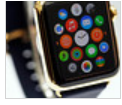
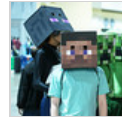


TOP STORIES IN TECH

1 of 12



What Top Watchmakers Think of Apple



Minecraft Fans Fear Microsoft

2 of 12



Will Stores Warm to Apple Pay?

3 of 12



Google's Deal f... Polar Shows it ! No...

TECHNOLOGY

# Google Is Testing Delivery Drone System

Amazon.com, Domino's Pizza Have Also Tested Delivery Drones

Email Print 102 Comments

By ALISTAIR BARR and GREG BENSINGER CONNECT

Updated Aug. 29, 2014 4:04 a.m. ET

Google's advanced-research lab said it is developing a system of drones to deliver goods with its Project Wing prototype. Photo: Google

The latest endeavor to emerge from [Google](#) Inc. GOOGL -1.15%'s advanced-research lab is flying into a field buzzing with competitors.

Google X said Thursday it is developing a system of drones to deliver goods. Rival [Amazon.com](#) Inc. AMZN -1.10% is also testing delivery drones, and [Domino's Pizza](#) Inc. DPZ +0.03% tested delivering pies via drone in 2013.

Is the U.S.'s regulatory framework in position to welcome a new delivery drone being tested by Google? Brendan Schulman from law firm Kramer Levin joins MoneyBeat. Photo: Getty Images.

farmers in Queensland, Australia, earlier this month.

Google said a 5-foot-wide single-wing prototype from its Project Wing carried supplies including candy bars, dog treats, cattle vaccines, water and radios to two

[Google's drones](#) are 2½ feet high and have four propellers that move into different positions for different stages of flight. Packages fit into a gap in the middle of the wing. Google said it began test flights last year.

The rush to the skies comes despite the fact that commercial drone use is mostly banned in the U.S. The Federal Aviation Administration is considering regulations



WSJ is the Journal's home for tech news, analysis and product reviews.

- Apple Sends Invites to a Sept. 9 Event
- Samsung, LG to Compete Head On in Berlin With New Smartwatches
- You Can't Eat These Chips, but Some Find Silicon Addictive
- FBI Probes Hacking Claim at J.P. Morgan, Other Banks

## Popular Now

What's This?

### ARTICLES

1 Opinion: The Humbling of a President



2 Ceremony Marks 13th Anniversary of Sept. 11 Attacks

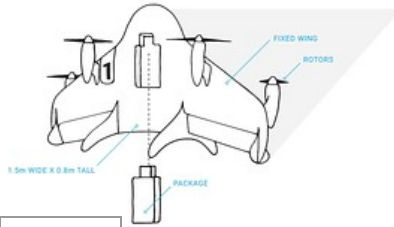


3 Princeton Maintains No. 1 Spot in College Rankings

**More From WSJ**  
**Five Things To Read Today**

to change that and in June approved the first commercial drone flight over land—for energy giant [BP](#) (BP.LN +0.13%) PLC in Alaska. But the regulator is moving carefully because the technology is potentially dangerous and raises privacy concerns.

Google began working on drones in 2011 and said it expected it would "take years to develop a service with multiple vehicles flying multiple deliveries per day."



Google says these planes will have more in common with the Google self-driving car than the remote-controlled airplanes people fly in parks on weekends. Google

Google aims to have the drones flying programmed routes at altitudes of 130 feet to 200 feet with the push of a button. Precise navigation will be needed to pick the most efficient routes while controlling noise, respecting the privacy and safety of people on the ground and delivering items to an area the size of a doorstep, Google said.

A YouTube [video](#) released by Google shows Australian farmers ordering dog food. The drone takes off vertically, with

its single wing pointing to the sky. Once in the air, the wing turns into a horizontal position and the vehicle flies fast, more like an airplane than a hovering, helicopter-like drone.

Google X works on long-term, risky projects with big potential payoffs, which Chief Executive [Larry Page](#) calls moonshots. The company hopes its drones will create new economic growth opportunities by moving goods around more efficiently.

Google hired Nick Roy, an associate professor of aeronautics and astronautics at the Massachusetts Institute of Technology, in July 2012 to head the project. Mr. Roy returned to [MIT](#) this month and Dave Vos, a veteran in automated aviation systems, joined Project Wing to work on turning the prototype into a commercial product, Google said.

**WSJ Radio**

Listen to the latest technology news from The Wall Street Journal Radio Network.

00:00 | 03:36

Amazon said late last year it was testing delivering packages using drones. Earlier this year the e-commerce giant [asked the FAA](#) to test the vehicles in open U.S. airspace.

Amazon's initial prototypes looked like a typical drone, with small rotor blades arranged in a square.

The company hopes the helicopter-like vehicles will be able to drop-off items generally weighing less than 5 pounds within a 10-mile radius of its warehouses in about 30 minutes.

