



CULPER RESEARCH

Disclaimer

By downloading from or viewing material on this website you agree to the following Terms of Service. Use of Culper Research's ("Culper") research is at your own risk. In no event should Culper or any affiliated party be liable for any direct or indirect trading losses caused by any information on this site. You further agree to do your own research and due diligence, consult your own financial, legal, and tax advisors before making any investment decision with respect to transacting in any securities covered herein. You should assume that Culper (possibly along with or through our members, partners, affiliates, employees, and/or consultants) along with our clients and/or investors has a position in any securities covered herein. You should assume that following publication of any research, we are likely to immediately transact in these securities (by increasing and/or decreasing positions and/or risk exposure), continue to trade in these securities for an undefined time period thereafter, and be long, short, or neutral at any time hereafter regardless of our initial recommendation, conclusions, or opinions. We trade securities in conjunction with risk tolerances and management practices, and such trading may result in the derisking of some or all of the positions in the securities covered herein, at any time following publication of any report, depending on security-specific, market, portfolio, or other relevant conditions. Culper does not undertake to update or supplement this report to reflect changes in its position. Research may contain estimated fair values of securities, utilizing various valuation methods. Estimated fair values are not price targets, and Culper does not commit to hold securities until such time as the estimated fair values are reached. Culper may change its estimates of fair values at any time hereafter without updating its research or otherwise disclosing updated fair values publicly. We may transact in the covered securities for various reasons, none of which may relate to Culper's estimates of fair value. Research is not investment advice nor a recommendation or solicitation to buy securities. To the best of our ability and belief, all information contained herein is accurate and reliable, and has been obtained from public sources we believe to be accurate and reliable, and who are not insiders or connected persons of the securities covered herein or who may otherwise owe any fiduciary duty or duty of confidentiality to the issuer. However, such information is presented "as is," without warranty of any kind – whether express or implied. Culper makes no representation, express or implied, as to the accuracy, timeliness, or completeness of any such information or with regard to the results to be obtained from its use. Research may contain forward-looking statements, estimates, projections, and opinions with respect to among other things, certain accounting, legal, and regulatory issues the issuer faces and the potential impact of those issues on its future business, financial condition and results of operations, as well as more generally, the issuer's anticipated operating performance, access to capital markets, market conditions, assets and liabilities. Such statements, estimates, projections and opinions may prove to be substantially inaccurate and are inherently subject to significant risks and uncertainties beyond Culper's control. All expressions of opinion are subject to change without notice, and Culper does not undertake to update or supplement this report or any of the information contained herein. You agree that the information on this website is copyrighted, and you therefore agree not to distribute this information (whether the downloaded file, copies / images / reproductions, or the link to these files) in any manner other than by providing the following link — <http://www.culperresearch.com> The failure of Culper to exercise or enforce any right or provision of these Terms of Service shall not constitute a waiver of this right or provision. If any provision of these Terms of Service is found by a court of competent jurisdiction to be invalid, the parties nevertheless agree that the court should endeavor to give effect to the parties' intentions as reflected in the provision and rule that the other provisions of these Terms of Service remain in full force and effect, in particular as to this governing law and jurisdiction provision. You agree that regardless of any statute or law to the contrary, any claim or cause of action arising out of or related to use of this website or the material herein must be filed within one (1) year after such claim or cause of action arose or be forever barred.

Archer Aviation (ACHR): When You Can't Earn Airtime in the Sky, Buy it on Late Night Television



We are short Archer Aviation (“ACHR”, “Archer”, “the Company”) because we believe that over the past 12 months, Archer has systematically misled, deceived, or outright lied to investors about virtually every supposed milestone related to its development and testing of its eVTOL aircraft, Midnight. Archer’s misrepresentations have grown increasingly brazen as it attempts to conceal a far more deep-seated, and – in the Company’s very own words – “potentially catastrophic” problem: Midnight’s sham transition flight and underlying instability. In our view, Archer’s continued promotion of near-term commercialization is not only premature, but reckless.

Don’t just take our word for it – take the word of Archer’s very own flight test staff.

