

Can Landowners Exclude Drones from Their Low Airspace?

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Research in Focus

Policy Questions for an Emerging Drone Industry

Recent advancements in uncrewed aircraft system or “drone” technologies have prompted several large retailers to begin exploring potential commercial uses of drones. Most notably, US companies such as Amazon,¹ Walmart,² and Alphabet’s Wing³ are increasingly seeking authorizations from the Federal Aviation Administration (FAA) to begin using drones to deliver retail goods to homes and businesses. Most of these commercial drones weigh less than 55 pounds and have fixed-wing or multicopter designs,⁴ and they increasingly run on battery power.⁵

Replacing many of the nation’s on-ground delivery vehicles with delivery drones could produce substantial economic, environmental, and other benefits. Globally, the drone delivery services market is projected to grow to more than \$5.3 billion by 2025.⁶ Because autonomous drones can beeline goods “as the crow flies” over the rooftops of homes and businesses to their destinations without any onboard pilot, they could significantly reduce delivery costs and times in certain settings. Drone technologies might also lessen road congestion and benefit the natural environment by reducing the greenhouse gas emissions associated with local goods delivery services.⁷ Drone-assisted delivery services could even enhance some Americans’ access to food, medicine, and other important items, especially for those living in food deserts and rural areas.⁸

Although civilian drone technologies create exciting new possibilities for America’s transportation and goods delivery industries, courts and policymakers are only beginning to confront the complex legal issues they present. Among other things, corporate America’s efforts to roll out drone-assisted delivery have been plagued by uncertainty about the scope of landowners’ rights to exclude drones from the low airspace immediately above their land.

Landowners have long-held common law rights to keep unwanted objects out of the space directly over their parcels.⁹ In the 1940s, the US Supreme Court expressly stated that landowners hold title to the “immediate reaches” of airspace above their land.¹⁰ It established that landowners own “at least as much of the space above the ground as they can occupy or use in connec-

tion with the land” and that they possess rights to keep out any unwanted aerial invasions in that space that would “subtract from the owner’s full enjoyment of the property.”¹¹ These established property principles undergird longstanding legal doctrines governing condominiums, overhang encroachments, airport aviation easements, and other conflicts involving low-altitude airspace. The Supreme Court expressly reaffirmed these landowner rights in a recent case,¹² and state courts have generally continued to affirm them as well—even when specifically applied to drones.¹³

Unfortunately, the commercial drone industry and its allies—recognizing the potential obstacles that landowner airspace rights could create for drone delivery service providers—have aggressively advocated in recent years for policies that would ignore landowners’ long-held airspace rights. As described in more detail below, drone advocates have tried arguing that FAA authorizations legally entitle commercial drone operators to fly at low altitudes over others’ private land and totally ignore the objections of underlying landowners. Drone industry stakeholders have also persuaded some state legislatures to enact laws prohibiting municipalities from imposing local restrictions on commercial drone activities.¹⁴ Despite these efforts, US commercial drone delivery operations have expanded more slowly than many had predicted.

This report summarizes the results of the Center for Growth and Opportunity’s January 2023 YouGov poll of 1,000 Americans designed to provide a new perspective on the continuing legal and policy debates surrounding the nation’s fledgling commercial drone industry (the “Drone Law Poll”). Among other things, the poll asked respondents for their views about landowners’ rights to exclude drones from above their land and about whether states and cities should have authority to regulate commercial drone activities within their boundaries. Its results reveal that the legal and regulatory structures the FAA and some major retailers envision for commercial drone operations are markedly out of step with the beliefs and preferences of landowners across the United States.

