of a field and uploads the data to a handheld device, like an iPad.
• Helps a farmer determine where the field needs more water or fertilizer on his crop
• Can upload information to a tractor for immediate change in production strategies to improve yield.
Douglas Trudeau was the first real estate agent to be approved for drone photography by the FAA (approved in January, 2015).

- He is approved to take photos and video of available real estate for marketing purposes.
- He is now attempting to amend his approval so he can fly within five nautical miles from an airport, pending the airport's approval.

Many companies are noticing the utility of drone work and are enveloping many different uses into one petition to market to more than just one commercial industry.

- Some are including real estate photography along side construction surveillance, insurance evaluations and special event filming.
• Drones could be used for risk management and assessing exposures.
• Drones can also be flown over damaged property to assess the extent of the damage for more accurate claims evaluation.
The Nevada Desert Research Institute is developing a drone to aid with cloud seeding.

Cloud seeding releases silver iodide into clouds to help crystalize water, causing it to rain.

Drones can stay in the air longer than a conventional aircraft and can collect information about storm patterns as they help make it rain.

**Good?** Researchers say that silver iodide is safe generally but a heavy conductor, so the process of cloud seeding is never performed during an existing storm.

**Bad?** Other environmentalists believe that cloud seeding could harmfully impact the environment.
Take Flight UAS, LLC, has been approved by the FAA to do natural resource monitoring. The company will use 3DRobotics X8+ and Bormatec Maja UAV drones in conjunction with universities and private research companies for "cropland observations, invasive species monitoring, geomorphic surveys, forest and rangeland health, wildlife, wildfire, and habitat restoration." They hope to increase crop yields while also impacting water conservation efforts.

- 3DRobotics X8+
- Bormatec Maja UAV
• GCS Surveying, Inc., approved on May 8, 2015, Precision aerial surveying of oil, power and gas industries.
• The company operates out of North Carolina and has been using conventional survey methods for over a decade.
• Drones may help the company operate more efficiently.
• The San Diego Gas and Electric Company has permission from the FAA to use drones in surveying utilities and equipment.
• Safer way to check in on power lines and pipelines.
Cell Tower Inspection

• Drones can inspect tower conditions and connectivity.
• ETAK Systems, Inc., approved on April 2, 2015, are using drones to check that antennas and lines are secured to cell towers and "view and record open antenna locations on towers for potential future modifications and additions."
• Applied August 3, 2014: Network Medial Services
  – Wants to use drones for aerial photography and cinematography for the television broadcast industry

• Applied June 5, 2015: Drone NY, Inc.
  – Wants to use drones for real estate videography and photography; wedding videography and photography; land survey and appraisals; equipment inspections; roof inspections; construction sites before and after; precision agriculture; creation of commercial messages for television; search and rescue operations; motion picture filming; and increase public knowledge of UAS and promote safe UAS operations
What Is UAS, History of UAS
• **UAV**
  – Unmanned aerial vehicle

• **UAS**
  – Unmanned aerial system
  – Includes:
    • Vehicles
    • Operator
    • Radio Controller
    • Etc.

• **Drones**
  – Common slang

• **Hobbyist**
  – Significant effort to construct
  – Significant skill to operate
Kettering Bug

- Cruise missile
- Elmer Sperry guidance system
- Orville Wright as consultant
- First flight Oct 2, 1918
- 45 produced
WW-II

• WW-II V-1 “Buzzbomb”
  – Originally designed for radio control
  – Later operated with internal guidance system
  – ~30,000 produced
  – 4,740 lb. gross weight

• Fu-Go
  – Japan launched ~9000 balloons
  – Active control system
  – Estimated 7 percent to 10 percent hit the U.S.
What’s a UAV Today

• Handheld Toy to 32,000 lb. military vehicle
• $20-$131 million?

Common UAV Types

Fixed wing

Rotorcraft:
Why the Recent Changes?

