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# ABOUT US

## Where We Came From

SICdrone was founded in 2015 with the premise of creating a reliable and superior drone to operate in rugged environments. The company's headquarters are located in Portland, Oregon where the CEO, Dan Bosch, resides. This branch also includes engineers with experience in software, electrical, and mechanical engineering, as well as a business management and sales team. Other members of the executive staff are located in San Diego, California (Neil Puri – CFO), and Boston, Massachusetts (Tom Brigham – CTO).

SICdrone, Inc. was founded by three aerospace engineers with the goal of developing superior commercial small unmanned aircraft systems (sUAS) tailored towards industries where reliability, stability, speed, and endurance are mission critical. SICdrone is the first small drone company to fully integrate a technology only seen on military aircraft to this point, 360 degrees of thrust vectoring. The ability to rotate propellers and direct thrust in any direction allows for higher performance, including; unmatched acceleration, deceleration, stability, maneuverability, power efficiency, higher cruise speeds and top speed capability exceeding 100mph. Speed is a considerable advantage considering larger multicomputer drones are currently testing at top speeds closer to 50mph.

In 2016, SICdrone partnered with Jaguar Land Rover (JLR) to develop an advanced unmanned hexacopter with enhanced stability during high-speed situations to launch from and pair with ground based vehicles. SICdrone was accepted into the JLR Tech Incubator program in spring 2016, after competing with over 100 other applicants for the prestigious spot open to companies with breakthrough technologies. Being in the incubator program allowed SICdrone access to JLR automotive engineers and resources, as well as a source of investment. SICdrone traveled to London in April of 2017 to visit with Jaguar Land Rovers Special Vehicle Operations (SVO) group and has secured a contract extending into 2018.

# DRONE

## Product Details

SICdrone aims to create a commercial small Unmanned Aircraft System (sUAS) that can be depended on in high stress situations where mission success is critical and failure is not an option. Typical quad, hex, and octocopters in today's market lose speed capabilities as the drone weight increases. SICdrone uses its unique 360-degree thrust vectoring system, where the right and left propellers on the hexacopter are able to rotate, to enable its drones to reach higher max speeds as its weight increases, allowing for increased stability, speed, and payload. So while typical recreational and commercial drones have to choose between either speed or payload, SICdrone has designed drones that offer the best of both worlds. SICdrone produces the world's first commercial multicopter drones capable of reaching a 100mph cruise speed. There is no other multicopter out there that can outperform SICdrone in flight mission capability.

The aggressive speed and performance targets set by the engineering team of SICdrone are attainable through the use of lightweight aerospace grade materials that optimize flight performance. Furthermore, the concept of a triple redundant system (a minimum standard in the aerospace industry) implies that single points of failure are virtually eliminated during the SICdrone design and development process. SICdrone is keenly focused on safety and minimizing failures in the field and aims to develop a highly reliable sUAS. We believe this will be essential to gaining trust from the public and acquiring market share.

## Drone Highlights:



- Maximize Flight Time: Over 1.5 times the distance on the same power source by maximizing power efficiency



- High Speed Multicopter Drone: Over 2 times the speed of existing commercial multicopter drones with a speed optimized aerostructure and thrust vectoring capability



- Active Stabilization: Smooth flights while aircraft carries larger payloads, holds position in high wind conditions, immediate starts and stops possible with payloads up to 25 pounds



- Seamless Integration: SICdrone sUAS are suited for any camera or sensor used in commercial drone industries

Furthermore, SICdrone is currently developing enhanced flight control security and a user friendly and intuitive tablet based interface allowing users complete control of the system with minimal cognitive involvement and supervision. This control system can also be an embedded system within a moving vehicle, such as a car, that allows the driver hands-free control over the sUAS. The sUAS is capable of launching and

landing autonomously from a rooftop platform in rugged environments and will be capable of replacing the battery with no human intervention. SICdrone is currently in negotiations to provide their product and services to companies within government backed emergency and military response markets such as fire departments, US Air Force, SOCCOM and global humanitarian organizations. However, SICdrone recognizes the broad need for this application within defense, border patrol, private security, agriculture and construction among a host of other applications as well.