Drone Deliveries and Airspace Rights

Among the most notable insights from the Drone Law Poll is the sharp contrast between the drone industry’s views of landowner airspace rights and the views of ordinary Americans about those rights. The growing commercial use of drone technologies is elevating decades-old questions about landowners’ rights to exclude unwanted objects from the space directly above their land.¹⁵ The FAA has controversially begun authorizing large retail companies to operate commercial drones in the airspace above thousands of American homes and businesses on the questionable premise that these authorizations preempt landowners’ airspace rights.¹⁶ A few years ago, drone industry allies likewise helped to draft failed model state legislation that would have employed a nuisance-like multiple-factor analysis rather than simple trespass principles to govern conflicts involving drone overflights over others’ land.¹⁷

Results from a Drone Law Poll question about the scope of landowners’ airspace rights show that Americans view these airspace rights quite differently than how the FAA and drone industry advocates have tried to portray them in recent years.

Poll Question: Civilian drones are designed to operate below the typical 500-foot minimum altitude for airplane flights. Which of the following most closely matches your beliefs about landowners’ rights to exclude unwanted drones and other objects from the space directly above their own land?¹⁸	
Landowners have rights to exclude private drones and other objects from the low airspace directly above their land, up to 1,000 feet in dense urban areas and 500 feet in most other areas.	40%
Landowners have rights to exclude private drones and other objects from the low airspace directly above their land, up to about 500 feet.	18%
Landowners have rights to exclude private drones and other objects from the low airspace directly above their land, up to about 400 feet.	11%
Landowners have rights to exclude private drones and other objects from the low airspace directly above their land, up to about 200 feet.	11%
Landowners have rights to exclude private drones and other objects from the low airspace directly above their land, up to about 100 feet.	5%
Landowners have no rights to exclude unwelcome private drones or other objects from the low airspace directly above their land.	16%

As shown above, the question’s results reveal that 69 percent of Americans believe they have rights to exclude private drones and other objects from the airspace directly above their land up to at least 400 feet. Given that existing FAA restrictions generally prohibit civilian drones from flying higher than 400 feet above the ground,¹⁹ these results mean that nearly 7 in 10 Americans believe they have rights to effectively exclude commercial drones from flying above their land.

A similar Drone Law Poll question asked respondents whether the FAA should have power to authorize commercial drone operators to ignore landowner airspace rights. As shown in the results

immediately below, more than 6 in 10 Americans believe that agency should not have such broad authority.

Poll Question: Should the Federal Aviation Administration (FAA) have power to authorize retailers to repeatedly fly delivery drones at low altitudes throughout a community even when local officials and landowners strongly object to those drone flights?	
Yes	39%
No	61%

When survey respondents were given a more detailed vision of the potential implications of rules allowing FAA-authorized commercial drone operators to fly freely over private land, their objections to such rules were even stronger. The following Drone Law Poll question asked specifically about the rights of landowners near a hypothetical retailer’s distribution hub where delivery drones would frequently come and go above a residential area. Its results found that more than three in four Americans believe residential landowners should be legally entitled to prevent frequent commercial drone flights over their homes.

Poll Question: Suppose an online retailer has announced plans to begin launching delivery drones from a new distribution facility. The drones will fly directly over certain homes situated near the facility at an altitude of 200 feet every five minutes during daylight hours, seven days a week. Should owners of these homes have rights to prevent the retailer’s drones from repeatedly flying over their land?	
Yes	76%
No	24%

Taken as a whole, the results gathered for these three Drone Law Poll questions reveal a sizable disconnect between drone advocates and ordinary Americans on the scope of landowners’ airspace rights. In short, the drone industry’s aggressive efforts over the past decade to effectively rewrite property laws to open up low airspace for drones have failed to change most Americans’ views on this issue. Instead, by wide margins, most Americans continue to believe they have rights to exclude unwanted commercial drones from flying above their land.

Who Should Regulate Where and When Commercial Drones Fly?