- On February 27, 2025, Archer claimed that its manned Midnight aircraft was “fully assembled” and “finishing up ground tests.” Meanwhile, however, emails we obtained between Archer’s own flight test team and the City of Salinas Fire Department (“SFD”) reveal that Archer’s flight test team did not even have the aircraft in their possession until early March. Internal emails further reveal that by April 28, Archer still had not begun high-speed ground testing, with one Archer test pilot stating only that they anticipated they would begin “within the next several weeks.” Again, Archer told investors these tests were “finishing up” two months earlier.
- On April 10, 2025, SFD visited Archer’s hangar and posted photos of the event the following day. These **photos, however, showed Midnight in a state of disrepair – exposed internals, open panels, and wooden blocks taped to the fuselage.** Salinas FD has since deleted the photos; we include them herein.
- Archer claimed just last week on its Q1 2025 conference call that the Company was “on track to start piloted flights with our latest Midnight aircraft over the next week” and that “we expect the first piloted flight to take place within days.” Yet we’ve had investigators camped across both of Archer’s Salinas and Watsonville hangars the entire time. Our investigators saw Archer conduct just a single round of low-speed ground runs in the entirety of the past 8 days. **The aircraft was nowhere close to flying.**
- Archer CEO Adam Goldstein claimed that he was “invited” to appear on Jimmy Fallon’s Tonight Show following Archer’s Olympics sponsorship announcement. Our sources suggest, however, Archer paid

millions for the airtime, in addition to Fallon's recent appearance at an Archer promotional event in NYC. We reached out to Fallon's agent who told us that we, too, could have Jimmy show up at our party (to say nothing of his appearance in a promotional video) for about \$600,000, plus transportation.

- CEO Goldstein further claimed that the Company's sponsorship of the 2028 Olympics implies the FAA is "confident Archer is the right partner." This is asinine – akin to suggesting that the FDA is confident in a pharmaceutical company's drugs being safe and effective after purchasing stadium naming rights. **Industry sources suggest, rather – like Archer's Fallon promotion – that Archer paid a whopping \$25 to \$30 million for the Olympics rights.** It seems to us that Archer CEO Goldstein isn't as interested in building a safe aircraft as much as he is in building his own celebrity status, long before Archer has demonstrated that Midnight is a viable form of transportation.
- We believe that Archer's recent promotions conceal far deep-seated problems. In June 2024, Archer claimed that Midnight completed a full "transition" flight whereby, per the FAA, the aircraft's aft rotors are powered down and their two propellers faired in line such that the aircraft sustains lift under its own airfoil (i.e., wing-borne flight). CEO Goldstein heralded the event as a "milestone."
- In May 2024, the FAA published Midnight's final airworthiness criteria, which explicitly required aft rotors to be shut down and their two propellers faired in line during wing-borne flight. Yet in Archer's "transition" flight footage, **Archer not only kept the aft propellers spinning, but added two extra blades that Midnight had never previously shown – the aircraft never transitioned per FAA rules.**
- In response to an inquiry from AVweb, Archer admitted that Midnight's aft rotors were active at low RPMs, but insisted that lift was entirely from the wings, comparing the rotors to un-retracted landing gear. This analogy is absurd: landing gear detracts stability and adds drag, while Archer's sleight-of-hand did the opposite. **Archer's decision to add additional propellers, then keep them powered on throughout flight wasn't some innocuous oversight – it was an integral part of keeping Midnight in the air.**
- We believe Archer effectively staged a fake milestone to unlock an additional tranche of funding from Stellantis. Less than one month later, Archer announced it received an additional \$55 million. Archer claimed in the following months that it was completing transition flights on a regular basis. **Yet to this day, Archer has never provided a single video of Midnight flying with its aft rotor propellers faired as per FAA regulations.**
- Following the claimed transition flight milestone, Archer insisted that Midnight's design was "mature" and needed "no modifications." Archer also claimed it was building six conforming aircraft throughout 2024. It then quietly backed off of this discussion, and now only has produced just a single aircraft containing only some conforming parts.
- Indeed, on June 21, 2024 – just days after the claimed transition – Archer quietly filed a patent amendment to address, according to the very language in the patent itself, that "the inventors here have recognized several problems that may be associated with flight control..." including **"significant vibrations in certain speed ranges" that trigger a negative feedback loop, leading to "a bending failure or other type of damage to the aircraft" which has "potentially catastrophic" consequences.**
- One former Archer executive told us that, "A lot of the delays are due to design changes. Some of their design flaws or design changes... on the fuselage, and on the wing structure, on the propellers." Experts tell us these are huge changes – altering the aerodynamics, weight, and distribution of the aircraft. Per another expert, "You change the propeller design, you change the vibration. It's a huge change." According to a third expert, **"That explains why they [Archer] haven't done the second and third [aircraft] – there's not a lot of point of building another that won't comply."**