• Use has grown.
• Availability has exploded.
• TECHNOLOGY!
New Technology

• Li-ion batteries
• High power electric motors
• Small computers
• Low power computers
• Micro-gyrosopes
• Micro-accelerometers
• GPS
Inertial Measurement

- Apollo Primary Guidance, Navigation, and Control System (PGNCS)
  - Charles Stark Draper
- Pixhawk
  - Open Source Hardware/Software

http://store.3drobotics.com
UAV Risks

- Enrique Iglesias in concert

www.diyphotography.net/let-enrique-iglesias-show-you-why-grabbing-a-drone-out-of-mid-air-is-a-really-bad-idea/
UAS Risk to Aircraft Surrogate Study

• FAA wildlife strike database as surrogate for UAV
• Micro UAV classified for study as 3 lbs.
  – Note FAA NPRM uses 4.4 lbs.
• Birds in database:
  – Small: sparrow
  – Medium: gull
  – Large: vulture

• 151,305 strike reports in 24.5 years
  – 90 percent are small or medium birds
  – 9 percent indicate damage to A/C
  – 0.15 percent (230) with injury or fatality
### Small and Medium Bird Strike Summary

<table>
<thead>
<tr>
<th>Threshold</th>
<th># Events With Damage</th>
<th># Events With Injuries</th>
<th># Events With Fatalities</th>
<th># Events W/O Damage</th>
</tr>
</thead>
<tbody>
<tr>
<td>400 ft/5 miles</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>1</td>
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<tr>
<td>400 ft/3 miles</td>
<td>5</td>
<td>0</td>
<td>0</td>
<td>10</td>
</tr>
<tr>
<td>400 ft/5 miles or enroute</td>
<td>34</td>
<td>6</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>400 ft/3 miles or enroute</td>
<td>37</td>
<td>6</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>All reports</td>
<td>13906</td>
<td>230</td>
<td></td>
<td></td>
</tr>
<tr>
<td>All small/medium birds in any location</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

•Note that for two of three fatalities, the National Transportation Safety Board (NTSB) had reports of birds near the aircraft, but could not confirm birdstrikes.
• Eight fatal and one serious

The NTSB probable cause: the sudden loss of power to both engines that resulted from impact with a bird (red-tailed hawk), which fractured the windshield and interfered with engine fuel controls, and the subsequent disorientation of the flight crewmembers, which left them unable to recover from the loss of power.
Future Uses of UAS
Future UAS Uses

• Security
• Search and rescue
• Monitoring
• Disaster management
• Crop management
• Communications
• Inspection
• Oil and gas
• Entertainment
• Package delivery
Search and Rescue

• Urban search and rescue
• Firefighting
  – Chemical sampling
  – Site entry decisions
  – Approach to use
  – Wildland fire assessment and analysis
• Mountain search and rescue
• Ski trail sweep
• Water detection and rescue
Crop Management by UAS

- Field analysis
  - Pesticide use
  - Plant health
- Crop dusting
- Crop planting
- Yamaha RMAX

The Future of UAS

• Growth!
• Integration with NAS
  – FAA regulations
  – Licensing
• Insurance
  – Operators
  – Owners
  – Manufacturers
  – Site locations
• THE DRONES ARE COMING!

www.youtube.com/watch?v=01Hvdpvp5o&feature=youtu.be
Drone Law and Regulation
First Point to Consider: Drone Rules Are Changing!

• Most countries’ aviation laws didn't originally contemplate use of drones by the public.
• Law is catching up to technology.
• U.S. regulation of drones is in state of flux.
  – U.S. drone regulations currently complicated, some legal issues open or unclear.
Drones Are a Federal Affair

• U.S. federal government
  – **Primary regulator** of national airspace
  – All government, military and civilian purposes
  – **Federal Aviation Administration** (FAA) - 1926

• U.S. Supreme Court—U.S. v. Causby - 1946
  – Airspace above U.S. land is in the **public domain**.
  – Flights over private land regulated by FAA.
  – **Flights over private land not a “taking” by the feds.**
Generally—Model Aircraft v. UAV

• FAA
  – “Model aircraft” & commercial UAS/UAV—**Hard to distinguish**
    – Technology for model aircraft has become more sophisticated
  – Term “drone” used **ubiquitously** for both
  – At law—a **fine line between** both
  – Generally, how do we distinguish?
    • Recreational versus commercial use
    • Regulated versus unregulated
    • Weight
U.S. Drone Regulation

• **Recreational use**
  - 55 pounds or less
  - VLOS
  - No permit required
  - Voluntary safety rules
  - No commercial use whatsoever
  - Reckless or commercial use = fine (Huerta v. Pirker, $10,000 fine)

• **Nonrecreational 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**!

• Compliance is low.

