

# UNMANNED AERIAL VEHICLE LEGISLATIVE REPORT

This report looks at whether the Iowa criminal code should be modified to regulate the use of unmanned aerial vehicles and develops model guidelines for the use of unmanned aerial vehicles

*Iowa Department of  
Public Safety  
December 2014*

## **Legislation (House File 2289)**

In the 2014 session of the general assembly, House File 2289 banned the use of unmanned aerial vehicles for traffic law enforcement. The bill also requires law enforcement to obtain a search warrant if information obtained by the unmanned aerial vehicle is to be admissible in court.

Finally, the bill requires that the Department of Public Safety, in consultation with the Attorney General, state and local agencies, and other interested organizations, to examine whether Iowa criminal code should be modified to regulate the use of unmanned aerial vehicles, develop model guidelines for the use of unmanned aerial vehicles, and shall report such guidelines to the general assembly no later than December 31, 2014.

In July 2014 all stakeholders who registered on HF 2289, were communicated with, through either a written questionnaire or oral telephone conference to gauge their organizational position on the regulation of unmanned aerial vehicle regulation.

The stakeholder organizations that registered on HF 2289, and therefore were sent a questionnaire to provide insight into UNMANNED AIRCRAFT use and regulation in Iowa included:

American Civil Liberties Union  
Iowa Minutemen Civil Defense Corp  
Iowa Department of Transportation  
Iowa State Police Association  
Iowa Police Chief's Association  
Fawkes-Lee and Ryan Inc.  
Rockwell Collins  
Iowa Soybean Association  
Alliant Energy Corporation  
Iowa Insurance Institute (letter was mailed to lobbyist address posted on the legislative website, but was returned as undeliverable.)  
State Public Defender's Office  
MidAmerican Energy Company  
Iowa State Police Association  
Smithfield Foods, Inc.  
Iowa Homeland Security and Emergency Management Division  
Iowa Association of Realtors  
Iowa Cattlemen's Association  
Iowa Peace Officers Association  
Iowa State Sheriffs and Deputies Association  
Agribusiness Association

DuPont Businesses  
Public Airport Association  
League of Cities  
Iowa State Association of Counties  
State of Iowa Board of Regents  
Iowa Association of Electric Cooperatives  
Iowa Association of Business and Industry  
Iowa Broadcasters Association  
Iowa Newspaper Association  
Monsanto Company  
Iowa Institute of Cooperatives

The questionnaire that was sent out to stakeholders is included as Appendix A.

Although all the organizations that had an interest in HF 2289 and unmanned aircraft legislation were sent a questionnaire there was a limited number of responses. Those organizations that provided written or oral response to the questionnaire included:

American Civil Liberties Union  
Fawkes Lee and Ryan  
Department of Transportation  
Iowa Public Airport Association  
Iowa Department of Homeland Security  
Iowa Cattlemen's Association  
Iowa Board of Regents  
Iowa Public Defenders Association  
Iowa State Sheriff's and Deputies Association  
Iowa Newspaper Association  
Rockwell Collins

The written responses to the questionnaire are included as Appendix B.

### **Who is Currently Using Unmanned Aircraft Technology**

Most organizations that responded to the questionnaire are not currently using unmanned aircraft technology, with a few exceptions. The Cattlemen's Association reports that some of its members use unmanned aircraft to fly over crops to determine nutrient needs of plants and the need for herbicide and pesticide application. The University of Iowa has FAA authorization to use unmanned aircraft for research projects dealing with wildlife monitoring and agricultural monitoring. Iowa State University and the University of Northern Iowa are interested in

pursuing authorization for unmanned aircraft use for research purposes. Rockwell Collins is involved in the development of unmanned aircraft communication technology.

Even though there are relatively few Iowans currently using unmanned aircraft technology, the future interest in the use of unmanned aircraft technology for business, industry and government is very strong. According to the questionnaire there is interest in commercial uses, in addition to several government uses of unmanned aircraft technology, including:

- scouting and evaluating crop conditions
- waterway surveys
- airport runway inspection
- airport wildlife management
- special event traffic monitoring
- emergency disaster area monitoring
- damage assessment and recovery monitoring
- work zone monitoring
- search and rescue
- evidence collection by taking 3D images of a crime scene
- tactical situational awareness
- combating fires with thermal imaging

The survey results show a clear consensus that the unmanned aircraft options present strong economic opportunity for private industry in Iowa, and also offer numerous benefits for law enforcement and other government use.

## **Evaluation of Laws Surrounding Unmanned Aircraft Use**

House file 2289 requires an evaluation of the coverage of current laws. In evaluating whether the laws of Iowa are sufficient to address unmanned aircraft technology there are three main areas that need to be addressed: (1) safety; (2) government use; and (3) private use.

### **1. Safety (FAA Regulated)**

One significant concern related to unmanned aircraft regulation is safety. By Federal law, the FAA is charged with ensuring the safe and efficient use of U.S. airspace. This authority generally preempts any state or local government from enacting a statute or regulation

concerning matters – such as airspace regulation—that are reserved exclusively to the U.S. Government.<sup>1</sup>

For example, a state law or regulation that prohibits or limits the operation of an aircraft, sets standards for airworthiness, or establishes pilot requirements generally would be preempted. But state and local governments do retain authority to limit the aeronautical activities of their own departments and institutions.<sup>2</sup>

State and local governments have some authority over matters that could affect aircraft and airports. State and local governments control zoning<sup>3</sup> and airport commissions.<sup>4</sup> The Iowa Department of Transportation has authority to register aircraft,<sup>5</sup> in much the same way that it has authority to register land vehicles. The Iowa Department of Transportation also regulates the operation of aircraft recklessly or while intoxicated.<sup>6</sup> States also have the authority to define what actions are criminal, so long as the criminal behavior does not involve the same actions that are addressed in FAA regulations of the air industry (e.g., state criminal trespass or harassment statutes).

The FAA first authorized use of unmanned aircraft in the NAS in 1990. On February 14, 2012, President Obama signed the FAA Modernization and Reform Act of 2012 into law, which is the first significant piece of legislation addressing the safe use of unmanned aircraft.<sup>7</sup> The FAA has until September 30, 2015, to provide for regulations for the safe integration of unmanned aircraft into the national airspace.<sup>8</sup>

Today, the FAA's issuance of an experimental certificate of airworthiness (COA) for a particular unmanned aircraft is the only way that civil operators of unmanned aircraft are authorized to access the NAS. Experimental certificate regulations preclude carrying people or property for compensation or hire, but do allow operations for research and development, flight and sales demonstrations and crew training. COAs are available to public entities to fly an unmanned aircraft in civil airspace. Government agencies with COAs have used unmanned aircraft for a number of purposes, including law enforcement, firefighting, border patrol, disaster relief, search and rescue, military training, and other government operational missions. Applicants make their request through an online process and the FAA evaluates the proposed operation to see if it can be conducted safely.<sup>9</sup>

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<sup>1</sup> FAA, Fact Sheet Unmanned Aircraft Systems January 2014, available at [http://www.faa.gov/news/fact\\_sheets/news\\_story.cfm?newsId=14153](http://www.faa.gov/news/fact_sheets/news_story.cfm?newsId=14153)

<sup>2</sup> Id.

<sup>3</sup> Iowa Code ch. 329

<sup>4</sup> Iowa Code ch. 330

<sup>5</sup> Iowa Code ch. 328

<sup>6</sup> Iowa Code § 328.41

<sup>7</sup> Villasenor, John, "Observations from Above: Unmanned Aircraft Systems and Privacy," Harvard Journal of Law and Public Policy, Vol. 36 p. 470.

<sup>8</sup> Id at 473

<sup>9</sup> FAA, Fact Sheet Unmanned Aircraft Systems January 2014, available at [http://www.faa.gov/news/fact\\_sheets/news\\_story.cfm?newsId=14153](http://www.faa.gov/news/fact_sheets/news_story.cfm?newsId=14153)



The FAA can impose fines for reckless or careless use of an aircraft, with fines up to \$10,000.<sup>10</sup> In two publicized cases, the operators of unmanned aircraft were fined. One of those cases is currently on appeal.

Traditionally, FAA has exempted model aircraft from FAA regulation. FAA Advisory Circular AC91-57 sets out the conditions for such an exemption:

- The site for use of the model aircraft is of sufficient distance from a populated area, and is away from noise sensitive areas such as parks, schools, hospitals, churches, etc.
- The use is not in the presence of spectators until the aircraft has been successfully flight tested and been proven air worthy.
- The flight is not more than 400 feet above the surface, and when the operation occurs within 3 miles of an airport, the operator must notify the airport operator (or control tower or flight service station)
- The operator must give the right of way to, and avoid flying in the proximity of, full-scale aircraft.

## **2. Government Use and the Fourth Amendment**

With the rapid advances in unmanned aircraft technology, law enforcement is growing ever more accepting of the real advantages of utilizing such technology. The law enforcement benefits of using an unmanned aircraft are numerous:

- no pilot on board so the systems operator can remain safely on the ground;
- provides superior situational awareness without exposing the pilot to danger;
- minimizes response time because many can be launched within five minutes from various locations due to their vertical take-off capabilities;
- cost effective, with an hourly cost to operate of \$30-\$50 as compared to a manned aircraft which has an average hourly cost to operate of \$150.<sup>11</sup>

Regardless of efficiencies, of course, the unmanned aircraft should not be used if it violates the Constitution.

The Fourth Amendment is key to the privacy issues as they relate to the government's use of unmanned aircraft technology. The Fourth Amendment only restricts actions by or on behalf of government. It does not restrict non-government, private intrusions into individual privacy interests. The Supreme Court has not explicitly addressed the question of unmanned aircraft privacy, but many cases shed light on the constitutional limitations of unmanned aircraft searches.

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<sup>10</sup> Federal Aviation Regulations (FARs), Part 91, § 91.12(a) ("No person may operate an aircraft in a careless or reckless manner so as to endanger the life or property of another"). See 49 U.S. Code § 46301(a)(1) and (d)(2) and § 46301(a)(5).

