





DRONE REGULATION SNAPSHOT: CHINA



China is the world's largest potential market for commercial drone use, due to its massive, increasingly digitally savvy population and booming economy. But the country has some of the world's most stringent laws governing the use of unmanned aircraft. This is largely due to the fact that the Chinese military controls nearly all of the airspace in the country, creating a myriad of issues for businesses and commercial drone operators. In addition, the Civil Aviation Administration of China (CAAC), the top aviation regulatory body in the country, maintains its own drone laws in the same way that the [FAA does in the US](#).

The country, notably, is home to the world's preeminent consumer and enterprise drone manufacturer, DJI, which [controls](#) about 70% of the global consumer and enterprise drone hardware market, according to 2016 estimates from Goldman Sachs and Oppenheimer. Partly as a result, as well as due to its long history of fostering the adoption of new technologies, the country's government has granted permits for 120,000 commercial drones, which amounts to approximately 11,500 people per commercial drone. This is significantly fewer drones per person, however, than are registered in the US. The FAA has granted permits for 77,000 enterprise drones, or one for about every 4,200 people. In addition, the Chinese government has played an active role trying to train drone pilots, [recognizing](#) about 200 private training facilities that have issued a total of 14,000 certificates, which are mandatory to be a commercial drone operator in the country.

CHINA BY NUMBERS		
	Gross Domestic Product	\$11.2 trillion
	Regulating Agencies	Civil Aviation Administration of China, Chinese military
	Wireless broadband penetration	75%
	Estimated drone market size	\$9 billion by 2020
	Line of sight requirement?	Yes
	Pilot requirements	Must have certificate issued by recognized training facility
	Name of law regulating drones	Interim Provisions on Light and Small Unmanned Aircraft Operations (UAS Operation Provisions)
Source: World Bank, OECD, CAAC, The Ministry of Industry and Information Technology,		BI INTELLIGENCE

Additionally, the CAAC has granted exemptions to its rules to a handful of businesses for substantial commercial operations, mostly to fly the aircraft over people. For instance, JD.com, the country's second-largest e-commerce provider, is already [using](#) drones to perform deliveries in the suburbs of Beijing and several other rural provinces. To conduct these operations, the company needed to secure permission from the CAAC to fly the aircraft over humans and demonstrate how it could safely do so. Additionally, JD.com was granted an exemption to fly the aircraft beyond the line of sight of its operators, albeit only for a few select delivery routes.

Top Regulatory Issues

1. Unlike in most western countries, the Chinese military controls the vast majority of the country's airspace. Last year, China Daily, a state-run newspaper, [estimated](#) that less than 30% of the country's airspace was available for use by non-military personnel, such as commercial airlines or drones. In the US, on the other hand, nearly [80%](#) of the airspace is available for civilian use. For commercial drone use, this means there's far less space for the aircraft to operate than there is in other markets, even when accounting for the difference in size between China and other nations.

2. Western drone companies, often young, under-capitalized startups, usually struggle to form joint ventures to operate in the country. Due to Chinese economic policy, most foreign companies that want to operate in the country need to form these sorts of partnerships with domestic companies. General Motors (GM), for instance, has a joint venture with SAIC Group, one of the country's largest automakers. While this isn't a major issue for behemoths like GM, it can be difficult for drone startups with limited resources that are often less than a decade old. As a result, while many western drone service providers, including PrecisionHawk, Airmap, and others, have explored the region, none have built a very strong presence in the country.

Commercial Drone Laws In China			
Pilot Requirements	Aircraft Requirements	Location Requirements	Operating Rules
<ul style="list-style-type: none"> -Pilots must be granted a permit from one of the CAAC's recognized training facilities. -Companies need to be granted licenses from the CAAC for all commercial drone usage. 	<ul style="list-style-type: none"> -Must be registered with the CAAC if the drone weighs more than .55 pounds. -Must be granted a license to use drones weighing over 15 pounds. 	<ul style="list-style-type: none"> -Can't fly over or within 100 meters of airports, military bases, and large urban centers such as Shanghai and Beijing. -Can't fly higher than 400 feet in the air. -Can't fly the aircraft beyond the line-of-sight of the operator. 	<ul style="list-style-type: none"> -Must get approval from CAAC for all commercial flights. -Cannot fly over or within 500 feet over airports or military bases. -Must "exercise caution" when flying over other humans. -Can't fly the aircraft faster than 100 kilometers per hour.
Source: Civil Aviation Administration of China (CAAC)		BI INTELLIGENCE	

A Look At What Comes Next

Industry experts told Business Insider Intelligence that they expect the Chinese government to grow more lenient in granting exemptions to its drone laws, even if the country's official regulations don't change. That will likely push China to become the largest market in the world for commercial drone use. The Chinese government is notorious for not wanting to be behind the adoption curve of new, disruptive technologies, and is even willing to spend billions to ensure it stays ahead of other highly developed countries. Notably, it recently announced a massive new [initiative](#) to build AI solutions that are more advanced than those privately built in the US.

That means as the US, EU, and other technologically advanced markets begin to create more favorable drone laws in the next few years, China could potentially follow suit and either revise its drone laws to become more favorable to commercial use or grant more exemptions to its laws than it currently does, causing the market to take off. In fact, the country's Ministry of Industry and Information Technology [estimated](#) late last year that the country's commercial drone market will be worth \$9 billion by 2020, up significantly from a 2016 iResearch report that sized the Chinese drone market at only around 75 million yuan (\$11.9 million).

Additionally, the Chinese government will create standards for four categories of commercial drone use in the not-too-distant future. The CAAC and the government are currently working together with city and local governments to curb incidents where drones interfere with other aircraft, an effort that somewhat mirrors a similar initiative the Trump Administration is taking up in the US. Eventually, the CAAC will group commercial drone initiatives into one of four categories: agriculture, aerial surveillance, aviation photography, and license training. This, interestingly, doesn't include last-mile deliveries, although it's possible new rules governing this use case will be developed later on after further testing.

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