- Photos in the Company's very own Q1 2025 earnings results reveal an entirely different aircraft, with visible changes to the fuselage, landing gear, wings and boom arms, tilt rotors and propellers, and aft rotors and propellers. Archer's claims that it was just adjusting flight instrumentation and the landing gear to equip Midnight for conventional take-off are a farce – it's an overhaul.
- Archer has yet to prove that it's solved Midnight's apparent stability issues, or even that it has landed on a final design. As recently as April 2025, an interview with FOX Business suggested that Midnight does not use any gearboxes – an apparent departure from the Company's longstanding reliance on gearboxes.
- Archer CEO Goldstein claimed on the Q1 2025 call just days ago that 2025 was an "inflection point" and that Archer is "on track" for UAE deliveries "this summer" according to CTO Muniz. The aircraft is meant to be produced in Georgia, yet it hasn't even been fully built yet, let alone tested.
- In November 2024, Archer announced a deal to sell up to 100 aircraft to a joint venture from Japan Airlines. Archer said it would conduct a flight demonstration at Japan's 2025 World Expo, which runs through October 2025. Yet Japanese media now reports that Archer pulled out of the demo. Archer, of course, never relayed this information to investors. Archer CCO Nikhil Goel cited "timing issues" alongside U.S. flight testing, even as CEO Goldstein had assured investors that Archer could conduct testing and demo flights "simultaneously." Yet weeks earlier, Archer staged an NYC event to show off Midnight. Japan just expected an actual flight.
- Archer touts its being in the "final phase" of FAA certification, but CVD progress has all but stalled, advancing from just 12% to 15% over the past two quarters. According to one expert, **Archer is "pretty much at the beginning of the process."** A former Archer executive told us they found it "very concerning... what's the new timeline? To me, it's not even clear what they're thinking right now." Tellingly, **Archer's 10-K filed in February 2025 warned for the first time that the Company may never receive FAA certification "at all."**

Archer Aviation: when you can't earn airtime in the sky, buy it on late-night TV.

In conjunction with this report, we're extending a friendly wager to Jimmy Fallon.

Jimmy – we propose you set aside a portion of the money that you've made promoting Archer – both on your show, and via your appearance at the Company's recent NYC event – and match us.

\$1 million each, held in escrow. You, a pilot, and three additional passengers complete an FAA-compliant commercial flight – vertical take-off and landing in an Archer Midnight, flown from Orange County (SNA) to Santa Monica (SMO), on or before July 30, 2028 (Olympics end date), and you win the full \$2 million.

No flight, and we win the \$2 million, which we will pledge to donate across four reputable NYC and LA-based charities.

If you truly believe in what you're being paid to promote to the general public, prove it.

Introduction to Archer Aviation – Taking Shortcuts from the Start

Archer was founded in October 2018 by Brett Adcock, who left in 2022, and current CEO Adam Goldstein. The Company began building its first prototype, a 2-seater eVTOL known as the Maker, in March 2020. In February 2021, prior to having even unveiled Maker (June 2021) Archer announced its plans to go public via SPAC, which closed in September 2021.¹

In its SPAC materials, Archer consistently [referenced](#) its plans to create an eVTOL capable of traveling “*up to 60 miles at 150 mph using technology available today...*” Not only that, but Archer would support the aircraft with a broad network of infrastructure capable of “*giv[ing] customers a quick, economic and low-emission way to get to airports within major hubs by 2024.*”

In November 2022, Archer [unveiled](#) its “production” aircraft, the Midnight, trumpeting the unveil as “*more than just an electric aircraft. We’re building a completely new sustainable transportation ecosystem.*” The Company further claimed of Midnight that “*It flies 150 mph, and it can carry 1,000 pounds of payload... It can travel up to 100 miles at 150 mph.*” Archer promoted the launch as marking “*the new golden age of electric flight.*”²

Archer has since pushed back its U.S. launch plans from 2024, to 2025, and now in 2025 instead says that it will launch internationally prior to the U.S. The Company’s Form 10-K filed in February 2025 disclosed for the very first time that while “*we are still working with the FAA...to obtain type certification... we may be unable to do so on our projected timeline or at all*” (new language emphasis ours).