<sup>11</sup>Report of the Department of Criminal Justice Services, Commonwealth of Virginia. *Protocols for the Use of Unmanned Aircraft Systems (UAS) by Law Enforcement Agencies*. p. 4, 2013.

### **Dow Chemical Co. v. United States**

The EPA contracted with an aerial photographer to provide images of the highly regulated 200-acre Dow Chemical facility, from 1200, 3,000, 12,000 feet without a warrant or consent. The United States Supreme Court found that the Fourth Amendment was not implicated, because the 200 acres of open area around the facility were more like an open field than like the curtilage of a home. The Fourth Amendment protects “persons, houses, papers, and effects,” and since 1924, the United States Supreme Court has said that the home and curtilage (“houses”) implicate Fourth Amendment interests, but open fields, that is, land that is open to view and observation, does not trigger Fourth Amendment protection.<sup>12</sup> In *Dow Chemical*, the Court ruled that this principle also applies to observations of open fields made from public airspace, captured with camera.<sup>13</sup>

### **California v. Ciraolo**

The police flew a small plane at 1000 feet over a fenced-in backyard and photographed marijuana plants. The evidence was used to obtain a search warrant to seize the plants. The United States Supreme Court upheld the fly-over observations, finding that there is no reasonable expectation of privacy in things that can be seen from a location where the public has a right to be. Despite any subjective belief that there is, or should be, an actual expectation of privacy, the Court will apply an objective reasonableness standard. The Court said “in an age where private and commercial flight in the public airways is routine, it is unreasonable for the respondent to expect that his marijuana plants were constitutionally protected from being observed with the naked eye from an altitude of 1,000 feet.”<sup>14</sup>

### **Florida v. Riley**

Officers were tipped off about marijuana plants. The officers made observations of the marijuana from a helicopter flying at 400 feet, by looking through the sides and roof of a greenhouse that were left partially open. Because the plane was in the navigable airspace in which any member of the public could have viewed the marijuana plants through the openings in the greenhouse, it was not a Fourth Amendment violation. It may have been an unconstitutional search if the flying altitude had been contrary to law or regulation. Also, “no intimate details connected with the use of the home or curtilage were observed, and there was no undue noise, and no wind, dust or threat of injury.”<sup>15</sup>

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<sup>12</sup> Hester v. United States, 265 U.S. 57 (1924).

<sup>13</sup> Dow Chem. Co. v. United States, 476 U.S. 227 (1986).

<sup>14</sup> Ciraolo, 476 U.S. 207, 215 (1986).

<sup>15</sup> Florida v. Riley 488 U.S. 445 (1989).

## **Kyllo v. United States**

A government agent in a case used a thermal imaging device to measure the external temperature of a roof and outside wall of a home of individuals who were suspected of growing marijuana. The roof and wall were found to be abnormally warm and a search warrant was issued based on this information. Upon execution of the warrant marijuana plants were found. The Supreme Court found the officers' actions to be an unconstitutional search of the home and curtilage. The Court said that, when "the Government uses a device that is not in general public use, to explore details of the home that would previously have been unknowable without physical intrusion, the surveillance is a search and is presumptively unreasonable without a warrant."<sup>16</sup>

## **United States v. Jones**

Police installed, without a warrant, a GPS tracking device on the vehicle used by a suspect in a narcotics investigation. The GPS tracker collected data for one month, and the data was used to help convict the suspect on a drug conspiracy charge. The Supreme Court unanimously agreed that the search was unconstitutional, but they reached that conclusion for different reasons. Four Justices<sup>17</sup> found that the physical trespass that occurred during the placement of the GPS on the vehicle constituted a Fourth Amendment violation. One Justice<sup>18</sup> rejected the "trespassory" analysis of the Fourth Amendment, but concluded that the non-consensual placement of the GPS tracker violated a reasonable expectation of privacy. Four Justices<sup>19</sup> concluded that the long term monitoring of the vehicle violated reasonable expectations of privacy.<sup>20</sup>

The Iowa Supreme Court cases have mirrored the cases from the United States Supreme Court.<sup>21</sup> These cases provide a general framework of analysis to determine whether unmanned aircraft searches would be constitutional. The case law suggests consideration of several factors:

- Whether the unmanned aircraft is in navigable airspace
- Whether there undue disturbance to the ground below for noise or wind

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<sup>16</sup> *Kyllo v. United States*, 533 U.S. 27 (2001).

<sup>17</sup> Justice Scalia, joined by Chief Justice Roberts and Justices Kennedy and Thomas

<sup>18</sup> Justice Sotomayor.

<sup>19</sup> Justice Alito, joined by Justices Ginsburg, Breyer and Kagan

<sup>20</sup> *United States v. Jones* 132 S. Ct. 945 (2012)

<sup>21</sup> *State v. Lewis*, 675 N.W.2d 516 (Iowa 2004) (search of back yard triggered Fourth Amendment); *State v. Showalter*, 427 N.W.2d 166 (Iowa 1988) (search of the inside of a barn used to store personal items required a warrant); *State v. Flynn*, 360 N.W.2d 762 (Iowa 1985) (search of a public area of a golf course did not require a warrant); *State v. Ryder*, 315 N.W.2d 786 (Iowa 1982) (aerial observation of fields did not trigger Fourth Amendment protection); *State v. Bakker*, 262 N.W.2d 538 (Iowa 1978) (stolen bee equipment in a field was properly viewed without a warrant)



- Whether sophisticated imaging systems were used on the unmanned aircraft that allowed images to be taken from inside the home or curtilage
- Whether the duration of the surveillance from the unmanned aircraft was excessive in length
- Whether a person's reasonable expectation of privacy invaded

All of these factors may shed some light on whether an unmanned aircraft search is constitutional.

Although the United States Supreme Court and the Iowa Supreme Court have, for decades, upheld warrantless searches outside of a home or curtilage to be constitutional, HF 2289, which was enacted in 2014, contemplates that a search warrant must be obtained, or that evidence that the government has gathered with an unmanned aircraft would be suppressed. Regardless of whether a warrant is required, though, a protocol for unmanned aircraft use is advisable.

### **Model Guidelines**

In 2012 the International Association of Chiefs of Police (IACP) Aviation Committee developed Recommended Guidelines for the Use of Unmanned Aircraft. The IACP recommendations recognize that the legality of the unmanned aircraft use is only the beginning of the discussion, from a policy perspective. Simply because an action is legal does not mean that it is either required or advisable. When balancing public interests and diverse private interests, engagement of members of the community can inform the discussion about what actions are both legal and appropriate. The IACP guidelines contain information related to community engagement, system requirements, operational procedures, and image retention. These guidelines could provide a template for governmental use of unmanned aircraft if model guidelines were to be adopted in Iowa. Please see Appendix C for the International Association of Chiefs of Police Aviation Committee "Recommended Guidelines for the Use of Unmanned Aircraft."

Virginia has developed protocols that incorporate many of the recommendations of the IACP, and include discussions of airspace safety, legal restrictions, and policy and procedure suggestions.<sup>22</sup>

The Unmanned Aircraft System Operations Industry (AUVSI) also has a "Code of Conduct" which addresses three specific areas, including safety, professionalism, and respect. This code of conduct could be used as a guideline for private individuals, organizations, or

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<sup>22</sup> The Virginia protocols are available online:  
<http://www.dcjs.virginia.gov/cple/documents/UAS%20Protocols%20GA.pdf>

government agencies utilizing unmanned aircraft technology. Please see Appendix D for the full document.

### **3. Private Use vs. Privacy Concerns (Current Criminal Laws)**

The Fourth Amendment does not restrict the activities of private parties, so long as they are not acting at the direction of a government agent. Nongovernmental use of unmanned aircraft technology is likely to raise some of the most significant privacy challenges in the future. The main constitutional question is the extent of the First Amendment privilege to gather information with an unmanned aircraft. This includes Free Speech rights of individuals, Free Press rights of the media, and Free Assembly rights for individuals. In *Branzenburg v. Hayes*, the Supreme Court said “Without some protection for seeking out the news, freedom of the press could be eviscerated.”<sup>23</sup> However, freedom conferred by the First Amendment is not without limitation. In *Brazenburg*, the Supreme Court recognized the boundaries of the right stating “it is clear the First Amendment does not invalidate every incidental burdening of the press that may result from the enforcement of civil and criminal statutes of general applicability.”<sup>24</sup>

It was apparent from the questionnaire sent out to stakeholders that there are endless opportunities to use unmanned aircraft technology for positive purposes, which have not even begun to be explored. These include commercial uses, ranging from farmers applying fertilizer, to realtors photographing property, to assessors surveying land. Given all of the positive uses of technology, the stakeholders made it clear that they are concerned about regulation that would interfere with legitimate unmanned aircraft use, while recognizing the importance of protecting legitimate privacy interests, and holding people accountable for improper uses that affect safety or privacy. Many stakeholders suggest that current criminal and civil statutes may be enough to address any criminal use, without crafting new laws that specifically regulate unmanned aircraft only. There is a genuine risk that broadly applied criminal or civil statutes may infringe on the ability of private individuals to use an unmanned aircraft.

