

CLIENT ALERT

Key Takeaways from the Latest Major Study on Regulating Drones

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Last week the National Academies of Sciences, Engineering, and Medicine released a study commissioned by the Federal Aviation Administration to assess the risks of, and provide recommendations for, integration of unmanned aircraft systems (UAS) into the national airspace. The report focused on the FAA's current processes for approving UAS operations, limitations to these processes, and alternative approaches. The study was prepared by a committee that included high-level representatives from both academia and industry.

Historically, the FAA's regulatory philosophy on safety and the approval of new technologies has centered on the complete prevention of aviation accidents. This approach has been incredibly successful for manned aircraft, making air travel among the safest methods of motorized transportation. This success has allowed the FAA to shift its safety focus from accident-driven corrective actions to proactive prevention focused on the precursors to accidents.

The looming question for unmanned aircraft is whether a similar prevention focus applies. The bureaucratic hurdles central to that question may impede development of complex UAS operations. Merely obtaining a waiver to fly a drone at night or in certain airspace can take months, in large part due to the FAA's internal risk assessment process. For some operations, like flights beyond the pilot's visual line of sight or operations over people, a waiver is almost completely out of reach because, without substantial resources, an applicant cannot provide enough data and analysis to satisfy the FAA's rigorous risk mitigation requirements. The FAA has acknowledged the challenge, and has indicated its desire to move toward more practical, performance-based standards for approving UAS operations. In practice, though, there has been little headway in implementing such standards.

The National Academies study unveils a number of new recommendations that would effectively restructure the FAA's entire approach to UAS risk assessment and mitigation. These recommendations focus primarily on:

- Using different risk assessment methods, such as comparative risk analysis (comparing unknown risks to common known risks) or probabilistic risk analysis (using quantitative tools and simulations to determine risk probability).
- Implementing programs for the collection and sharing of UAS operational data so as to amass a more thorough and robust dataset for risk assessment.
- Culture change at the FAA focused on the differences in risk and mitigation between manned aircraft and UAS, as well as between higher- and lower-risk UAS operations.

The study also urges the FAA to take a holistic approach when assessing risk, weighing the limited risk posed by drones against their overall safety benefit – as illustrated by the reduced risk of using UAS instead of humans for tower or bridge inspections.

UAS technology is developing at a dizzying pace. Perhaps the single greatest limit on its continued development is the FAA's regulatory scheme limiting UAS technology's application. We may eventually reach the point where transport category UAS are carrying large numbers of passengers between cities. At that point, the FAA's stated goal of complete accident prevention may

make eminent sense as the governing standard. The concern for industry—the same concern driving the study—is that we will not reach that point unless and until the FAA unshackles industry in developing UAS technologies. The FAA would be well served, says the study, by taking a somewhat more flexible approach to regulating complex UAS operations, while still carrying out its mandate of aviation safety. The study is the latest to reveal, as elsewhere in the digital revolution, that unforgiving, one-size-fits-all approaches can cripple innovation without corresponding safety benefits.

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