Goldstein, who lacks any engineering background, proudly describes his founding strategy as doing the bare minimum to pass regulatory muster. Goldstein touts Archer’s [outsourcing](#) 80% of Midnight’s components, and, as he explained in a January 2025 [interview](#),

“...you had to be willing to not necessarily build the most advanced piece of technology out there because the regulators don’t necessarily understand it... I went in with the mentality of ‘how do we find the most efficient path to market.’”

In practice, we believe this philosophy has backfired massively, and Archer has made increasingly egregious misrepresentations to cover for its fundamental failures.

We Believe Archer’s June 2024 Transition Flight was a Stunt; Archer Added Propellor Blades, Then Kept them Powered, Violating FAA Rules Sham Flight Unlocked Funding, But Revealed Midnight’s Underlying Stability Issues. To This Day, Archer Has Never Shown Transition

In June 2024, Archer [claimed](#) that Midnight completed its first transition flight, which the Company called “*a very difficult milestone.*” As Archer Chief Engineer Geoff Bower noted, “*The transition maneuver is one of the most challenging flight controls problems.*” Archer claimed to have solved it. We don’t think they did. Contrary to Archer’s reassurances, Midnight simply never transitioned according to FAA requirements. The flight wasn’t a milestone – it was a hoax.

¹ Per Goldstein in January 2025 [interview](#).

² “We’re targeting certification by the end of 2024 and then to begin operations shortly after in 2025. We just announced our first point-to-point eVTOL route between New York City and Newark Liberty International Airport, and the plan is to announce many more in the near future. So this is a really pivotal moment in aviation there’s this new golden age of electric flight...”

We think Archer designed the flight as a stunt in order to unlock an additional tranche of funding under its agreement with Stellantis. We further believe that following the transition, Archer quietly began to redesign Midnight, all while publicly claiming that it was building six “fully conforming” aircraft and that Midnight needed “no modifications.”

In May 2024, the FAA published Midnight’s [final airworthiness criteria](#), which [Archer heralded](#) as providing “the solidified path for Archer to achieve Type Certification for Midnight.” Included in the criteria are various stipulations related to the aircraft’s ability to transition – that is, to move from the vertical take-off phase of flight to forward flight, wherein the entirety of the aircraft’s lift is supported by its airfoil – i.e., like an airplane, rather than like a helicopter. See that these rules note (a) aft rotors hold just two propellers, while (b) transition to wing-borne flight is marked by these propellers being shut down and faired in line. Per the FAA (emphasis ours):

“It must be possible to make a smooth transition from one flight condition to another (changes in configuration and in source of lift and phase of flight) without exceeding the approved flight envelope.”

*“The other six electric engines drive **two-bladed fixed-pitch propellers** and are mounted on the aft edge of the main wing, three to each side; they are fixed in place to provide only vertical thrust. The aft-mounted engines operate only during thrust-borne or semi-thrust-borne flight; **in wing-borne forward flight, these engines are switched off and the propellers are faired in line with the aircraft fuselage.**”*

Archer’s own flight footage from its claimed transition, however, reveals not only that Midnight’s aft propellers were never shut down and faired, but that Archer even **added additional propeller blades** to its aft rotors, all of which remained spinning to various degrees throughout the entirety of Archer’s claimed “transition.”



Source: [Archer YouTube](#)

This is plainly not a full transition as per the FAA’s definition. In response only to industry [reporters at AVweb](#), Archer admitted that it kept the aft propellers spinning, but insisted “all of the lift was generated by the wing...”

“For the first full transition flight, we chose to keep the aft propellers spinning at very low speeds (200-300 RPM) rather than initiating the 'stow routine' to stop them. Envelope expansion is a step-by-step process. In future flights we will exercise this functionality. You can think of this as being analogous to

how, for conventional aircraft, the landing gear may not be retracted on a first flight. All of the lift was generated by the wing at the speeds we were flying (100+ mph)."

