



SLINGS *AND* ARRO

- WISK-ARCHER LAWSUIT PITS TRADE SECRETS AGAINST EMPLOYEE KNOW-HOW
- ARCHER'S MINIMUM VIABLE PRODUCT STRATEGY IS POPULAR IN SILICON VALLEY

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As midnight approached on Christmas Day 2019, “Engineer Z” was busy at work—allegedly downloading more than 3,400 files from Wisk Aero’s Google Drive. A few weeks later, Engineer Z gave his employer a one-sentence notice: “I’ve decided to leave Wisk Aero LLC today.”

Engineer Z was one of 10 employees to abruptly leave Wisk, an electric air taxi developer, between Jan. 8 and Jan. 14, 2020, to work for an obscure upstart rival. In the past few years, Engineer Z’s new employer, Archer Aviation, has leapfrogged the competition—including Wisk—and says it is poised to be one of the first electric vertical-takeoff-and-landing (eVTOL) aircraft companies in the world to start carrying paying passengers.

Allegations of intellectual property theft, such as the one above against the pseudonymous Engineer Z, form the basis of the Wisk Aero LLC v. Archer

Aviation Inc. lawsuit filed in 2021, a contentious dispute pitting intellectual property rights against employee know-how. In May, Judge William H. Orrick III of the U.S. District Court for the Northern District of California decided to send some of the allegations in the lawsuit to trial. Wisk Aero declined to comment, citing a policy on not speaking about ongoing litigation. Archer Aviation did not respond to a request for comment.

The lawsuit is partly a story of worlds colliding. Wisk, which was wholly acquired by Boeing in May and whose staff includes veterans of storied

aerospace companies such as Scaled Composites, has taken a methodical and cautious approach to developing its eVTOL vehicle.

The aerospace sector has traditionally had a slow-moving culture of incremental technology development—a legacy of being dominated by two lumbering giants, Airbus and Boeing, but also being heavily regulated by safety authorities. Seared into the collective memory of the industry is this reality: It takes a lot of money, time and know-how to design, build, certify and safely fly an aircraft.

Archer was founded by two entrepreneurs from the internet sector who made their mark in five years by building, launching and selling an online hiring marketplace, Vetterly, for \$100 million. The technology industry brings with it a culture of employee-poaching and venture capitalists who are accustomed to accelerated



▶ WISK SAYS IT IS PROTECTING HARD-WON INTELLECTUAL PROPERTY

WISK

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software development timelines and expect a fast return on investment.

Archer's aircraft development strategy is akin to the minimum viable product (MVP) concept popular with Silicon Valley software startups: build a product with enough features to be usable by early customers who can provide feedback for improvements.

"Let's go out and build a vehicle that we think we can get to market using today's technology—not a future battery—and let's get it to market as fast as possible," Adam Goldstein, Archer co-founder and CEO, told Aviation Week in October. "I was the first one to come out and say: It's time to commercialize. Let's stop the engineering. . . . Let's bring it to market."

Wisk Aero has a different approach. The company has been working for more than a decade to create an electric air taxi—a "Jetsons"-like eVTOL that would fly passengers autonomously on hops around cities—and sees years of development ahead. Backed by Boeing and billionaire Larry Page, a Google co-founder, the company has spent hundreds of millions of dollars and employed hundreds of staff to develop its aircraft.

Progress has not come easily, the company says. It has taken more than 12 years, five generations of prototypes and 1,600 flight tests to realize a production design; Wisk unveiled a mockup of its Generation 6 production eVTOL to the public in October.

Wisk grew concerned when Archer Aviation emerged from stealth mode in May 2020, staffed with former Wisk employees—including Thomas Muniz, Wisk's former vice president of hardware engineering, who allegedly recruited its workers—and an eVTOL concept with six tilting rotors at the wing leading edge, six fixed rotors at the trailing edge and a V-tail. Wisk had submitted drawings of the same configuration to the U.S. patent office several months earlier.

Right out of the gate, Archer Aviation started to raise loads of venture capital investment and made "stunning apparent progress," Wisk's lawsuit says. Sensing something illegal, Wisk sued Archer Aviation, alleging theft of trade secrets and infringement of patents. Archer denies all of the allegations and is countersuing Wisk, including for defamation.

The two aircraft clearly have similarities. However, the question that is set to go before a jury is: What did former Wisk employees take with them—intellectual property or experience?

The line between know-how you can take to your next job and proprietary information is blurry. Judge Orrick has already knocked down several of Wisk's claims—including its patent on the 12-tilt-6 configuration, noting that the aircraft design is publicly known and there is not enough evidence to show that Muniz (now Archer's chief operating officer) might have used proprietary information to help guide Archer's design decision.

"Not only does Wisk fail to provide circumstantial evidence that Muniz used that underlying knowledge and information at Archer, Wisk also does

not provide evidence of what Muniz actually knew—beside the general existence of tilttable rotors," Orrick wrote.

Several of Wisk's other allegations were rejected by the judge in summary judgments, including the allegation that Archer used a "detailed aerodynamic data" trade secret that was derived from Wisk's analyses and tests carried out using simulation data.