The results of the Drone Law Poll also provide valuable insights on Americans’ views about which government actors are best suited to regulate commercial drone operations. The federal government—and specifically the FAA—is unquestionably best suited to control some aspects of commercial drone regulation. Among other things, imposing manufacturing specification requirements and performance standards for commercial drones at the federal level is sensible so that drone manufacturers can have certainty that their products will qualify for sale in all 50 states.²⁰ Federal commercial drone registration requirements ensuring all commercial drones comply with a national remote identification system also valuably help to promote safety and accountability in this nascent industry.²¹ Likewise, it is easy to justify federal laws restricting

drone activities in national parks, near airports, and near military bases, federal prisons, federal borders, federally controlled critical infrastructure facilities, and similar sites.²²

However, in recent years the drone industry advocates have sought to extend the FAA’s drone regulatory jurisdiction well beyond that, suggesting at times that the agency’s regulatory power over flying objects extends all the way down to a “blade of grass” on the ground.²³ The FAA has sought to justify such an aggressive federal preemption approach to drone regulation on the premise that empowering states and municipalities to locally regulate drones would create a “patchwork quilt” of differing laws that would overly complicate civilian drone activities.²⁴ The agency’s preemption arguments are so extreme that one administrative law judge noted they would give the FAA regulatory jurisdiction even over backyard flights of paper airplanes and balsa wood toy gliders.²⁵

The Drone Law Poll’s results to a question about who should regulate where and when drones fly show that Americans’ views on this issue are vastly different from those of the FAA and drone industry allies. A meager 14 percent of respondents shared the FAA’s tenuous position that even civilian drone activities equivalent to those of backyard balsa wood gliders should fall under the agency’s regulatory jurisdiction.

Poll Question: Suppose a landowner is flying a small balsa wood toy glider within 30 feet of the ground over her own private backyard, far away from any airport. Which government entity is best suited to regulate this type of activity?

The Federal Aviation Administration (FAA) is best suited to regulate this activity.	14%
State governments are best suited to regulate this activity.	10%
Local governments are best suited to regulate this activity.	8%
So long as it does not threaten others’ safety, this activity should not be subject to federal, state, or local regulation.	68%

A related controversy in drone law and policy focuses on whether municipal governments should have supplemental authority to regulate where and when drones may fly within local neighborhoods. Given their superior knowledge about the distinctive features and preferences of their own communities, local government officials are arguably uniquely well suited to help regulate drone uses—just as they regulate land uses through zoning and related ordinances.²⁶ Despite these potential advantages of local involvement, drone industry advocates have lobbied aggressively over the past decade for laws designed to largely prevent municipalities from regulating drones. A handful of states have even enacted such preemption laws, substantially limiting municipalities’ drone regulatory powers in those states.²⁷ Such laws, for instance, prohibit city governments from limiting the hours or areas where Walmart or Amazon delivery drones fly—even if local residents and officials strongly desire such restrictions.

When asked whether local governments should have power to regulate commercial drone activities within their city limits, Drone Law Poll respondents again expressed views that sharply contrasted with those of the FAA and commercial drone industry advocates. Incredibly, 84 percent of respondents indicated they

favored some form of local drone regulation—a result that calls into question the FAA’s continued attempts to assert highly centralized federal drone regulatory authority and call for preemption of local drone laws.

Poll Question: Should a city government have authority to restrict commercial drone operations in certain areas within its city when it determines that such restrictions are needed to protect citizens’ well-being, safety, or privacy?

Yes	84%
No	16%

Valuing Drone Flights’ Harms to Landowners

One other notable Drone Law Poll question provides interesting data about how much landowners value being able to exclude unwanted drones from their low airspace. The question asked respondents to quantify what amount of money they would need to receive to agree to allow regular drone flights over their homes. The question’s results provide some of the first available information about the degree of harm that commercial drone operations cause to underlying landowners. As shown below, only 14 percent of respondents indicated that they would be willing to allow retailers’ drones to fly repeatedly over their home for free—even if those drones were flying 200 feet above the ground. Sixty-eight percent expressed that they would need to be compensated by more than \$1 per hour to agree to such drone overflights or that they would not agree to such overflights at any price.