To this day, Archer has never made this same admission to public markets investors, and the Company's excuses for its non-compliance are lame.

- First, we see no reason why Archer would *add additional blades* to its aft rotors, if those blades weren't serving some critical function – either in lift or stabilization. **Tellingly, both directly before and directly after this supposed June 2024 "transition," Archer portrayed Midnight as flying only with two propeller blades on each aft rotor.**



Sources: [March 2024 Footage](#), [December 2024 Promo Video](#)

- Second, the FAA guidelines are not “if you feel like it” suggestions. The FAA requires the aft propellers to be shut down and faired after transition to wing-borne flight. They either were or they weren't, and here, they weren't. Archer's post-hoc weaseling typifies its prioritization of stock promotion over passenger safety and compliance, and in our view likely does more harm than good with the FAA.

Archer's landing gear analogy is equally ridiculous – landing gear is not a stabilizing or lifting force.

- Even if we take Archer at its word that all lift was generated by the wings, propellers provide not only vertical lift but a stabilizing force to the aircraft. In the words of a regulatory expert we spoke with from one Archer competitor, transition is extremely difficult in part because it represents “*the max vibration risk profile and the most complex part of the flight envelope.*”
- Moreover, even at low RPMs, the aft propellers provide *some* amount, i.e., non-zero lift, even if they weren't principally responsible for providing all of the necessary lift. Thus if the aircraft flew level, then this necessarily implies that Archer was also adjusting its flight path *downward* to account for the excess lift. This suggestion seems nonsensical to us.

Archer could also increase lift by flying “nose-up,” but this introduces additional instability, increases risk of stalling, and exposes the flight to greater drag and thus inefficiencies. We suspect that this dynamic might, however, explain Archer's decision to add more blades and kept them running – to introduce stability to the aircraft. Archer's cleverly worded insistence that “*all of the lift was generated by the wing...*” says nothing as to

Midnight's stability – *"We promise, the aft rotors didn't provide lift, they only prevented the aircraft from stalling mid-air and spiraling out of control!"*

Archer's decision to add additional propeller blades, then keep them powered on throughout flight wasn't some innocuous oversight – it was an integral part of keeping Midnight in the air, one way or another.

Archer's motivations were transparent – its agreement with Stellantis allowed the Company to call an additional \$55 million investment upon demonstrating a completed transition flight. On July 2, 2024 – just 3 weeks after the hoax transition, Archer [proudly announced](#) that it had received that additional investment from Stellantis.

Archer's stunt is problematic not only because Archer misrepresented it, but because it reveals fundamental issues in the stability of the aircraft.³

Indeed, on June 21, 2024 – just two weeks after the claimed transition flight – Archer filed an [amendment](#) to its patent for "systems and methods for flight control of eVTOL aircraft" which specifically cited "several problems that may be associated with flight control..." including **"significant vibrations in certain speed ranges" which appears to trigger a negative feedback loop that could lead to "a bending failure or other type of damage to the aircraft" that is "potentially catastrophic," according to Archer's own language.**

³ We also find it worthwhile to note that on Archer's Q3 2022 conference call in November 2022, the Company stated that Maker's transition flight would include *"the tilt propellers locked into their cruise position."* Yet when Archer released its Maker "transition flight" video in November 2022, the blades appeared to remain spinning then, too. Again, Archer never released a full video of that Maker flight, nor did Archer ever provide any evidence from any subsequent Maker flight that demonstrated full transition with the aft propellers faired.

Previous Patent Filing

TECHNICAL FIELD

[0002] This disclosure relates generally to powered aerial vehicles. More particularly, and without limitation, the present disclosure relates to innovations in aircrafts driven by electric propulsion systems. Certain aspects of the present disclosure generally relate to systems and methods for flight control of aircrafts driven by electric propulsion systems and in other types of vehicles, as well as flight control of aircrafts in flight simulators and video games. Other aspects of the present disclosure generally relate to improvements in flight control systems and methods that provide particular advantages in aerial vehicles and may be used in other types of vehicles.