SICdrone sUAS models:



**SD5**

Speed

Payload Capacity: 5lbs

70mph-100mph Max Horizontal Speed Based on Sensor Package

Cruise Speed for Max Flight Distance: 25mph\*

Aerostructure

13-Inch Rotor System

Diametral Size: 3ft

Empty Weight: Under 5lbs

Body Material: Carbon Fiber, Titanium, Aluminum, Steel, and CFRP

Performance

Hover Accuracy in 50 mph Gusts: +/-1ft\*

Range: Telemetry 7000ft/Video 3000ft (extensions possible)

High Wind Positional Hold: 65mph\*



**SD10**

Speed

Payload Capacity: 10lbs

70mph-100mph Max Horizontal Speed Based on Sensor Package

Cruise Speed for Max Flight Distance: 35mph\*

Aerostructure

22-Inch Rotor System

Diametral Size: 6ft

Empty Weight: Under 12lbs

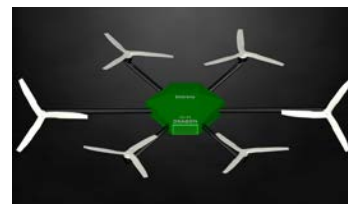
Body Material: Carbon Fiber, Titanium, Aluminum, Steel, and CFRP

Performance

Hover Accuracy in 50 mph Gusts: +/-1ft\*

Range: Telemetry 7000ft/Video 3000ft (extensions possible)

High Wind Positional Hold: 65mph\*



**SD25**

Speed

Payload Capacity: 25lbs

70mph-100mph Max Horizontal Speed Based on Sensor Package

Cruise Speed for Max Flight Distance: 40mph\*

Aerostructure

31-Inch Rotor System

Diametral Size: 8ft

Weight: Under 20lbs

Body Material: Carbon Fiber, Titanium, Aluminum, Steel, and CFRP

Performance

Hover Accuracy in 50 mph Gusts: +/-1ft\*

Range: Telemetry 7000ft/Video 3000ft (extensions possible)

High Wind Positional Hold: 65mph\*

\*Calculated Estimates

## Cost & Configurations

Depending on the size, sensor, and camera packages selected, the total cost of a drone can be anywhere from \$3,000 to over \$50,000. UAS System Kits offered will be: First Responder, Construction-Excavation, Inspection, Agriculture, Smart City, Surveying-Mapping and Security-Patrol.

## Real World Solutions to Real Industry Concerns



**Urban Environments / Smart Cities** – From easing traffic congestion by signaling to change stoplights to analyzing events and construction, SICdrone makes cities smarter through better aerial views that capture better data.

**Emergency Response / Search and Rescue** – SICdrone gives emergency responders such as fire fighters greater ability to immediately assess the scene of a disaster and identify danger and/or injured people.

**Vehicle Pairing** – Flying over buildings, scanning rooftops and behind buildings, assessing traffic in real-time, providing better information at faster speeds, SICdrone can pair with off-roading SUVs and first responders such as Police, Ambulances, and Fire Departments stay safe and save lives by providing immediate launch capability from a vehicle upon arrival to an event.

**Agriculture** – Our hover-type multicopter goes straight to the problem area, allowing for quick takeoff and more precise crop imaging. Capabilities include: crop monitoring (disease, irrigation), water absorption of soil measurement, spraying to manage weeds and other pests, and precise agriculture (crop planting).

**Filming and Photography** – From film studios to real estate photographers, professionals capture superior photos with state of the art camera systems should have the same high quality in the drone they use.

# SICDRONE TEAM

## Military and Corporate Leadership Experience

The management team is made up of Dan Bosch (CEO), Neil Puri (CFO), and Tom Brigham (CTO). Each has unique talent and experience in the aerospace field that they bring to the SICdrone team.