The current laws in Iowa that may be used to criminally prosecute those who use unmanned aircraft technology for illicit purposes include:

#### **Trespassing (Iowa Code 716.7)**

Homeowners have a legitimate concern about the intrusive use of the unmanned aircraft, flown around their yard, at eye level, against their wishes or without their consent. Iowa’s

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<sup>23</sup> 408 U.S. 665 , 681 (1972)

<sup>24</sup> *Id.* At 682.

trespass statute defines trespass, in part, as “entering or remaining upon or in property without justification after being notified or requested to abstain from entering or to remove or vacate therefrom by the owner, lessee, or person in lawful possession, or the agent or employee of the owner lessee, or person in lawful possession, or by any peace officer, or maintenance of the property...”<sup>25</sup>

The current criminal trespass statute could be used to prosecute a person who flew an unmanned aircraft at eye level onto a property if the property owner asked the person to leave, and the person refused. However, there is some ambiguity in the term “enter.” The Iowa statute contemplates physical entry by a person, not actual entry by a device controlled by a person. Would this include the use of an unmanned aircraft flying at eye level? In Arizona, entry in association with criminal trespass is defined as “the intrusion of any part of any instrument or any part of a person’s body inside the external boundaries of a structure or unit of real property.”<sup>26</sup> This definition would more clearly address the intrusion of an unmanned aircraft, but it also may include the nonconsensual entry of a softball or a lawn dart. It is possible that the courts may interpret Iowa’s trespass definition to include the intrusions of unmanned aircraft, but that issue has not yet been decided by the court.

### **Invasion of Privacy**

There are both criminal and civil liability issues for invasion of privacy through the use of the unmanned aircraft. With respect to civil liability, courts in many jurisdictions recognize two common law forms of invasion of privacy which include intrusion upon seclusion and public disclosure of private facts.<sup>27</sup> Iowa law also includes a criminal invasion of privacy statute when the invasion of privacy is sexually motivated.<sup>28</sup>

Intrusion upon seclusion includes:

“one who intentionally intrudes, physically or otherwise, upon the solitude or seclusion of another or his private affairs or concerns, is subject to liability to the other for invasion of his privacy, if the intrusion would be highly offensive to a reasonable person.”<sup>29</sup>

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<sup>25</sup> 716.7 (2)b

<sup>26</sup> ARIZ. REV. STAT. 13-1501 (West 2012)

<sup>27</sup> RESTATEMENT (Second) OF TORTS 652A-652E (1997)

<sup>28</sup> Iowa Code 709.21

<sup>29</sup> RESTATEMENT (Second) OF TORTS 652A-652E (1997)

Iowa law has recognized this tort.<sup>30</sup> This tort would provide one civil remedy for improper use of the unmanned aircraft. However, there may be First Amendment implications that remove civil liability options. In *Snyder v. Phelps*<sup>31</sup> members of the Westboro Baptist Church picketed the funeral of a serviceman killed in Iraq. The United States Supreme Court ruled that the family of the service member could not recover for a violation of intrusion upon seclusion, because the Westboro Baptist Church members had a First Amendment right to assemble and exercise free speech rights.<sup>32</sup> Therefore, it is possible that there may be some situations in which unmanned aircraft use seems egregious that will be protected by the First Amendment.

Another real concern for unmanned aircraft use is the publication of the information obtained, especially images of private individuals whose images are captured at high profile or public events. Images captured by an unmanned aircraft could easily convey facts not previously known to the public, and upon publication, could be an actionable invasion of privacy in many states under the tort of publication of private facts.<sup>33</sup>

Iowa Code 709.21 also makes invasion of privacy a crime in Iowa if it has a sexual motivation. It states:

1. A person who knowingly views, photographs, or films another person, for the purpose of arousing or gratifying the sexual desire of any person, commits invasion of privacy if all of the following apply:
  - a. The other person does not have knowledge about and does not consent or is unable to consent to being viewed, photographed, or filmed.
  - b. The other person is in a state of full or partial nudity.
  - c. The other person has a reasonable expectation of privacy while in a state of full or partial nudity.<sup>2</sup>
2. As used in this section:
  - a. “full or partial nudity” means the showing of any part of the human genitals or pubic area or buttocks, or any part of the breast of a female, with less than fully opaque covering.
  - b. “Photographs or films” mean the making of any photograph, motion picture film, videotape, or any other recording or transmission of the image of a person.
3. A person who violates this section commits a serious misdemeanor.<sup>34</sup>

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<sup>30</sup> *Bremmer v. Journal-Tribune Publ. Co.*, 76 N.W.2d 762, 764 (Iowa 1956). Since the recognition of this tort in *Bremmer*, the Iowa Supreme Court has adopted and applied the principles of invasion of privacy articulated in Restatement (Second) of Torts (1977). See *In re Marriage of Tigges*, 758 N.W. 2d 824, 829 (Iowa 2008); *Stessman v. Am. Black Hawk Broadcasting*, 416 N.W. 2d , 685, 686 (Iowa 1987); *Lamberto v. Bown*, 326 N.W. 2d 305, 309 (Iowa 1982); *Anderson v. Low Rent Housing Comm’n of Muscatine*, 304 N.W. 2d 239, 248 (Iowa 1981); *Howard v. Des Moines Register & Tribune Co.*, 283 N.W.2d 289, 291 (Iowa 1979); *Winegard v. Larsen*, 260 N.W. 2d 816, 822 (Iowa 1977) (first applying those principles).

<sup>31</sup> 131 S. Ct. 1207 (2011)

<sup>32</sup> 131 S. Ct. 1207 (2011)

<sup>33</sup> Restatement (Second) of Torts 625B (1977)

<sup>34</sup> Iowa Code 709.21

This statute would address some unmanned aircraft surveillance, but only if it is sexually motivated. This statute requires that the purpose of the invasion of privacy be to arouse or gratify sexual desire and that the person being invaded be in full or partial nudity. Some misuses of unmanned aircraft to surreptitiously watch people in their homes could be prosecuted under this statute, but many non-consensual uses may not be covered under the current statute. For example if a unmanned aircraft were taking a photograph through the window of someone's home to simply see who was in the house to frame a cheating spouse, it would apply only if the residents in the home were fully or partially nude, and the motivation were sexual. Even without a sexual motivation, the homeowner's legitimate expectation of privacy may be invaded, but the statute would not apply in those circumstances. The appropriate coverage of behavior that is defined as criminal or non-criminal is a policy decision for lawmakers.

### **Harassment and Stalking**

In January 2009, the U.S. Department of Justice released a report based on data collected from over three million stalking victims and two million harassment victims. About 245,000 of the stalking victims and 70,000 of the harassment victims stated that they had been subjected to electronic monitoring using one or more of the following devices: video or digital cameras, computer spyware, listening devices, and GPS tracking.<sup>35</sup> Given these facts, it can be anticipated that stalkers will use unmanned aircraft to stalk their victims. Iowa law has criminal laws that address both harassment and stalking. The current statute does not specifically address the use of an unmanned aircraft.

Iowa Code 708.7, dealing with harassment, states in part "A person commits harassment when the person, purposefully and without legitimate purpose, has personal contact with another person, with the intent to threaten, intimidate, or alarm that other person. As used in this section, unless the context otherwise requires, 'personal contact' means an encounter in which two or more people are in visual or physical proximity to each other. 'Personal contact' does not require a physical touching or oral communication, although it may include these types of contacts."<sup>36</sup>

This section may be used to prosecute those stalking with an unmanned aircraft if the operator of the unmanned aircraft is in "visual or physical proximity" to the victim. The

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<sup>35</sup> U.S. Dept of Justice, Bureau of Justice Statistics Special Report, Stalking Victimization in the United States 2009, <http://bjs.ojp.usdoj.gov/content/pub/pdf/svus.pdf>.

<sup>36</sup> Iowa Code 708.7 Harassment

unmanned aircraft can provide remote surveillance. Sometimes this means that the operator is within “visual or physical proximity,” but the surveillance may be conducted at a considerable distance. Generally, criminal statutes are interpreted strictly.<sup>37</sup> Thus, the current language of the statute may not be interpreted broadly enough to include remote surveillance. There are no Iowa cases that have addressed this issue.

Iowa law also includes a criminal Stalking statute. Under Iowa Code 708.11, a person commits stalking if all of the following occur:

- a. The person purposefully engages in a course of conduct directed at a specific person that would cause a reasonable person to fear bodily injury to, or the death of, that specific person or a member of that person’s immediate family.
- b. The person has knowledge that the specific person will be placed in reasonable fear of bodily injury to, or the death of, that specific person or a member of that specific person’s immediate family by the course of conduct.
- c. The person’s course of conduct induces fear in the specific person of bodily injury to, or the death of, the specific person or a member of the specific person’s immediate family.<sup>38</sup>

Like the Harassment statute, the Stalking statute refers to “visual or physical proximity,” and has the same concerns. The other alternative method of committing Stalking includes “threats implied by conduct.” This may include remote surveillance, although there are no Iowa cases that specifically address the issue.

### Summary

The two main areas of unmanned aircraft regulation are that of government use and private use. In the case of government use, there are no key Supreme Court cases that specifically address unmanned aircraft usage. Existing case law suggests that governmental use of the unmanned aircraft, without a warrant, would not violate the Fourth Amendment in most circumstances.<sup>39</sup> Law enforcement groups have expressed concern about undue restrictions on government use of the unmanned aircraft, because the versatility of the

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<sup>37</sup> *State v. Hearn*, 979 N.W.2d 577 (Iowa 2011).

<sup>38</sup> Iowa Code 708.11 Stalking

<sup>39</sup> Villasenor, John. Observations from Above: Unmanned Aircraft Systems and Privacy, *Harvard Journal of Law and Public Policy*. Vol. 36, p. 517.



unmanned aircraft may mean that offenders will use the technology to conduct surveillance on law enforcement, to identify the approach of officers to the unmanned aircraft user's property, to scout a safe exit when officers approach the offender, or to arm the unmanned aircraft with explosives or ammunition that could harm officers.

There are several factors that must be balanced when looking at private use regulation. It is important that we protect our citizens from bad actors in such a way that does not overly inhibit First Amendment rights and the free market. It was apparent from the responses received to the unmanned aircraft questionnaire that the commercial potential for unmanned aircraft use in Iowa's future is broad. There was a general consensus among stakeholders against the blind overregulation of an industry that has the potential to benefit business growth in Iowa. It is important to take a look at historically how the nation handled the regulation of other technology to determine the path that we should take for unmanned aircraft technology.