SUMMARY

[0003] Aspects of this present disclosure relate to flight control of electric aircrafts and other vehicles. In one embodiment, an aircraft is disclosed comprising: a fuselage; one or more flight control computers configured to provide control signals; a first set of electrically powered propellers and a second set of electrically powered propellers disposed on one side of the fuselage, wherein the first set is disposed forward of the second set; a third set of electrically powered propellers and a fourth set of electrically powered propellers disposed on another side of the fuselage, wherein the third set is disposed forward of the fourth set; and a plurality of electrical buses coupled to the one or more flight control computers; wherein the one or more flight control computers are configured to provide control signals via one electrical bus of the plurality of electrical buses to at least one of the first set of propellers and at least one of the fourth set of propellers; and wherein the one or more flight control computers are configured to provide control signals via another electrical bus of the plurality of electrical buses to at least one of the third set of propellers and at least one of the second set of propellers.

BRIEF DESCRIPTION OF FIGURES

[0004] Fig. 1 shows an exemplary VTOL aircraft, consistent with disclosed embodiments.

[0005] Fig. 2 shows an exemplary VTOL aircraft, consistent with disclosed embodiments.

[0006] Fig. 3 shows an exemplary top plan view of a VTOL aircraft, consistent with disclosed embodiments.

[0007] Fig. 4 illustrates exemplary propeller rotation of a VTOL aircraft, consistent with disclosed embodiments.

[0008] Fig. 5 shows exemplary power connections in a VTOL aircraft, consistent with disclosed embodiments.

[0009] Fig. 6 shows an exemplary architecture of an electric propulsion unit, consistent with disclosed embodiments.

[0010] Fig. 7 shows an exemplary top plan view of a VTOL aircraft, consistent with disclosed embodiments.

[0011] Figs. 8A-D shows an exemplary flight control signaling architecture, consistent with disclosed embodiments. [0012] Figs. 9A-13D illustrate and describe exemplary flight control signaling architectures and components thereof, consistent with disclosed embodiments.

Amendment filed June 21, 2024

TECHNICAL FIELD

[0002] This disclosure relates generally to powered aerial vehicles. More particularly, and without limitation, the present disclosure relates to innovations in aircrafts driven by electric propulsion systems. Certain aspects of the present disclosure generally relate to systems and methods for flight control of aircrafts driven by electric propulsion systems and in other types of vehicles, as well as flight control of aircrafts in flight simulators and video games. Other aspects of the present disclosure generally relate to improvements in flight control systems and methods that provide particular advantages in aerial vehicles and may be used in other types of vehicles.

BACKGROUND

[0003] The inventors here have recognized several problems that may be associated with flight control of aircraft, including a tilt-rotor aircraft that uses electric or hybrid-electric propulsion systems (hereinafter referred to as electric propulsion units or "EPU's"). For example, aircraft propellers risk creating significant vibration in the aircraft when multiple propellers spin at the same speed (e.g., RPM). Further, each aircraft propeller may experience significant vibrations in certain speed ranges. These speed ranges where significant vibrations occur may vary based on the aircraft's airspeed and tilt angle of the propeller.

[0004] These vibrations may conduct through an engine and aircraft structure, to inertial measurement units (IMU) contained in onboard sensing equipment. Accordingly, the significant vibrations may corrupt the aircraft's state estimate based on IMU measurements, which may feed through the flight control system, resulting in high-frequency commands to flight elements (e.g., actuators, control surfaces, and engines). The high frequency commands may result in increased power consumption, increased temperatures, increased cycles and wear, and may contribute to increased cabin and community noise, as well as decreased ride quality.

[0005] Further, these vibrations may lead the electric engines to work inefficiently, may affect the controllability and stability of the aircraft, may increase the load on the aircraft structure, and may cause structural fatigue of different aircraft components. For example, propeller vibrations may impact an ability of the propeller to respond to flight control commands (e.g., a propeller torque and/or tilt angle), may cause a propeller angle to exceed a desired range of operation, and/or may strain or fracture aircraft components, such as a connection point between the propeller and the aircraft. A bending failure or other type of damage to the aircraft (potentially catastrophic damage) may result. The vibrations may also cause movement of the cabin and acoustic noise, decreasing ride quality for the aircraft's passengers.