Poll Question : Suppose a commercial retailer wants to pay you for permission to fly its delivery drones directly over your home to deliver goods to local consumers. These drone overflights would occur 20 times per hour during prenegotiated periods when no one in your household is at home and would maintain minimum altitudes of 200 feet. What is the minimum amount of hourly compensation you would accept to allow these drone flights over your land?²⁸

I would allow the retailer’s drones to repeatedly fly over my home for free.	14%
I would accept between \$0.01 and \$0.50 per hour to allow these drone overflights.	6%
I would accept between \$0.50 and \$1.00 per hour to allow these drone overflights.	11%
I would require payment of more than \$1.00 per hour to allow these drone overflights.	33%
I would not accept any hourly price to allow these drone overflights.	35%

These results provide a foreboding glimpse at the massive transfer of highly valuable property from millions of ordinary American landowners to massive corporations such as Walmart and Amazon if the FAA were to continue on its current course toward broadly authorizing commercial drone delivery operations across the country.²⁹ Such FAA actions would ultimately shift highly valuable airspace exclusion rights from landowners to these powerful companies without compensating landowners for their loss of those rights.

Differences in Poll Results Based on Age, Gender, and Political Affiliation

One other set of notable insights from the Drone Law Poll relates to differences among genders and across age groups and political affiliations in their views on drones. On the whole, these differences suggest female Americans may be more concerned than males about the privacy impacts of drone operations above residential land and that older and more politically conservative Americans may be more concerned about drones' threats to private property rights.

One interesting difference detectable in the poll results is that younger and more progressive Americans appear to be much more willing than older and more conservative Americans to let the FAA exercise broad authority over commercial drone operations. When asked whether the FAA should have power to preemptively authorize delivery drone operations in a community over local officials' objections, 54 percent of respondents aged 18 to 29 responded "Yes," while only 25 percent of respondents aged 65 or older gave that response. Differences in responses to this question based on political leanings were smaller but also substantial, with 47 percent of self-described "liberal" respondents favoring strong FAA authority over local drone operations and only 33 percent of "conservative" respondents supporting that approach. Such results are consistent with the broader tendency of older and more conservative Americans to safeguard local governance and personal property rights.

Perhaps even more revealing were the significant differences in results between self-identified male and female respondents on certain Drone Law Poll questions. For instance, 42 percent of female respondents indicated that they would "not accept any hourly price to allow" regular frequent commercial drone flights over their home. By contrast, only 27 percent of male respondents took this strong negative stance against commercial drone overflights. It's impossible to definitely know why women's monetary valuations of their rights to exclude unwanted drones were so much higher than those of men. However, these results are consistent with research suggesting that women tend to value privacy more highly than men when navigating online and in other settings.³⁰

Conclusion

As commercial drone technologies continue to advance, conflicts between drone users and landowners over low airspace are likely to only intensify. The YouGov poll results described in this report provide a valuable new perspective on how ordinary Americans view their rights to exclude drones from the low-altitude airspace immediately above the land. In particular, they reveal that commercial industry advocates' controversial interpretations of laws governing landowner airspace rights to open up low airspace for drone operations are inconsistent with most Americans' views about those rights. They likewise reveal that most Americans strongly favor empowering municipal governments to help regulate civilian drone operations—an approach that the FAA and drone industry stakeholders continue to resist.

The substantial differences in opinion about drone regulation and airspace rights highlighted in this report help to explain why US commercial drone delivery operations have expanded far more

slowly over the past decade than industry advocates had predicted. Recognizing that the drone industry's positions on airspace rights and drone regulation are inconsistent with those of most Americans will hopefully encourage industry actors to begin more seriously exploring alternative approaches to drone routing that embrace rather than ignore landowners' airspace rights.³¹

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The views expressed in this paper are those of the authors and do not necessarily reflect the views of The Center for Growth and Opportunity at Utah State University or the views of Utah State University.

Endnotes

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