• **Change in the rules is very near!**
FAA Enforcement: Releases Details of 200 Reckless Drone Sightings

- Potential enforcement opportunities against reckless operations of model aircraft
- 2014 Feb.-Nov., FAA collected details of reckless drone operations
  - May 11—Unauthorized UAS *crashed* into the stands during event at Virginia Motor Speedway.
  - July 8—Pilot of passenger airplane at 2,200 feet saw drone *pass underneath* flying toward DCA.
  - Oct 27—In the UK, a passenger aircraft landing in the county of Essex *nearly collides* with UAS.
- Jan. 26, 2015 (3 a.m.) —Small drone *crashes* into tree on White House lawn.
  - Operator admits to Secret Service he lost control.
  - Enter restricted airspace = violation of federal law.
  - What if the drone was carrying C4 explosive = suicide bomb?
    - Smugglers *already using* drones to carry pounds of drugs over U.S.-Mexico border!
  - *May kick FAA into high gear to punish reckless drone operators!*

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CPCU Society

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Huerta v. Pirker, June 2014

• Pirker uses drone to take photos and video of university campus.
• FAA fines Pirker $10k for reckless use and commercial use without FAA permit.
• FAA prevails, matter eventually goes to full NTSB board:
  – FAA authority over aircraft did not exclude model aircraft.
  – FAA may prohibit careless or reckless operation of model aircraft.
    • Fine upheld, Pirker & FAA settled for $1,100 in Jan. 2015.
  – BUT, NTSB did not rule whether FAA issued valid regulations for commercial use of model aircraft.
    • NTSB leaves open legal issue (open issue one of two, for commercial users).
    • De facto solution: Civilian operator applies for and obtains SAC or seeks exemption.
      – Limbo: effect on high schools, churches, non-profits?
        » Are not hobby use but are not commercial use.
June 2014—Interpretation of Special Rule for Model Aircraft

• FAA public notice of rule making, accepted comments until Sept. 23, 2014
  – Received 33,480 public comments!
• FAA says taking comments, BUT the "notice is immediately effective"!
• Restates the FMRA’s S. 336(a) & (c) definition of a “model aircraft”
• Says FMRA S. 336 "affirmed" FAA's authority to regulate model aircraft
  – "Law is clear that FAA may take enforcement action against model aircraft operators who operate in a manner that endangers safety."
• Asserts that AC 91-57 was "clarified" in FAA Notice 07-01 = force of law
  – Model aircraft = strictly recreational or hobby use only
  – Even remotely commercial use = commercial use
August 2014—Lawsuits Filed, Challenging FAA's June 2014 Rule

• MA hobbyists, research universities and commercial drone interests
  – Filed three lawsuits in U.S. Court of Appeals for the District of Columbia
  1. Assert Congress in FMRA forbade FAA to impose regulations on model aircraft
  2. Is a backdoor imposition of new regulations on model aircraft hobbyists
  3. Failed to follow federal rule-making procedures before implementation
    • Required to accept and consider public comment before effective
      – But FAA made rule immediately effective while accepting comments
    • Failed to do required cost-benefit analysis of regulations

• As of Nov 2014, court granted motion holding case in abeyance (PACER)
  – Await FAA's further action on the public comments because FAA may revise rule
  – FAA to file reports with court on activities every 90 days (three reports filed since February 2015)
  – Court: If FAA tries to enforce rule OR delays response to comments
    • Parties may seek judicial relief, e.g., injunction, order FAA to act on comments
  – Open issue two of two (for recreational model aircraft users)
FAA Proposes Rules to Allow Commercial Drone Flights!

• Published draft rules February 16, 2015
• Lead to new era in which UAS flights become common!
• Huerta: “Most flexible regime for small drones in the world”
• Drone interests favor new rules, good first step!
• New and simple process for commercial operators 55 pounds or less
  – Operational requirements much easier!
• Open for 60 day period of public comment
• Final rules could be published as soon as 2016, maybe 2017
  – Means 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 and private use
• No private insurance requirements for users (unlike Canada)
• No effect on existing FAA recreational drone rules (non-commercial)
FAA’s New Proposed Rules

- Operator passes written exam every two years for FAA certificate.
  - Cost $150
  - 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
  - Max 500 feet above ground and max 100 MPH
  - Daytime flight only
  - VLOS
  - No flights near airports or over people
  - Always cede way to manned aircraft even if risk loss of drone
- Backed by cost-benefit analysis:
  - Replace risky manned flights, e.g., cell tower and bridge inspections (pilots and ground)
  - Less burdensome rules = more compliance, lower enforcement costs
FAA's Pathfinder Program