[0006] This problem may be particularly significant in aircrafts with multiple propellers (e.g., a multi-rotor aircraft), a common configuration in many electric aircraft. The vibration of multiple propellers may magnify the impacts, especially when the propeller speeds of multiple propellers are the same. It may also be particularly difficult to detect which propeller(s) are causing vibrations and to control the aircraft to lessen the vibrations.

To this day, Archer has never shown an actual video of Midnight completing transition with its aft rotors faired, despite numerous suggestions that Midnight was completing transition flights on a regular basis throughout 2024. For example, in late July 2024, Archer CCO Nikhil Goel [claimed](#),

"Good progress by the Archer team rapidly progressing through the flight envelope. These tests get a little faster, longer, higher, etc. each time so the team keeping up the pace is super impressive. Every one brings us a little closer to our first piloted flight later this year."

And in September 2024, Archer CTO Muniz [claimed](#) the Company would continue testing Midnight through “many transition cycles” throughout the rest of the year.

“Flight testing is about gathering all kinds of data. So it’s everything from just transition flying, so taking Midnight through many transition cycles, learning about how the aircraft handles. A lot of other flying around... So what’s coming up for the rest of the year is a lot more flying on Midnight...”

Instead of offering direct, tangible evidence, we believe that Archer initiated a behind-the-scenes scramble to re-design a new version of Midnight, hoping that that version might turn into a viable aircraft, all while misrepresenting its actual progress to investors – misrepresentations that continued even through last week.

Sham Transition Flight Triggers Design Overhaul, While Archer Claimed “No Modifications” and Six “Fully Conforming” Aircraft Being Built

Archer claimed in early 2024 that it had begun constructing at least three “conforming Midnight aircraft” that would be used for FAA for-credit testing. We think Archer quietly scrapped these plans and begun re-designing a new version of Midnight after its failed transition flight, despite claiming that “no modifications” were needed.

- In February 2024, Archer CEO Goldstein claimed that *“our manufacturing team has begun simultaneous construction on our first three piloted conforming Midnight aircraft.”*
- At a JP Morgan conference in March 2024, Archer Chief Commercial Officer Nikhil Goel confirmed that, *“we currently have 3 conforming aircraft in construction in parallel. It's really important for a few reasons. One is it signals the confidence we have in our design such that the key parts and subsystems within this aircraft will conform to the FAA type design that they've defined.”*
- In May 2024, CEO Goldstein claimed that *“the first of those is in final assembly now and on track to begin piloted flights later this year.”*
- Yet on the subsequent quarterly call in August 2024, Archer’s tone shifted meaningfully. Goldstein didn’t offer any status update on the supposed aircraft that was “in final assembly” three months earlier, nor on the other two. Instead, he stated only more vaguely that, *“we have started to build our fleet of 6 aircraft with systems that conform to these requirements so that we can continue for credit testing with the FAA.”*

This was a glaring backtrack, not only for its lack of specificity but for its admission that its aircraft are not fully-conforming, but only contain “systems” that conform – i.e., partially conforming. **We believe the change was triggered by Archer’s internal acknowledgement that Midnight could not transition, and design changes were needed.** Nevertheless, CEO Goldstein and CTO Muniz insisted on the very same call that Midnight’s design needed “no modifications” and was “mature.”

“So to your first question, there's no modifications that need to be made. We're essentially in the process of integrating and bringing up the aircraft we will use, for those first piloted flights.”

“The area I think that's most important in these aircraft programs is being really mature in your design. And that's been the key. And so what we have felt comfortable with and what we've talked about building these 6 conforming aircraft, is that we feel very comfortable in the design and maturity of that design.”

Goldstein reiterated this narrative on the Company’s Q3 2024 call in November 2024, stating, that Archer had *“stabilized the final design”* and that *“our piloted Midnight aircraft is nearing readiness for flight.”*

Former Archer employees and experts we spoke with suggested otherwise. **One former Archer executive confirmed to us that within the past year (as of our April 2025 conversation), Archer had still been scrambling to fix various “design flaws” spanning numerous components of the aircraft.**

“A lot of the delays are due to design changes. Some of their design flaws or design changes, I know that they were making a change on the fuselage, and on the wing structure, on the propellers... in the past year or so...”