Dan (MBA, BS in Engineering), a US Navy Veteran, and Tom (BS in Engineering) have over 25 years of combined aerospace engineering experience and truly understand the reliability and design aspects of both fixed wing and helicopter aircraft. Dan has previous experience working as an engineer at Boeing and United Technologies. Dan's strength in structural integrity is crucial to the development of a safe and reliable sUAS. Tom has engineered components on high performance helicopters including the Sikorsky S-97 Raider and the Bell V-280 Valor.

During his time at the Rady School of Management at the University of California San Diego as an MBA student, Dan developed an interest in Unmanned Aerial Vehicles (UAVs). Dan was especially interested in their ability to gather data and to assist emergency response situations. While at UCSD, Dan and fellow MBA student Neil Puri began developing a plan to build a drone that had abilities well beyond those of current drones.



Members of the SICdrone team working out of the Portland office. From left to right, Dan Bosch, Alex Michel, Jordan Goldey, Thomas Manfredonia, Joseph Dummer, and Tom Vankeppel in April of 2017

Neil Puri (MBA, MS in engineering) previously worked at General Atomics on the Predator drone and has seen the evolution of the design of military UAS. The first concept, similar to today's commercial drones, began with a propeller design, external payloads, and limited plug and play capabilities, and uses a jet engine. We strongly believe that several of these features including internalized payloads, plug and play capabilities, and extended flight time will be the future of the commercial UAS market. With this foresight, SICdrone will lead the industry in design capabilities and focus on progressive features that increasingly meet our customers' needs and create immense value.

## Diverse Company Culture

Beyond its experienced executive level leadership, SICdrone has a team with a broad range of backgrounds, with people who bring unique skills and talents, both in the aerospace industry, and beyond. The engineering team is a talented group with experience in electrical engineering, computer science, software engineering, mechanical engineering, web and app development, marketing, finance and business. SICdrone is a veteran owned company that encourages everyone; white, black, LGBTQIA, minorities and women in engineering to apply and work for us!

## PRESS



SICdrone bridges the gap between drones for the hobbyist market and drones that address the requirements for commercial and public safety applications. – **Portland Business Journal**



SICdrone's technological advances and capabilities set it apart from the rest of the pack. – **Rady School of Management, University of San Diego**



Drones are long overdue for a drastic reboot, necessary to ensure their capabilities match their far-reaching possibilities. SICdrone is one startup that's reimagining the design, performance, and reach of the multicopter drone. – **Jaguar Land Rover Tech Incubator**



When you encounter an innovation that promises to improve performance across attributes that typically work against each other – like speed and stability – you have something really special. That seems to be what the guys at SICdrone have come up with. – **Roswell Flight Test Crew**



SICdrone tiltrotor systems are second to none when comparing speed, maneuverability and stability to existing small drone technology. – **CrowdOptic**



Excellent solution for increased speed. Recommend this technology integrated into a SOF (Special Operations Forces) drone... Good for rapid delivery of payload pending on weight carrying capacity. – **SOFWERX**

## Articles About SICdrone

<http://www.bizjournals.com/portland/blog/techflash/2016/10/portland-startup-focuses-on-faster-higher-quality.html>

[http://rady.ucsd.edu/news/newsletter/2016/summer/the-fast-track-to-success-after-graduation/index.html?utm\\_source=newsletter&utm\\_medium=eblast&utm\\_content=2016-july&utm\\_campaign=news](http://rady.ucsd.edu/news/newsletter/2016/summer/the-fast-track-to-success-after-graduation/index.html?utm_source=newsletter&utm_medium=eblast&utm_content=2016-july&utm_campaign=news)

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<http://www.marketwired.com/press-release/crowdoptic-partners-with-SICdrone-to-orchestrate-cameras-on-fleet-of-flying-drones-2111393.htm>