“When considering potential new statutory UAS privacy protections, it is helpful to keep in mind what has occurred with the Internet and mobile telephones, two technologies that are associated with privacy threats that are in some respects much more significant than those that will arise from unmanned aircraft. Both the Internet and mobile phones grew as fast as their underlying technologies enabled. As a result, the public and legislative dialogue regarding how best to address the privacy issues they raise has been conducted with a strong appreciation of their benefits. By contrast, while the privacy concerns associated with domestic UAS are real and deserving of attention, they are getting significant focus long before the potential benefits of the technology are widely recognized. This early consideration creates both opportunities and risks...If, in 1995, comprehensive legislation to protect Internet privacy had been enacted, it would have utterly failed to anticipate the complexities that arose after the turn of the century with the growth of social networking and location based wireless services. ...Legislative initiatives in the mid-1990s to heavily regulate the Internet in the name of privacy would likely

have impeded its growth while also failing to address the more complex privacy issues that arose years later.<sup>40</sup>

It may be beneficial for Iowa to take a page from the history books and regulate unmanned aircraft technology as regulation is needed rather than in a preemptive manner. We already have a number of criminal law statutes on the books that could be interpreted to address unmanned aircraft misuse. Until such time that a case arises where it is deemed the current law is insufficient to address unmanned aircraft misuse, legislators may want to hold off on expansive regulation until they have the full picture as to what benefits the state, its citizens, and business can derive from unmanned aircraft usage. In the future, once more information is available; laws can be crafted in such a way as to directly address the shortcoming in the criminal laws while still protecting those who are using unmanned aircraft technology for positive purposes.

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<sup>40</sup> Villasenor, John. Observations from Above: Unmanned Aircraft Systems and Privacy, Harvard Journal of Law and Public Policy. Vol. 36, p. 517.

# Appendix A

Terry E. Branstad  
Governor  
Kim Reynolds  
Lt. Governor



Department of Public Safety

Larry L. Noble  
Commissioner

July 29, 2014

Dear UAV Stakeholder,

You are being contacted to provide input to the Department of Public Safety on changes to the law regarding unmanned aerial vehicles.

Pursuant to HF 2289 the Iowa Department of Public Safety in consultation with the Attorney General, state and local agencies, and other interested organizations shall examine whether the Iowa criminal code should be modified to regulate the use of unmanned aerial vehicles, shall develop model guidelines for the use of unmanned aerial vehicles, and shall report such information to the legislature.

Please see the attached questionnaire and provide responses to any and all of the questions that are relevant to your organization. Also, if you have any other information that you believe pertinent feel free to provide that as well.

You can email me your questionnaire responses to [Markham@dps.state.ia.us](mailto:Markham@dps.state.ia.us) or you can mail your responses back to me at 215 East 7<sup>th</sup> Street, Des Moines, Iowa 50319. I would like all responses back by August 18<sup>th</sup>.

Thank you for your input, and please let me know if you have any questions. Also, please distribute this to any other stakeholder groups that you believe would like to weigh in on this matter, that were not contacted directly.

Sincerely,

Amber Markham  
Policy Advisor  
DPS

## UAV Report Questionnaire

1. Does your organization/industry currently use UAV technology? If yes, please explain in detail the technology that is being used and the manner in which it is being used.
2. If your organization/industry currently does not use UAV technology, are there future plans to utilize this technology?
3. Does your organization believe that the current criminal code is sufficient to address UAV misuse? If not, what changes would you like to see to the criminal code to address UAV usage?

4. If model guidelines were put into place to regulate UAV usage what are the main issues that you believe the guidelines should address?
5. Does your organization currently have internal guidelines for UAV usage? If yes, please attach a copy.
6. What are your primary concerns with the adoption of new laws or guidelines regulating UAV technology?
7. Please provide any other information that you feel would be relevant to this report.



# Appendix B

# ACLU of Iowa



505 Fifth Avenue, Suite 901  
Des Moines, IA 50309-2316  
[www.aclu-ia.org](http://www.aclu-ia.org)

August 18, 2014

Amber Markham  
Policy Advisor  
Iowa Dept. of Public Safety  
215 East 7<sup>th</sup> St.  
Des Moines, Iowa 50319

*Delivered by email to: [markham@dps.state.ia.us](mailto:markham@dps.state.ia.us)*

**Re: Questionnaire on Needed Changes to the Law Regarding Unmanned  
Aerial Vehicles (UAVs)**

Dear Ms. Markham:

Below are the ACLU of Iowa's responses to the questionnaire you sent regarding additional regulation of UAVs in Iowa.

**UAV Report Questionnaire**

1. Does your organization/industry currently use UAV technology? If yes, please explain in detail the technology that is being used and the manner in which it is being used.

No.

2. If your organization/industry currently does not use UAV technology, are there future plans to utilize this technology?

No.

3. Does your organization believe that the current criminal code is sufficient to address UAV misuse? If not, what changes would you like to see to the criminal code to address UAV usage?

**Regarding use of UAVs by private persons and entities:**

The ACLU of Iowa cautions that when regulating private use of UAVs, the legislature must proceed carefully so as not to infringe on protected free speech and expression.

The current criminal code, and often more appropriately existing civil remedies, are likely sufficient to address UAV misuse by private/nongovernmental entities and persons.

Regarding use of UAVs by law enforcement or government entities:

The ACLU believes that the current law, while a significant step in the right direction, needs important further development in the coming legislative session.

First, the statute needs to be rewritten to clarify when law enforcement must obtain a warrant to use a drone/UAV, and when the warrant requirement may be dispensed with. The current law provides that information obtained as a result of the use of a drone/UAV may not be admissible in court unless either a search warrant was obtained or the information was obtained "in a manner that is consistent with state and federal law." Because the meaning of "state and federal law" on drone/UAV use is in flux and generally unsettled, this exception has the potential to swallow the rule requiring law enforcement to obtain a search warrant. Likewise, the vague language fails to provide law enforcement with the legal basis to use an existing exception to the warrant requirement, such as in the event of an true emergency—a particular circumstance for which law enforcement has reasonable suspicion that swift action is needed to prevent imminent danger to life.

Second, the use of a drone/UAV for monitoring and recording the activities of persons in public also must be carefully regulated. While requiring a warrant prior to using a drone to conduct a search is important, it does not adequately address concerns about the use of UAVs by law enforcement or government to monitor citizens' protected activities in public spaces. The FAA had made clear that its mandate is to protect airspace, not privacy. Therefore, it is incumbent on Iowa legislators to protect Iowans' privacy and ensure that we can enjoy the benefits of this technology without becoming a "surveillance society," in which everyone's moves in public are monitored, tracked, recorded, and scrutinized by authorities. It is a core value in our society that we do not watch innocent people just in case they do something wrong. The use of UAVs to monitor, track, and record activities in public have the potential to chill the use of public spaces for First Amendment protected activities and significantly harm trust and community policing efforts. The ACLU suggests that prior to the use of UAVs for monitoring in public areas, an officer obtain a court order on a showing of specific and articulable facts demonstrating reasonable suspicion of criminal activity, that the operation of the public unmanned aircraft system will uncover such activity, and that alternative methods of data collection are either cost-prohibitive or present a

significant risk to any person's bodily safety. Such an order should not be issued for a period greater than a renewable 48-hour time limit.

An important component of effective legislation to balance the core freedoms of Americans and legitimate and beneficial applications of drone technology is to require that when information is obtained about people, their homes, businesses, or other areas that are not the targets of a search warrant, that information must be deleted as soon as possible, and in any event no longer than a reasonable period of time—24 to 48 hours—after collection. In no circumstances should information gathered about non-targets be stored, filed, indexed, used, copied, disclosed, shared, or sold. Additionally, if UAVs are equipped with facial recognition or biometric matching technologies, those technologies should not be used on persons who are not the target of a search warrant or court order.

Additionally, future legislation should require local governing bodies' approval before law enforcement agencies acquire drone technology. That approval will ensure both that communities have the opportunity to choose to take advantage of positive capabilities of UAVs—for example, finding missing persons or assisting firefighters in responding to an emergency fire—and that when law enforcement do use drones, they do so with their community's buy-in and support.

The statute may specifically exempt public universities from the warrant and data deletion requirements when they use UAVs for non-law enforcement related academic research purposes and in accord with governing academic and research ethics and existing state and federal laws protecting privacy.

Finally, the existing law should be amended to clearly ban the use of weaponized UAVs.

4. **If model guidelines were put into place to regulate UAV usage, what are the main issues that you believe the guidelines should address?**

Answered above to question #3.

5. **Does your organization currently have internal guidelines for UAV usage? If yes, please attach a copy.**

Suggested legislative language is attached.

**6. What are your primary concerns with the adoption of new laws or guidelines regulating UAV technology?**


The ACLU of Iowa's primary concern with the adoption of new laws or guidelines regulating UAV technology is, broadly, the protection of core freedoms and constitutional rights. This means the effective limitation of government and police action so that citizens remain free: free from unreasonable searches and mass surveillance, and free to engage in protected First Amendment activities.

At the same time, the legitimate and careful application of UAV technology by law enforcement affords meaningful positive opportunities, such as the assistance of search and rescue operations. Those legitimate uses should be allowed in accordance with the obligation of law enforcement to promote and protect the rights of the people they serve.

**7. Please provide any other information that you feel would be relevant to this report.**

If the department has any questions or would like to discuss the ACLU of Iowa's recommendations further, please do not hesitate to contact me either by email at [rita.bettis@aclu-ia.org](mailto:rita.bettis@aclu-ia.org) or phone at 515-243-3988 x15.

Thank you,



---

Rita Bettis  
Legal Director

Enclosure: suggested legislation to regulate the use of UAVs in Iowa



## **Suggested Legislation to Regulate the use of UAVs in Iowa**

An act to regulate the use of unmanned aerial vehicles.