Amazon has acknowledged that regulatory approval could take several years. Along with Google and drone makers DJI Innovations, Parrot SA and 3D Robotics, it retained Akin Gump Strauss Hauer & Feld LLP to help lobby the government on civilian use of drones.

"I don't know that Google is much better positioned than Amazon or anyone else in terms of technology, but the company has a track record of being influential in terms of policy," said Ryan Calo, a law professor at the University of Washington who studies robotics and privacy.

Earlier this year, the FAA said it didn't contemplate autonomous drone delivery, effectively grounding Google's and Amazon's ambitions for now, Mr. Calo noted. However, he said having both Google and Amazon working to change the FAA's view increased their chances of success.

Commercial drone use by these companies faces legal and practical headwinds. Legal experts have questioned the legality of operating drones within homeowners' airspace



**4 The Best Language for Math**



**5 Obama Lays Out Plan to Fight Islamic State Militants**



**VIDEO**

**1 Inside a Russian Billionaire's \$300 Million Yacht**



**2 Inside Germany's Fanciest Car Wash**



**3 The Islamic State: How Its Leadership Is Organized**



**4 Stunning Timelapse of the Earth From Space**



**5 Obama: 'We Will Degrade and Ultimately Destroy ISIL'**



and raised insurance issues.

Write to Alistair Barr at [alistair.barr@wsj.com](mailto:alistair.barr@wsj.com) and Greg Bensinger at [greg.bensinger@wsj.com](mailto:greg.bensinger@wsj.com)

Email Print 102 Comments Order Reprints

WSJ In-Depth



Foreign Policy Is Election Wildcard



Fashion Gets Emotional



Agents Raid L.A. Garment Businesses



Minecraft Fans Fear Microsoft



NCAA Lifts Penn State's Postseason Ban



Marathon, Meh, Try Running a Mile

SPONSORED RESULTS

- [High-Yield CD Rates](#)
- [Best Dividend Paying Stocks](#)
- [Dividend Stocks To Buy](#)
- [2014 Luxury Sedans](#)
- [Top Stocks To Buy Now](#)
- [Top Stocks To Invest](#)
- [2014 Luxury Cars](#)
- [Best Stocks To Buy](#)
- [High Yield Bond Funds](#)
- [Top Income Funds](#)

Join the Discussion

SET YOUR PROFILE TO PUBLIC TO COMMENT

There are 102 comments.

12 people watching.

		999 <b>POST COMMENT</b>

All comments will display your real name. Read our [commenting rules](#).

Newest



James Doppelheuer

Don't worry, that drone peeking in your window is just delivering the pizza next door...

13 days ago



John Salicco

@James Doppelheuer Actually it's your neighbor's teenage son with one of

these: <http://www.dji.com/product/phantom-2-vision>

(Thank you Craig Shields for the link.)

You can get a base model for under \$500.

13 days ago



Anthony Pohle

@James Doppelheuer Well said! Very well said.

12 days ago



Donald Berrian

I guess Google needed something like Google Glass: lots of publicity, but certain to be shot down by the public, in this case literally!

13 days ago



DAVID PASS

Outside of a zombie apocalypse, at what point do I need to order some merchandise that can't wait even a single day, but at the same time does not prompt me to go get it myself? Now, you want to replace the odd fellow that delivers the Chinese take-out, that might sell. I'm not tipping a drone.

13 days ago



John Salicco

@DAVID PASS There is no point for you, apparently, but why do wish to deny the option from others who may see the point? No one's going to force you to take delivery by drone.

Honestly, some of these objections are pretty thin.

13 days ago

[SHOW MORE COMMENTS](#)



[Back to Top](#)

**Customer Service**

- [Customer Center](#)
- [New! Live Help](#)
- [Contact Us](#)
- [WSJ Weekend](#)
- [Contact Directory](#)
- [Corrections](#)

**Policy**

- [Privacy Policy](#)
- [Cookie Policy](#)
- [Data Policy](#)
- [Copyright Policy](#)
- [Subscriber Agreement & Terms of Use](#)
- [Your Ad Choices](#)

**Ads**

- [Advertise](#)
- [Place a Classified Ad](#)
- [Sell Your Home](#)
- [Sell Your Business](#)
- [Commercial Real Estate Ads](#)
- [Recruitment & Career Ads](#)
- [Franchising](#)
- [Advertise Locally](#)

**Tools & Features**

- [Apps](#)
- [Emails & Alerts](#)
- [Graphics & Photos](#)
- [Columns](#)
- [Topics](#)
- [Guides](#)
- [Portfolio](#)
- [Old Portfolio](#)

**More**

- [Reprints](#)
- [Content Partnerships](#)
- [Conferences](#)
- [SafeHouse](#)
- [Mobile Site](#)
- [Price & Volume](#)
- [Keyword & Symbol](#)
- [News Archive](#)