• Existing and new FAA's UAS rules: operate only during daylight hours and only within the visual line of sight of the UAS operator.
  – Big impediment to unlocking the full potential of commercial UAS, for example:
    • Inspecting or spraying crops on large commercial farms
    • Delivering small packages to remote consumers
    • Insurance companies that want to underwrite or claims 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 by insurance companies.
Canadian Drone Regulation

• Canadian Aviation Regulations
  – Rules on how to use drones
  – When TC permission needed = “special flight operations certificate” (SFOC)
  – Fines for CAR violations = up to $5,000 individual; $25,000 corporation

• When do you need permission from Transport Canada to fly?
  – **No permission required:**
    • Recreational use + less than 35 kgs./77 lbs.
    • Commercial use + less than 25 kgs./55 lbs. (exceptions where SFOC needed)
  – **SFOC required:**
    • Recreational use + more than 35 kgs./77 lbs.
    • Commercial use + more than 25 kgs./55 lbs.
Europe

• Mainland Europe operates under the jurisdiction of the European Aviation Safety Agency (EASA)
• Need certification in any situation
• Certification granted on a case-by-case basis
• Requests proposing flight in unpopulated areas usually approved

Brazil

• Brazil a leading player in UAV use: uses UAVs to patrol its borders
• No laws that cover civilian use
United Kingdom

• 20 kg (or 44 pounds)—considered “small unmanned aircraft”
• Need “Permit to Fly” classification, which is relatively easy to acquire
• Anything heavier or used for aerial photography requires a “Permit to Carry Out Aerial Work,” has tougher restrictions
  – Pilot qualification, design and construction certificates

Australia

• An “Unmanned Aircraft System” profit-seeking “air work” has requirements including pilot certification, but relatively easy to meet
• “Model aircraft, flown for sport, recreation and education,” which essentially are not regulated (except VFR required)
Mexico

• No Civil Aviation Authority regulations on UAV users.
• Government encourages UAV use.
• UASs used to monitor drug trafficking and university research.

Japan

• UASs have been in use since 1980.
• Mainly agricultural purposes—response to aging farming population.
• Vast majority of crops are sprayed using unmanned helicopters and drones.
Potential Legal Issues Raised by Use of Drones—1

• Violating FAA or Transport Canada 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.

• Trespass
  – Some states enacted laws prohibiting drone use over private property without owner consent.
  – As of June 2014: 13 states enacted laws, 36 introduced.

• Nuisance
  – Depending on drone size, noise or kicking up dust onto neighbor's property
  – Interfere with neighbor's use of property = lawsuit for nuisance
Potential Legal Issues Raised by Use of Drones—2

• Invasion of privacy
  – By private individuals:
    • Some states passed laws forbidding photos or video by drones (TX, ID, MO).
    • Reasonable expectation of privacy then publication?
  – Abuse by law enforcement/government:
    • U.S. 4th Amendment, unreasonable searches.
    • Some U.S. states require police to obtain search warrant to gather criminal evidence by drone.
  – New draft U.S. federal privacy rules introduced Feb 2015 for government and private use.

• 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 wire tap statutes.

• In sum: Simple to operate, but quietly create complicated legal problems for users and their insurance companies.
• Drone Insurance Coverage Issues
Insurance Coverage Under ISO Policies

- Insurance Services Office, Inc.’s (ISO's) Commercial General Liability Coverage Form, Commercial Umbrella Liability Coverage Form, Farmowners Liability Coverage Form, Personal Umbrella Liability Coverage Form, Businessowners Coverage Form, and Farmowners Umbrella Liability Coverage Form all provide coverage for "personal and advertising injury" or "personal 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;
Insurance Coverage Under ISO Policies

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."

• 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 landlord.
      – Not very "all-encompassing" coverage for an owner of a drone
What potential personal injury offenses are covered from the use of a drone?

- Oral or written publication, in any manner, of material that violates a person's right of privacy;
- Using a camera on the drone, insured photographs or films neighbors and then posts the web.