### **Section 1. Definitions.** In this chapter:

- (a) "Agent of the state or any political subdivision thereof" means any state or local agency, including, but not limited to a peace officer, a law enforcement officer or entity or any other investigative officer or entity, agency, department, division, bureau, board, or commission, or any individual acting or purporting to act for or on behalf of a state, county, or local agency.
- (b) The term "unmanned aerial vehicle" means an aircraft that is operated without the possibility of direct human intervention from within or on the aircraft.

### **Section 2. Use of Unmanned Aerial Vehicles.**

- (a) Any use of unmanned aerial vehicles must fully comply with all Federal Aviation Administration requirements and guidelines, and acquisition of unmanned aerial vehicles at the county or municipal level must be approved by the county board of supervisors, city council, or other supervisory legislative body that overseeing the agent of the state or any political subdivision thereof seeking such acquisition.
- (b) Except as provided in subsection (c), it is unlawful for an agent of the state or any political subdivision thereof to operate an unmanned aerial vehicle or to disclose or receive information acquired through the operation of an unmanned aerial vehicle.
- (c) Exceptions .
  - (1) Consent. It shall not be unlawful under this chapter to disclose or receive information about any person acquired through the operation of an unmanned aerial vehicle if such person has given written consent to such disclosure.
  - (2) Exception for Emergency Situations. It shall not be unlawful under this chapter for an agent of the state or any political subdivision thereof to operate an unmanned aerial vehicle and for information from such operation to be disclosed or received if the unmanned aerial vehicle is used in circumstances in which it is reasonable to believe that there is an imminent threat to the life or safety

of a person, to assist the person subject to the following limitations:

- (A) the request shall document the factual basis for the emergency and
- (B) not later than 48 hours after the agent of the state or any political subdivision thereof begins operation of an unmanned aerial vehicle, a supervisory official shall file a sworn statement with a magistrate setting forth the grounds for the emergency access.

(3) Warrant or Order.

- (A) Warrant. An unmanned aerial vehicle may be operated and information from such operation disclosed in order to collect information from a non-public area only pursuant to a search warrant issued under Section 808.3.
- (B) Order. An unmanned aerial vehicle may be operated and information from such operation disclosed in order to collect information from a public area pursuant to a warrant authorized under subsection (3)(A) or pursuant to an order issued by any court that is a court of competent jurisdiction if the agent of the state or any political subdivision thereof offers specific and articulable facts demonstrating reasonable suspicion of criminal activity, that the operation of the public unmanned aircraft system will uncover such activity, and that alternative methods of data collection are either cost-prohibitive or present a significant risk to any person's bodily safety. Such an order shall not be issued for a period greater than 48 hours. Extensions of an order may be granted but shall be no longer than the authorizing judge deems necessary to achieve the purposes for which it was granted and in no event for longer than thirty days.

- (4) Exception for non-law enforcement operations, including academic research by public universities - It shall not be unlawful under this chapter for an agent of the state or any political subdivision thereof to operate an unmanned aerial vehicle and

for information from such operation to be disclosed if no part of any information and no evidence derived from such operation may be received in evidence in any trial, hearing, or other proceeding in or before any court, grand jury, department, officer, agency, regulatory body, legislative committee, or other authority of the state, or a political subdivision thereof, or for any intelligence purpose.

- (d) When unmanned aerial vehicles are used pursuant to subsection (c), they shall be operated in a manner to collect data only on the target of the warrant and to avoid data collection on individuals, homes, or areas other than the target. Neither facial recognition nor other biometric matching technology may be used on non-target data collected by an unmanned aerial vehicle.
- (e) Unmanned aerial vehicles shall not be used for traffic law enforcement.
- (f) Unmanned aerial vehicles shall not be equipped with weapons.

### **Section 3. Data Retention**

- (a) No data collected on an individual, home, or area other than the target that justified deployment may be stored, used, copied, disclosed, shared, or sold for any purpose. Such data must be deleted as soon as possible, and in no event later than 24 hours after collection.
- (b) Whenever an agent of the state or any political subdivision thereof uses an unmanned aerial vehicle, no part of information acquired and no evidence derived therefrom may be received in evidence in any trial, hearing, or other proceeding in or before any court, grand jury, department, officer, agency, regulatory body, legislative committee, or other authority of the state or a political subdivision thereof if the disclosure of that information would be in violation of this chapter.

### **Section 4. Suppression/Inadmissibility.**

- (a) Except as proof of a violation of this section, no evidence obtained in violation of this Act shall be admissible as evidence in any criminal, civil, administrative, or other proceeding.

### **Section 5. Willful Violation.**

- (a) Willful violations of this Section as to the procurement and execution of a court warrant or order to deploy an unmanned aerial vehicle are subject to 808.10.

#### **Section 6. Reporting**

- (a) In June of each year, any agent of the state or political subdivision thereof that uses unmanned aerial vehicles shall report to the legislature and make public on its website:
- (1) The number of times an unmanned aerial vehicle was used, organized by the types of incidents and the types of justification for deployment;
  - (2) The number of crime investigations aided by the use of unmanned aerial vehicles. A description of how the unmanned aerial vehicle was helpful to each investigation should be included;
  - (3) The number of uses of unmanned aerial vehicles for reasons other than criminal investigations. A description of how the unmanned aerial vehicle was helpful in each instance should be included;
  - (4) The frequency and type of data collected on individuals or areas other than targets; and
  - (5) The total cost of their unmanned aerial vehicle program.

**Fawkes-Lee & Ryan**

## UAV Report Questionnaire

1. *Does your organization/industry currently use UAV technology? If yes, please explain in detail the technology that is being used and the manner in which it is being used.*

No

2. *If your organization/industry currently does not use UAV technology, are there future plans to utilize this technology?*

No

3. *Does your organization believe that the current criminal code is sufficient to address UAV misuse? If not, what changes would you like to see to the criminal code to address UAV usage?*

We feel that the language in the current criminal code is too broad. Specifically, it should be rewritten to clarify the use of UAVs by law enforcement, both for criminal investigations and also for surveillance. Protecting privacy rights, free speech and expression of Iowans should be maintained. Iowans should not have to fear being stalked by a UAV.

There needs to be language to limit the time (24-48 hours) information obtained by UAVs is stored. Also we strongly support that weapons and all devices intentionally designed to cause pain or discomfort should never be attached to UAVs, no exceptions.

In short, time, place and manner needs to be more than a guideline, it needs to be defined.

4. *If model guidelines were put into place to regulate UAV usage, what are the main issues that you believe the guidelines should address?*

Please refer to previous question.

5. *Does your organization currently have internal guidelines for UAV usage? If yes, please attach a copy.*

No

6. *What are your primary concerns with the adoption of new laws or guidelines regulating UAV technology?*

Our primary concern is the privacy of Iowans. But privacy includes the protection of the Fourth Amendment; that the citizens and guests in Iowa be free of the reach of government when probable cause does not exist that would intrude upon their daily activity. Fishing expeditions, by the government or neighbors should result in a penalty.

7. Please provide any other information that you feel would be relevant to this report.



Fawkes-Lee & Ryan welcomes the invitation to be a stakeholder in this matter. We are available for further discussion at any time. Please contact Marty Ryan at 515/681-8076, or Stephanie Fawkes-Lee at 515/306-1651. Or, either may be reached at [marty@iowappa.com](mailto:marty@iowappa.com) and [stephanie@iowappa.com](mailto:stephanie@iowappa.com) .

# **Iowa Public Airports Association**

## Response from the Iowa Public Airports Association

- 1) We do not currently utilize UAVs.
- 2) As technology develops, UAVs may be utilized by airports for such tasks as runway inspections or wildlife management. It is simply too early in the evolution of the technology to offer a definitive answer.
- 3) The greatest concern with UAVs is incursion into airspace. One of the most publicized incidents took place last March, when the pilot of a passenger jet came within 200 feet of a drone while on approach to JFK Airport in New York. Investigators say the drone, described as a small helicopter, was flying at an altitude of 1750 feet. If a jet sucks a UAV into an engine, the result would likely be catastrophic. The same result would also likely result if a turboprop or piston powered plane's engine contacted a UAV.

Current FAA rules restrict hobbyist flights of model aircraft to under 400 feet and they must operate not closer than three miles from an airport.

- 4) If model guidelines were put into place to regulate UAV usage in Iowa, the main issues that would need to be addressed include; a) prohibition against flying a UAV within three miles of an airport, unless coordinated and approved by the airport; 2) operation of UAV's restricted to under 400 feet; and 3) updating such guidelines in accordance with anticipated FAA regulations.
- 5) NA.
- 6) The two greatest concerns are; 1) the technology is rapidly evolving, so rules and regulations developed now may be outdated in a very short amount of time; and 2) airspace incursions, which are dangerous to aviation as well as the public.
- 7) We look forward to working with the Department of Public Safety and other interested parties to keep aviation in Iowa safe.

# **Iowa Department of Transportation**

## UAV Report Questionnaire

1. Does your organization/industry currently use UAV technology? If yes, please explain in detail the technology that is being used and the manner in which it is being used.

No.

2. If your organization/industry currently does not use UAV technology, are there future plans to utilize this technology?

Future uses that I could see our department using UAV for:

- Special event traffic monitoring.
- Emergency declaration projects:
- Aerial monitoring of flooding
- Damage assessments and recovery monitoring
- Work zone monitoring and review.
- Bridge inspection.

3. Does your organization believe that the current criminal code is sufficient to address UAV misuse? If not, what changes would you like to see to the criminal code to address UAV usage?

No opinion.

4. If model guidelines were put into place to regulate UAV usage what are the main issues that you believe the guidelines should address?

A simple process to request the use and not make it so long and drawn out that when you have a situational need the situation is over by the time you get permission.

Guidelines should address legal/illegal operations, maintaining separation with other aircraft, and protecting people and property on the ground.

5. Does your organization currently have internal guidelines for UAV usage? If yes, please attach a copy.

Not yet.