Yet multiple other allegations against Archer regarding battery performance—seen as one of the most difficult challenges for eVTOL performance and profitability—are headed to trial.

Archer has claimed that batteries and certain other technologies are commercially available and at a performance level to facilitate regular eVTOL flight. It has said it minimized research and development and chose to freeze certain design requirements early in the engineering process to establish a rapid timeline to certification with the FAA.

With its MVP strategy, Archer wants to go to market more quickly using a pilot, short air-taxi flight routes and cash generated by selling its eVTOLs to the helicopter replacement market. The company says it is poised to receive a Part 21.17(b) type certificate for its Midnight production aircraft by the end of 2024 and would be one of the first in the world to start service in 2025.

For its part, Wisk is attempting a more complicated feat—fully automated eVTOL passenger flight. It believes automation is necessary because battery performance limits an eVTOL to four passengers, and an air-taxi service would not generate enough revenue from those customers to offset the cost of a pilot. Wisk sees a price target of \$3 per passenger per mile as possible by removing a pilot from the cockpit. The company is aiming for service entry of the automated aircraft around 2030.

Wisk also notes that designing, building and certifying an aircraft in less than a decade is unheard of—especially a clean-sheet aircraft with novel propulsion. It says that such a short timeline could not have been accomplished without taking an illegal shortcut. Archer asserts that it is advancing with a better business plan, narrowly focused technology development and established industry knowledge. The company says Midnight

air-taxi services should be cost-competitive with ground-based ridesharing services like Uber and Lyft.

Archer has not been shy about touting the job experience of its employees, including Muniz, but also its chief engineer, Geoff Bower. Both worked for Wisk's predecessor companies, Kittyhawk and Zee.Aero, starting in 2010 and 2011. Bower worked for Airbus' Vahana eVTOL project between 2016 and 2019, too—after leaving Wisk but prior to joining Archer in early 2020.

"My struggle has always been, if you look at the industry, you have the original guys, [Muniz] and [Bower], that started the whole industry, but they switched jerseys," Archer's Goldstein said in October. "The world has viewed it as if they're starting over. . . . We get

tilt-6 design, prior to any Wisk employee joining, the company adds.

With that prior research and know-how, Goldstein has said Archer focused on executing a better strategy.

"How do you build the least complex vehicle that'll complete the mission? That's the goal," Goldstein said in October. Performance improvements such as higher cruise speeds, extra range and additional flight autonomy—if they did not aid certification or the business case—were waived, he said.

"If the difference is my flight takes 7 min. versus 6 min. and 40 sec., yet I can lower the price because I'm not killing our batteries fast and I can have a better product, I think that makes more sense," Goldstein said.

The aerospace industry continues to debate whether conventional lithium-

the end of service, Archer has said.

Performance for the Midnight was tuned to serve the most profitable routes, Archer has said, using its proprietary data modeling program called Prime Radiant and cell phone tracking data to find routes where potential customers spend a lot of time in a car and might save time flying in an air taxi.

However, the mission profile of Archer's Midnight production aircraft and its batteries are at the heart of multiple allegations in Wisk's lawsuit, including that former employees leaned on its internal studies to design Archer's aircraft.

For instance, Wisk alleges that Archer's model for predicting battery power requirements during different flight stages is based on a value and a function that are also parts of Wisk's model. The resulting "performance studies for typical mission profile" is a trade secret, Wisk claims.

Wisk alleges that two of its former employees chose specific values to be put into Archer's model for predicting and simulating battery performance that was based on their prior work.

One former employee says the chosen input was based on "estimates," according to a court filing. An expert testifying for Wisk says it "originated" from knowledge of the trade secret and was input before Archer had conducted any tests of its own, according to a court filing. Archer disputes the evidence.

Whether information is a protected trade secret or employee know-how can be difficult to tell, says Justin Wilcox, a partner with law firm Desmairs, speaking about intellectual property rights in general. "Typically, courts have said just general knowledge in the field that you pick up along the way on the job is yours and you're free to take that to another job," he says. "Where the line becomes murky is very specific information."

Take, for example, the most famous trade secret of all: the recipe for Coca-Cola. Grocery stores and other beverage companies have for years produced knock-off colas and legally kept them on the shelf by imitating the taste of the real thing without using insider knowledge of the proprietary formula.

However, if a former Coca-Cola employee had taken documents containing the soda formula or memorized it and then brewed a cola with that knowledge, it would violate the trade

ARCHER AVIATION



Archer says it has done its homework and devised a better go-to-market strategy.

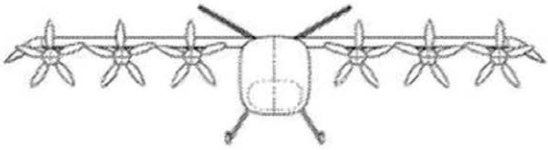

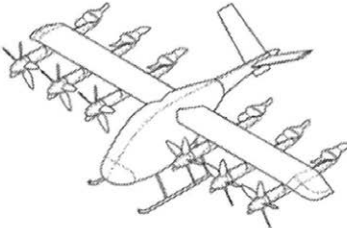

viewed as the new kid on the block even though our team, I think, is very well-tenured."