Subject to the 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 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 probably decided by a court.
• 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 landlord
    • Probably the biggest exposure for drone operators to a suit, and it isn't covered.
  – Nuisance
  – Stalking and harassment
  – Wiretap laws
Insurance Coverage Under ISO Policies

- Coverage of third-party bodily injury liability and property damage liability coverage claims arising out of a drone
  - Most policies have an exclusion for liability arising out of an aircraft.
    - As a result, most drone claims for bodily injury and property damage would be excluded.
      - Depends on definition of an aircraft or if the aircraft definition has an exception. (Most personal lines policies have the following exception.)
        » For example, ISO's HO 00 O3 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 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.
Insurance Coverage Under ISO Policies

• 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.
    – Could be contrary to public policy.
Insurance Coverage Under Drone Liability Policies

• No standard language so hard to make generalization
  – Specimen language:
    This coverage applies only if “bodily injury” or “property damage” arises from the use, operation, maintenance, loading or unloading of an “unmanned aircraft system” while operated in accordance with applicable Federal Aviation Administration guidelines.
    - What is an FAA guideline?
      - See earlier slides. FAA guidelines are generally believed to not have force of law. FAA regulatory rules would.
        - Potential source of litigation
        - If FAA can’t regulate drones according to Pirker, why is this needed?

Scheduled aircraft means the aircraft component of an unmanned aircraft system that has been certified for flight by a civil aviation authority and which is shown in the aircraft schedule(s).
Insurance Coverage Under Drone Liability Policies

• Few persons or organizations have obtained certificate of authority or special airworthiness certificate.
  – If that is a requirement for insurance coverage, coverage could be illusory because so few persons or organization who own drones have obtained one.
    • Big agent’s E&O exposure with this requirement in the policy.
    • None of the policies cover fines by the FAA for flying an uncertified drone.

• None of the drone liability policies provided coverage for:
  – Invasion of privacy/trespass
  – Nuisance
  – Wiretap laws
  – Fines by the FAA
Insurance Coverage Under Drone Liability Policies

• What coverage is the insured purchasing?
  – Does the insured know about his or her uninsured exposures?
ISO Drone Endorsements Effective June 1, 2015

• CG 21 09 and CU 21 71
  – Excludes all unmanned aircraft without exception. Keeps manned aircraft exclusion intact.
  – Exclusion applies to both Coverage A and 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".

• If CG 21 09 is attached and Exclusion—Employees and Volunteer Workers as Insureds or Exclusion—Volunteer Workers are also attached, ISO created new endorsements to accommodate CG 21 09.
• ISO created endorsements that apply to an unmanned aircraft exclusion so that one applies only under Coverage A and another applies only under Coverage B.
ISO Drone Endorsements Effective June 1, 2015

• CG 24 50—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.

• CU 21 24—Exclusion—Non-Owned Aircraft
  – If CU 21 71 is attached, this endorsement eliminates the exception to the exclusion for aircraft that is chartered by, loaned to, or hired by you with a paid crew; and not owned by any insured.

• ISO does not require that the drone owner and/or operator be in compliant with FAA regulations
Insurance Coverage Under Drone Hull Policies

• No credible rates because the exposure is so new
• What deductible to charge: dollar amount or percent of value
• What perils are covered or not covered and other issues:
  – Damage to drone from collision in air?
  – Damage to drone from take-off or landing?
  – Theft?
    • Bigger exposure for high schools
  – Damage arising out of an inexperienced or unqualified operator?
  – Replacement cost or ACV
    • How do drones depreciate in value and what are market values for used drones?
  – What is cost to repair a drone and who does the repair?
Insurance Agents’ E&O Exposure

• Few persons or organizations have obtained certificate of authority or special airworthiness certificate
  – If that is a requirement for insurance coverage, coverage could be illusory because so few persons or organization who own drones have obtained one.
  • Big agent's E&O exposure with this requirement in the policy.
  • None of the policies cover fines by the FAA for flying an uncertified drone.
    – Could be contrary to public policy if they did.
      » Insured would expect them to unless carrier and/or agent disclosed this lack of coverage.
      » Disclosure should be in writing and signed by insured.
Insurance Agents’ E&O Exposure

• Few persons or organizations have obtained certificate of authority or special airworthiness certificate.
  • Whether to insure commercial use of drones that don't have an FAA certificate is probably the most difficult decision that insurers will have to make.
  • 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.
    – If insurance is going to pay for a fine for not obtaining a FAA certificate of authority and lawsuits arising out of the operation of a drone, what incentive does a drone operator have to obtain one or to follow other FAA regulations?
    – 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.
  • Trend is for insurers not to require appropriate FAA approvals as a coverage requirement.
    – Farmers in general are using them without it.
Insurance Agents’ E&O Exposure

• Covering trespass, invasion of right to privacy, nuisance
  – Exposure is likely deemed too ubiquitous for insurers to cover.
    • Legislative fix to privacy laws may ultimately be needed to protect the "innocent user" of a drone.
  – Agent should disclose to his or her customer that he or she doesn’t have coverage for these suits.
Questions?