6. What are your primary concerns with the adoption of new laws or guidelines regulating UAV technology?

House File 2289, Section 708.11 looks like it was written only for law enforcement uses only. It would either need a new section or additional language to cover other governmental agency uses.

7. Please provide any other information that you feel would be relevant to this report.

Regards,

Mikel

**Iowa Department of  
Homeland Security  
and Emergency  
Management**

**Markham, Amber [DPS]**

---

**From:** Benson, John [HSEMD]  
**Sent:** Monday, August 25, 2014 12:35 PM  
**To:** Markham, Amber [DPS]  
**Subject:** UAV questions

For HSEMD:

1. We do not presently use UAV tech.
2. We do see a use for UAVs to assist in damage assessments and aerial recon to support response operations. However, at this time we have no plans to use UAVs.
3. NA
4. Our main concern would be authorized use and what that definition would look like. Of course you would have the associated privacy issues.
5. NA
6. –
7. We know that the insurance industry has expressed interest in UAV. We envision going a bit further than they are discussing. We can see a use during ongoing disasters where a UAV can increase situational awareness for local responders. Essentially use the UAV as another data point gather that is used to increase intel in an evolving natural or man-made disaster.

John R. Benson  
Communications Bureau Chief  
Iowa Department of Homeland Security & Emergency Management  
7105 NW 70<sup>th</sup> Avenue, Camp Dodge, Bldg. W-4  
Johnston, IA 50131-1824  
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NEW mobile 515-318-8022 NEW  
[john.benson@iowa.gov](mailto:john.benson@iowa.gov)



# **Iowa Cattlemen's Association**

## UAV Report Questionnaire

1. **Does your organization/industry currently use UAV technology? If yes, please explain in detail the technology that is being used and the manner in which it is being used.**

At this time we do have members that utilize the UAV technology for means of scouting and evaluating crop conditions. The application of a UAV occurs during the growing months of June through August, and UAV's are flown over grain crops to determine the nutrient requirements of the plants, and any need for pesticide or herbicide application. Due to the up-front costs of purchasing a UAV, the use is currently coursed through commercial application and is localized to businesses that own and operate a UAV. As this technology becomes more reasonably priced and widely available, it can be assumed this function of UAV's will expand.

2. **If your organization/industry currently does not use UAV technology, are there future plans to utilize this technology.**

Although some members may currently utilize this technology for the crop component of their operation, application to the management of pastures and forage acres could be implemented. Similar to the use of UAV's in row crop production, this technology could be utilized to assess the nutrient needs of pastureland and hay ground, along with any pesticide or herbicide requirements that may exist. Further, producers could utilize UAV's to evaluate the conditions of rotationally grazed pastures to determine if cattle can be moved to a different paddock, or if there is still abundant forage to be grazed in the current location. Herd conditions could be checked hourly as well.

3. **Does your organization believe that the current criminal code is sufficient to address UAV misuse? If not, what changes would you like to see to the criminal code to address UAV usage?**

Yes, at this time we feel the current criminal code is sufficient to address misuse.

4. **If model guidelines were put into place to regulate UAV usage what are the main issues that you believe the guidelines should address?**

UAV's have the ability to be utilized for private, commercial, and public use. Considering the advantages of utilizing UAV's for private and commercial use in agriculture, regulations and guidelines should be geared towards flexibility of fly zones, fly times, and application of information collected. On all levels of UAV application, information collected on private property through the use of UAV's should be withheld by the respective agency or business, and not accessible to the public if there is no inherent benefit. Landowners within the fly path of a UAV intended to collect information for public use should be notified within 48 hours of take off - producers utilizing UAV's for private or commercial use are aware of the intended actions of the UAV and are prepared.

5. **Does your organization currently have internal guidelines for UAV usage? If yes, please attach a copy.**

At this time, the Association does not currently have internal guidelines for the usage of UAV's. If a protocol is developed by our producer members, we could share that document with the Department of Public Safety upon request.

**6. What are your primary concerns with the adoption of new laws or guidelines regulating UAV technology?**

UAV technology has the potential to be executed widely in private, commercial, and public use applications. As the utilization of UAV's augments, the Association trusts that UAV's, from a public use standpoint, will not cause a nuisance to landowners through repetitive and afflicted use. If at all possible, landowners in the course of a UAV public campaign should be notified prior to the initiation of the respective UAV route.

**7. Please provide any of the other information that you feel would be relevant to this report.**

The Association commends Iowa's ability to adopt and implement rules that advance with the changes in today's technology. Further, the Association appreciates the state's interest in reaching out to stakeholders on this particular topic.

# **Iowa Board of Regents**

## UAV Report Questionnaire

1. Does your organization/industry currently use UAV technology? If yes, please explain in detail the technology that is being used and the manner in which it is being used.

### University of Iowa

The University of Iowa currently has research projects that involve the use of UAVs. The following information is provided by the two areas on campus currently involved in this type of research:

The Department of Geographical and Sustainability has an FAA Certificate of Authorization (2014-CSA-18-COA) for the use of a DJI F550 hexacopter with mounted camera for use in the Redbird Farms Wildlife Management Area approximately 4 miles SW of Iowa City on Hwy 1. The UAS will be used for mapping (GIS and remote sensing) and agriculture and natural resource monitoring research.

Small UAVS that are run by the Operator Performance Laboratory (OPL) are deployed under FAA Certificate of Authorization (COA). Purpose ranges from precision agricultural applications, waterway surveys, airborne sensor platforms, data link testing, and development of CONOPS for military applications including UAVs as wingman and airborne command and control.

### Iowa State University

Iowa State University currently does not use UAV technology. UAV technology has potential use in higher education; including, research in aeronautical engineering, research in agriculture and natural resources, and use for publicity purposes. Research is being conducted at other universities in the design of UAV's, on the use of UAV's to assist in crop and pest management, on the use of UAV's to conduct geological surveys (e.g. for oil, gas, and mineral deposits).

### University of Northern Iowa

The University of Northern Iowa has two faculty members who work with UAV's and/or have an interest in pursuing work with UAV's. The University is interested in using UAV's for research purposes and student educational experiences. Additional specific information on work currently being done or potential opportunities can be provided when involved faculty return to campus at the start of the academic year.

2. If your organization/industry currently does not use UAV technology, are there future plans to utilize this technology?

### University of Iowa

It is likely that University researchers will continue to use UAV technology in various research projects as industry and government sponsors continue and expand their interest in funding such research. In particular, the Operator Performance Laboratory in the College of Engineering plans to expand the use of UAVs as a technology test bed for research and development in the areas described in #1 and in new areas based on available research funding. It is also possible that there could be academic uses of the technology in University coursework. We may also wish to use the technology in the future for video and photo purposes on campus, although at the present time

we do not use UAVs because current UAV technology is not superior to helicopters for these purposes.

#### Iowa State University

Iowa State University has an application pending with the FAA for use in agricultural research. Athletics may use UAV technology for enhancing spectator experiences for events such as cross country. There has also been interest in use of UAV's for marketing purposes.

3. Does your organization believe that the current criminal code is sufficient to address UAV misuse? If not, what changes would you like to see to the criminal code to, address UAV usage?

#### University of Iowa

One researcher noted that the use of UAVs in law enforcement is an important function in that surveillance may need to happen tactically and be time-sensitive to the occurrence of criminal activities.

#### Iowa State University

Unsure. The key considerations include:

- Whether privacy regulation protects against use to stalk or conduct surveillance/peer in private windows;
- Whether there are sufficient protections for personal safety, such as at mass events;
- Whether there are sufficient protections against interference with outdoor events such as athletic contests;
- Whether there are adequate restrictions on the use of UAV's to carry weapons or dangerous substances

4. If model guidelines were put into place to regulate UAV usage what are the main issues that you believe the guidelines should address?

#### University of Iowa

The proliferation and increasing availability of UAV platforms is primarily an information, privacy, and safety issue. Information dissemination on current laws regarding the proper and permitted use of UAVs as well as monitoring equipment would be helpful to address these concerns. Any additional legislation should address specific issues that arise from the abuse of the technology, but the University is concerned that overly-broad restrictions may have unintended effects on research and development of the technology, as well as negative effects on economic development in the state. Continued research and development of the technology is important to advance legitimate uses in agriculture and natural resource monitoring, as well as for other practical needs.

Additionally, it is relevant to note that the use of UAVs is already extensively regulated by the FAA and it is important to avoid state regulation of UAVs that is inconsistent with already-existing federal mandates and with the FAA's June 23, 2014 interpretation of requirements pertaining to

model aircraft contained in the FAA Modernization and Reform Act of 2012.

One researcher at the institution noted three areas that model guidelines might address: safety, weaponization and privacy. Guidelines might dictate where and when UAV's may be used, including altitude restrictions, as necessary. Guidelines addressing UAV's that have been modified to carry weapons or similar materials that might be launched or dropped should also be considered.

Iowa State University

Protection on issues raised in response to question 3. Allow legitimate uses for University purposes; including, research, marketing, and enhancing university activities that do not pose a danger or invade privacy. Allow use in appropriate settings for law enforcement and safety; including, use for pursuit of fleeing felons, use for crime prevention and investigation, use for search and rescue, and use to survey for release of hazardous materials.

5. Does your organization currently have internal guidelines for UAV usage? If yes, please attach a copy.

University of Iowa

The University does not have institutional guidelines in place, but the research it conducts with UAVs is done in compliance with the Certificates of Authorization issued specifically for those projects by the FAA.

Iowa State University

The University is developing guidance on approval of UAV's for research purposes. A draft of this policy is attached for reference.

6. What are your primary concerns with the adoption of new laws or guidelines regulating UAV technology?

University of Iowa

UAVs will likely have significant economic, social, and environmental benefits for the state. Overly-broad laws or guidelines that have unintended impacts on the development, research, and application of this developing field and related technologies would have negative impacts on innovation in the state. For example, earlier bills introduced in Iowa proposed to restrict UAV use by all state institutions and therefore would have had a direct impact on education and research applications. Another proposal would have required the permission of any person or private property imaged. Such restrictions have not been applied to aerial or satellite imaging and would effectively make aerial surveys impossible. Any legislative efforts on UAV use should be focused on actual, specific abuses of the technology and should be narrowly crafted to avoid unintentional limits on the proper and legitimate use and development of the technology in the state.