Archer also points to the Archer Aviation eVTOL Lab at the University of Florida that it funded and says was used to pioneer its own technology. The startup adds that in September 2019, it hired FlightHouse Engineering, a company specializing in the conceptual design of aircraft, to do initial development work.

"FlightHouse has its own proprietary software that allows it to simultaneously analyze numerous design disciplines (e.g., aerodynamics, propulsion, structures, mass properties, performance and payload effectiveness) with high fidelity to generate optimized aircraft designs," Archer stated in a court filing. FlightHouse presented Archer with numerous design options, including the chosen 12-

ion batteries have enough energy density and cycle life to sustain a profitable air-taxi business. Batteries lack the energy density of aviation fuel, limiting electric aircraft range. Batteries also recharge more slowly than an aircraft can be refueled with avgas, and batteries degrade over time, limiting the number of flights an eVTOL aircraft can take before the expensive energy storage system must be replaced.

Archer says it has optimized performance on its Midnight eVTOL to be profitable. That aircraft, which is still in development and has not flown, is designed to carry passengers on short hops, such as 20-mi. routes between airports and downtown centers. It is expected to fly 45 trips per day with 10-min. charge cycles on the ground to top off the battery between flights. The eVTOL's batteries provide a range of up to 100 mi. initially and 70 mi. at

Wisk (January 2020 Patent Application)	Archer Investor Deck 2021
	
	

WISK AERO V. ARCHER AVIATION LAWSUIT COURT FILING

secret, Wilcox says. Even if only parts of the trade secret were taken but then combined with other original or publicly available ideas, that could be considered theft.

“Are you copying the generic, publicly known aspects of something and then bolting on some other concepts? In that case, you’re probably less likely to get in trouble,” he says. “But if you’re taking a trade secret—and you’re really using the core of that trade secret to then bolt on some other things—modifying it wouldn’t necessarily get you out of trouble.”

Wisk alleges that Archer stole another trade secret—lithium-ion battery cell design studies—to ask its supplier, Electric Power Systems (EPS), to essentially recreate the batteries using highly specific requirements on a production line reserved for Wisk.

EPS told one Archer employee that an unnamed customer had the sole right to use this production line, Wisk says. Nonetheless, that employee still requested that Archer’s cells be produced on that line—allegedly knowing the production line was for Wisk—and included that requirement in the statement of work. Archer received at least some battery cells from that line, according to Wisk.

In manufacturing, the skill, knowledge and experience an employee gains from being trained on a particular machine are theirs to take to the next job, says Katie Prescott, a lawyer with Fish & Richardson, speaking about intellectual property generally. “But the particular parameters and

settings that you use for that machine to achieve a particular strength of a resulting product, that’s something that’s going to tend toward being a trade secret because that’s specific to your employer,” she says.

“You may have been taught that by your employer,” she continues. “You may have worked to develop that through trial and error with your employer. But that is knowledge that is specific to their products and something that is more likely to be considered a trade secret.”

In November, Archer announced that Taiwan-based E-One Moli Energy Corp. (Molicel) would manufacture and supply the battery cells for the Midnight production aircraft. The company’s battery system would be based on cells that are used in commercial home appliances such as power tools that are made via “super-high-volume manufacturing,” Muniz said in October.

In another allegation, Wisk claims that former Archer employees stole a trade secret for “aerodynamic studies regarding lift fan locking and stowing” that was used to design its fan mechanism.

Wisk shows evidence that Archer employees worked on the lock-and-stow mechanism at Wisk, including the torque factor. Soon after joining Archer, one employee instructed Magically, the company’s electric motor supplier, to use the same torque factor that is used at Wisk. The employee said the number was based on a “guess,” according to a court filing.

There is no evidence that Archer

Wisk’s claim that Archer violated its 12-tilt-6 eVTOL configuration was thrown out by a judge.

conducted studies necessary to come up with that torque number on its own, according to the testimony of a Wisk expert. The employee in question also kept documents from Wisk related to torque, the company alleges.

Archer disputes the allegation and says it purchased its technology “off the shelf” from Magically.

Disputes about the facts like these were enough for Judge Orrick to partially deny Archer’s request for summary judgment in May and send the lawsuit to a jury trial.

“There are a host of interesting factual issues that Archer’s detailed development records will help resolve; most of those records are not currently public,” said Victoria Cundiff, a partner at law firm Paul Hastings. “Getting to the bottom of cases like this is very fact-intensive.”

Whatever the outcome of the lawsuit, the issue of intellectual property versus employee know-how is bound to come up again, especially as expertise of specialized workers becomes even more prized.

“When you have folks that are leaving companies and going to other companies, what’s protectable versus what goes with the individual when they move on? That’s a difficult public policy question,” Wilcox says. “The knowledge economy is bringing this issue to bear and putting a finer point on this issue.”