Iowa State University

See responses to questions 3 and 4.

7. Please provide any other information that you feel would be relevant to this report.

University of Iowa

One researcher noted concern that guidelines or laws regulating the use of UAV's might be too restrictive in the case of law enforcement use and/or too lenient when addressing use by private citizens. Law enforcement should be able to use UAV's in public areas to monitor large events, monitor riots and similar occurrences, and track or pursue individuals who have engaged in certain high level criminal offenses.



# **Office of State Public Defender**

## **UAV Report Questionnaire**

1. Does your organization/industry currently use UAV technology? If yes, please explain in detail the technology that is being used and the manner in which it is being used.

**No.**

2. If your organization/industry currently does not use UAV technology, are there future plans to utilize this technology?

**No.**

3. Does your organization believe that the current code is sufficient to address UAV misuse? If not, what changes would you like to see to the criminal code to address UAV usage?

**The Office of the State Public Defender has no official position on UAV's**

4. If model guidelines were put into place to regulate UAV usage what are the main issues that you believe the guidelines should address?

**The Office of the State Public Defender has no official position on UAV's**

5. Does your organization currently have internal guidelines for UAV usage? If yes, Please attach a copy.

**No.**

6. What are your primary concerns with the adoption of new laws or guidelines regulating UAV Technology?

**The Office of the State Public Defender has no official position on UAV's**

7. Please provide any other information that you feel would be relevant to this report.

**The Office of the State Public Defender has no official position on UAV's**

# **Iowa State Sheriffs and Deputies Association**



## Iowa State Sheriff's & Deputies Association

### Response to UAV Report Questionnaire from Iowa DPS

Prepared by Sgt. Gibbs, Thomas B. 82-11 Scott County Sheriff's Office

1. Q: Does your organization/industry currently use UAV technology? If yes, please explain in detail the technology that is being used and the manner in which it is being used.

A: It is unknown for sure if any members of the ISSDA currently use UAV technology, but as an industry (being law enforcement) there certainly is a use for UAV technology. UAV technology is an emerging field which presents large opportunities to our members to more effectively and efficiently to consider airborne law enforcement operations. UAV's may be acquired and operated at a fraction of the cost for manned aircraft. Potential uses for UAV's would include, but are not limited to:

1. Search and Rescue – UAV's provide a force multiplier when looking for missing/lost people in large/remote areas. UAV's can search large areas from a safe location without exposing deputies/first responders/volunteers. UAV's offer multiple technologies including thermal imaging to enhance searching at night.
2. Evidence collection – Some UAV's offer the capability of mapping (with some offering 3 dimensional mapping) capabilities. Peace officers typically close roadways for severe or fatal accidents sometimes for hours while they examine the scene and take measurements. Imagine the capability to use a UAV to overfly the scene taking 3D images. That overflight is relatively quick and allows for investigators to take measurements from the 3D renderings at a later time allowing the roadways to be reopened more quickly. Also could be used to take 3D renderings of outdoor crime scenes.
3. Environmental Protection – UAV's can also be used for environmental protection of waterways. A good example was a tugboat sank near LeClaire Iowa in Scott County and leaked oil and gas into the Mississippi River. Fire Departments did an excellent job of containment, but spills can be difficult to track while looking at the surface. Having the capability of deploying a UAV to gain an overhead view of the waterway and be able to track the progress or flow of the contaminants in the water would enhance cleanup and knowledge of affected areas.
4. Tactical situational awareness – could be used during tactical operations to give commanders/operators a clear view from above an operation. Provide real-time intelligence of

an on-going situation from above. Could also be used to help locate suspects who are hiding in open areas providing essential information to law enforcement searching the area(s).

5. Emergency Management – Being able to deploy a UAV during natural disasters to provide EOC real-time information (flooding, structure damage following a tornado, etc..). Utilize mapping payloads to gather mapping information to create maps of affected areas.
6. Surveillance – Could be used in narcotics operations providing security during buy operations. Could also be used to record the buy incident to be used as evidence.
7. Fire Protection – Assist fire departments with combating structure fires, being able to see hotspots using thermal imaging providing critical information to Fire Chiefs in combating fires.
8. Homeland Security – (a) Provide surveillance during large scale crowd events. (b) Some UAV's are working on radiological detection capabilities which could be used with Iowa's Nuclear Power Stations or in the event of a dirty bomb. (c) UAV's could be used to remotely inspect critical infrastructures within Iowa.

2. Q: If your organization/industry currently does not use UAV technology, are there future plans to utilize this technology?

A: Most law enforcement agencies can see the benefit of having some type of airborne asset to enhance operations. Costs and regulations are hurdles to implementation of this technology for most agencies. As costs for this technology becomes more affordable and clear regulations exist from the FAA it would be expected that more agencies would adopt this technology.

3. Q: Does your organization believe that the current criminal code is sufficient to address UAV misuse? If not, what changes would you like to see to the criminal code to address UAV usage?

A: This question covers two separate concerns. The first being misuse, and the second being UAV usage. UAV usage and misuse relating to law enforcement operation we would expect to be governed by the 4<sup>th</sup> Amendment of the U.S. Constitution and Search and Seizure laws of the State. As a body we would not like to see any modifications to the criminal code relating to law enforcement to specifically address misuse or usage. A large issue revolving around UAV usage is that of privacy. There are court cases already which apply to manned aircraft which are as follows:

- California v. Ciraolo (May 19, 1986): After officers received a tip that a man was growing marijuana in his backyard, and the police were unable to view the back yard from the ground due to a fence blocking their view, officers used an airplane to view the defendant's backyard where they found marijuana plants growing. Because the airplane flew at an altitude of 1000 feet, as permitted by Federal Aviation Administration (FAA) regulations, the Court ruled that the defendant's backyard was in "public view" and the defendant had no reasonable expectation of privacy in his backyard from this altitude. [Click here](#) to read the full decision.
- Dow Chemical v. United States (May 19, 1986): The Environmental Protection Agency (EPA) hired an aerial photographer to take pictures of the Dow Chemical plant after Dow

refused to consent to a “search” of the property by the EPA. The Court held that “the open areas of an industrial plant complex are not analogous to the ‘curtilage’ of a dwelling for purposes of aerial surveillance.” Therefore, the use of an airplane to conduct surveillance of an industrial plant was not a search under the Fourth Amendment. [Click here](#) to read the full decision.

- *Florida v. Riley* (Jan. 23, 1989): Officers received a tip that Mr. Riley was growing marijuana in a greenhouse near his mobile home. Officers used an aircraft—a helicopter—to view the marijuana plants through a crack in the greenhouse roof. The officers were well within navigable airspace under Federal Aviation Administration (FAA) regulations; therefore, the Court held that the law enforcement surveillance did not constitute a search under the Fourth Amendment. [Click here](#) to read the full decision.
- Taken from <https://www.nacdl.org/domesticdrones/caselaw/>.

The courts have ruled that as long as law enforcement is within authorized navigable airspace that most areas are public view. We would expect the same set of rules to apply to UAV usage. As long as UAV’s are used within authorized navigable airspace warrants would not be necessary. Regarding misuse of UAV’s, there are civil remedies for people wronged from misuse of any tool used by law enforcement.

In reference to private individual uses of UAV’s and privacy there are concerns. We wouldn’t expect different codes for individuals who are flying UAV’s overhead in the NAS (National Airspace). The concern is a private individual parking a UAV outside someone’s window to their residence intentionally peeking in.

4. Q: If model guidelines were put into place to regulate UAV usage, what are the main issues that you believe the guidelines should address?

A: As an organization we welcome model policies to review and consider, but we feel each agency should have the ability to formulate their own policy to govern their use. We would not like a model policy established which solely regulates UAV usage.

Topics which would be useful to cover are image retention and how it relates to Iowa’s Open Records Laws. Reporting procedures/guidelines/forms to report usage to DPS for compiling data for legislative review.

5. Q: Does your organization currently have internal guidelines for UAV usage? If yes, please attach a copy.

A: The ISSDA does not have an internal guideline regarding UAV usage. There are model policies in place from other organizations, example is IACP.

6. Q: What are your primary concerns with the adoption of new laws or guidelines regulating UAV technology?

A: A concern would be enacting laws or guidelines which overly restrict UAV for law enforcement usage.

7. Q: Please provide any other information that you feel would be relevant to this report.

A: There is no question the FAA has jurisdiction of the NAS. The questions arise as to whether there are enforceable rules pertaining to UAV's. The FAA fined Raphael Pirker \$10,000 for reckless use of a UAV and operating the drone for commercial purposes which is also prohibited by the FAA. Pirker contested the FAA's action which then went before an ALJ (Administrative Law Judge). The ALJ sided with Pirker stating that the FAA doesn't have any enforceable rules pertaining to UAV/model aircraft. Another case which went before an appeals court was a cease and desist e-mail sent from the FAA to a Texas Equusearch (a non-profit group specializing in search and rescue) to cease use of UAV's in search and rescue operations. They appealed and the appeal court panel cited with the Texas firm. They plan to begin UAV use again for search and rescue missions.

It appears the FAA is trying to apply manned flight rules onto the UAV industry currently, which common sense would argue there is a definite distinction between the two. The FAA has yet to establish clear guidelines on UAV use and integration into the NAS.

The FAA currently requires governmental bodies to apply for a COA (Certificate of Authorization) prior to UAV operation/deployment. It is in everyone's best interest to work with the FAA, especially when working around or near airports. Deployments of UAV's can be safely done even in close proximity to airports, as long as there is proper coordination with air traffic control.

Our affiliation is eager and willing to work with DPS on this issue to address concerns of all involved. Please let us know if you have any additional questions regarding this topic.



# **Iowa Newspaper Association**

## UAV Report Questionnaire

1. Does your organization/industry currently use UAV technology? If yes, please explain in detail the technology that is being used and the manner in which it is being used.

No.

2. If your organization/industry currently does not use UAV technology, are there future plans to utilize this technology?

Legitimate news gathering entities could use this technology in the future to capture newsworthy events.

3. Does your organization believe that the current criminal code is sufficient to address UAV misuse? If not, what changes would you like to see to the criminal code to address UAV usage?

4. If model guidelines were put into place to regulate UAV usage what are the main issues that you believe the guidelines should address?

Our organization would simply want to protect the rights of legitimate news gathering entities to gather the news and to use the technology available to them to do so.

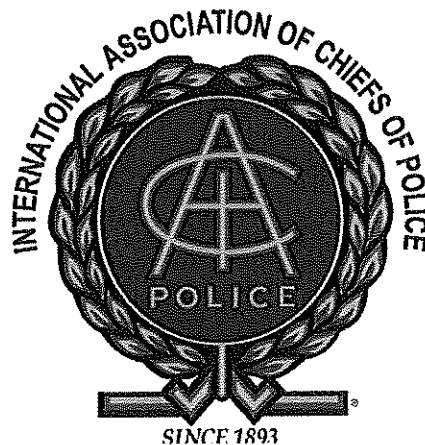
5. Does your organization currently have internal guidelines for UAV usage? If yes, please attach a copy.

6. What are your primary concerns with the adoption of new laws or guidelines regulating UAV technology?

See #4 above. Our industry's objection to restricting use of UAVs stems from our interest in being able to gather the news in the same ways in which we do now and to be able to use available technology to do so.

7. Please provide any other information that you feel would be relevant to this report.

# Appendix C



## INTERNATIONAL ASSOCIATION OF CHIEFS OF POLICE

### AVIATION COMMITTEE

#### *Recommended Guidelines for the use of Unmanned Aircraft*

##### **BACKGROUND:**

Rapid advances in technology have led to the development and increased use of unmanned aircraft. That technology is now making its way into the hands of law enforcement officers nationwide.

We also live in a culture that is extremely sensitive to the idea of preventing unnecessary government intrusion into any facet of our lives. Personal rights are cherished and legally protected by the Constitution. Despite their proven effectiveness, concerns about privacy threaten to overshadow the benefits this technology promises to bring to public safety. From enhanced officer safety by exposing unseen dangers, to finding those most vulnerable who may have wandered away from their caregivers, the potential benefits are irrefutable. However, privacy concerns are an issue that must be dealt with effectively if a law enforcement agency expects the public to support the use of UA by their police.

The Aviation Committee has been involved in the development of unmanned aircraft policy and regulations for several years. The Committee recommends the following guidelines for use by any law enforcement agency contemplating the use of unmanned aircraft.

## **DEFINITIONS:**

1. **Model Aircraft** - A remote controlled aircraft used by hobbyists, which is manufactured and operated for the purposes of sport, recreation and/or competition.
2. **Unmanned Aircraft (UA)** – An aircraft that is intended to navigate in the air without an on-board pilot. Also called Remote Piloted Aircraft and “drones.”
3. **UA Flight Crewmember** - A pilot, visual observer, payload operator or other person assigned duties for a UA for the purpose of flight.
4. **Unmanned Aircraft Pilot** - A person exercising control over an unmanned aircraft during flight.

## **COMMUNITY ENGAGEMENT:**

1. Law enforcement agencies desiring to use UA should first determine how they will use this technology, including the costs and benefits to be gained.
2. The agency should then engage their community early in the planning process, including their governing body and civil liberties advocates.
3. The agency should assure the community that it values the protections provided citizens by the U.S. Constitution. Further, that the agency will operate the aircraft in full compliance with the mandates of the Constitution, federal, state and local law governing search and seizure.
4. The community should be provided an opportunity to review and comment on agency procedures as they are being drafted. Where appropriate, recommendations should be considered for adoption in the policy.
5. As with the community, the news media should be brought into the process early in its development.

## **SYSTEM REQUIREMENTS:**

1. The UA should have the ability to capture flight time by individual flight and cumulative over a period of time. The ability to reset the flight time counter should be restricted to a supervisor or administrator.
2. The aircraft itself should be painted in a high visibility paint scheme. This will facilitate line of sight control by the aircraft pilot and allow persons on the ground to monitor the location of the aircraft. This recommendation recognizes that in some cases where officer safety is a concern, such as high risk warrant service, high visibility may not be optimal. However, most situations of this type are conducted covertly and at night. Further, given the ability to observe a large area from an aerial vantage point, it may not be necessary to fly the aircraft directly over the target location.
3. Equipping the aircraft with weapons of any type is strongly discouraged. Given the current state of the technology, the ability to effectively deploy weapons from a small UA is doubtful. Further, public acceptance of airborne use of force is likewise doubtful and could result in unnecessary community resistance to the program.
4. The use of model aircraft, modified with cameras, or other sensors, is discouraged due to concerns over reliability and safety.

### **OPERATIONAL PROCEDURES:**

1. UA operations require a Certificate of Authorization (COA) from the Federal Aviation Administration (FAA). A law enforcement agency contemplating the use of UA should contact the FAA early in the planning process to determine the requirements for obtaining a COA.
2. UA will only be operated by personnel, both pilots and crew members, who have been trained and certified in the operation of the system. All agency personnel with UA responsibilities, including command officers, will be provided training in the policies and procedures governing their use.
3. All flights will be approved by a supervisor and must be for a legitimate public safety mission, training, or demonstration purposes.
4. All flights will be documented on a form designed for that purpose and all flight time shall be accounted for on the form. The reason for the flight and name of the supervisor approving will also be documented.
5. An authorized supervisor/administrator will audit flight documentation at regular intervals. The results of the audit will be documented. Any changes to the flight time counter will be documented.
6. Unauthorized use of a UA will result in strict accountability.
7. Except for those instances where officer safety could be jeopardized, the agency should consider using a "Reverse 911" telephone system to alert those living and working in the vicinity of aircraft operations (if such a system is available). If such a system is not available, the use of patrol car public address systems should be considered. This will not only provide a level of safety should the aircraft make an uncontrolled landing, but citizens may also be able to assist with the incident.
8. Where there are specific and articulable grounds to believe that the UA will collect evidence of criminal wrongdoing and if the UA will intrude upon reasonable expectations of privacy, the agency will secure a search warrant prior to conducting the flight.

### **IMAGE RETENTION:**

1. Unless required as evidence of a crime, as part of an on-going investigation, for training, or required by law, images captured by a UA should not be retained by the agency.
2. Unless exempt by law, retained images should be open for public inspection.

# Appendix D



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# Unmanned Aircraft System Operations Industry "Code of Conduct"

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## Unmanned Aircraft System Operations Industry "Code of Conduct"

The emergence of unmanned aircraft systems (UAS) as a resource for a wide variety of public and private applications quite possibly represents one of the most significant advancements to aviation, the scientific community, and public service since the beginning of flight. Rapid advancements in the technology have presented unique challenges and opportunities to the growing UAS industry and to those who support it. The nature of UAS and the environments which they operate, when not managed properly, can and will create issues that need to be addressed. The future of UAS will be linked to the responsible and safe use of these systems. Our industry has an obligation to conduct our operations in a safe manner that minimizes risk and instills confidence in our systems.

For this reason, the Association for Unmanned Vehicle Systems International (AUVERSI), offers this Code of Conduct on behalf of the UAS industry for UAS operation. This code is intended to provide our members, and those who design, test, and operate UAS for public and civil use, a set of guidelines and recommendations for safe, non-intrusive operations. Acceptance and adherence to this code will contribute to safety and professionalism and will accelerate public confidence in these systems.

The code is built on three specific themes: Safety, Professionalism, and Respect. Each theme and its associated recommendations represent a "common sense" approach to UAS operations and address many of the concerns expressed by the public and regulators. This code is meant to provide UAS industry manufacturers and users a convenient checklist for operations and a means to demonstrate their obligation to supporting the growth of our industry in a safe and responsible manner. By adopting this Code, UAS industry manufacturers and users commit to the following:

### Safety

- We will not operate UAS in a manner that presents undue risk to persons or property on the surface or in the air.
- We will ensure UAS will be piloted by individuals who are properly trained and competent to operate the vehicle or its systems.
- We will ensure UAS flights will be conducted only after a thorough assessment of risks associated with the activity. This risks assessment will include, but is not limited to:
  - Weather conditions relative to the performance capability of the system
  - Identification of normally anticipated failure modes (lost link, power plant failures, loss of control, etc) and consequences of the failures
  - Crew fitness for flight operations
  - Overlying airspace, compliance with aviation regulations as appropriate to the operation, and off-nominal procedures
  - Communication, command, control, and payload frequency spectrum requirements
  - Reliability, performance, and airworthiness to established standards

### Professionalism

- We will comply with all federal, state, and local laws, ordinances, covenants, and restrictions as they relate to UAS operations.

- We will operate our systems as responsible members of the aviation community.
- We will be responsive to the needs of the public.
- We will cooperate fully with federal, state, and local authorities in response to emergency deployments, mishap investigations, and media relations.
- We will establish contingency plans for all anticipated off-nominal events and share them openly with all appropriate authorities.

### **Respect**

- We will respect the rights of other users of the airspace.
- We will respect the privacy of individuals.
- We will respect the concerns of the public as they relate to unmanned aircraft operations.
- We will support improving public awareness and education on the operation of UAS.

As an industry, it is incumbent upon us to hold ourselves and each other to a high professional and ethical standard. As with any revolutionary technology, there will be mishaps and abuses; however, in order to operate safely and gain public acceptance and trust, we should all act in accordance with these guiding themes and do so in an open and transparent manner. We hope the entire UAS industry will join AUVSI in adopting this industry Code of Conduct.