When we asked about the importance of propellers to the overall design, one expert told us,

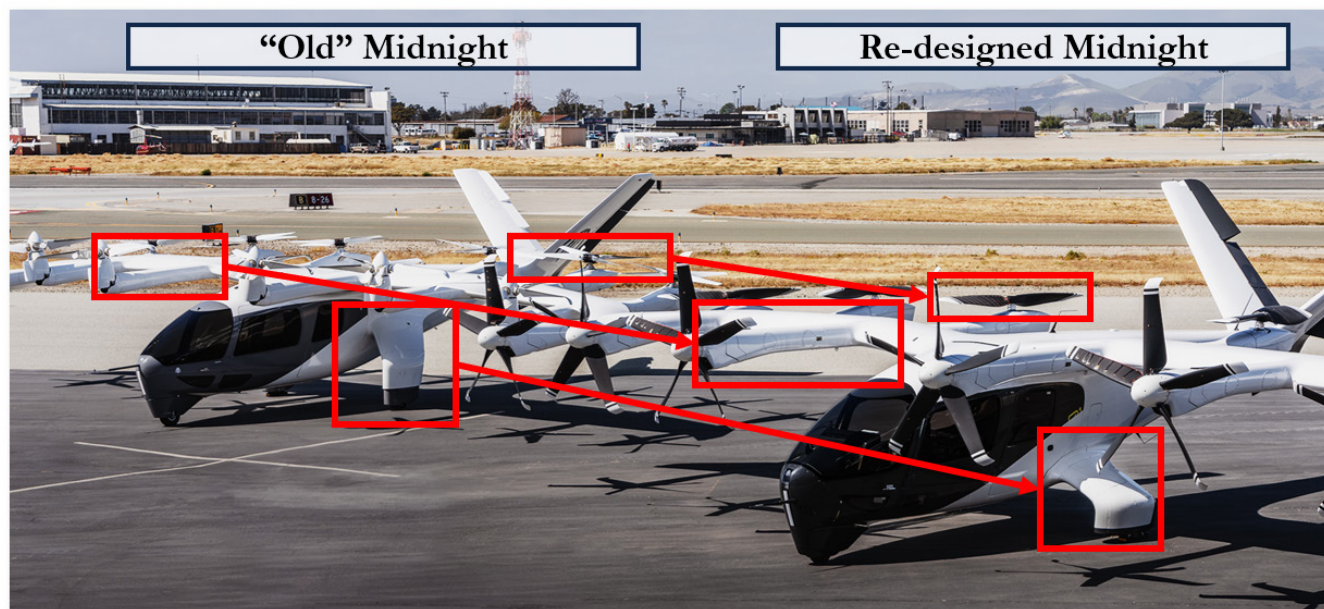
“That’s the piece that they need to figure out. You change the propeller design, you change the vibration. It’s a huge change.”

Another suggested,

“That explains why they [Archer] haven’t done the second and third [aircraft] – there’s not a lot of point of building another that won’t comply.”

Archer Has Produced Just a Single, Partially Conforming Aircraft; Recent Photo Reveals Massive Design Overhaul

In Q1 2025, Archer revealed a photo of its manned version of Midnight. The Company’s entire narrative, however, collapses upon a simple examination of this photo. While Archer repeatedly claimed Midnight required “no modifications” and was one of six “fully conforming” aircraft, the latest aircraft appears significantly redesigned. Archer explained away the primary difference in the two versions as its flight instrumentation and preparing for conventional takeoff, but it’s painfully obvious that the aircraft went through an extensive overhaul.⁴



⁴ According to Goldstein on last week’s call: “one of the main differences between this aircraft and the previous one is how heavily we’ve instrumented it with flight test instrumentation hardware and software... it was a lot trickier than we thought... but the good news is we’re through this now, and we’ve got a lot of confidence that we’ll be in the air very shortly.”

Source: [Archer Q1 2025 Results](#)

See, as we zoom into below, that the aircraft has significant changes across its fuselage and landing gear, wings and boom arms, tilt rotors and propellers, and aft rotors and propellers.

OLD Fuselage and Landing Gear



NEW Fuselage and Landing Gear



OLD Wings and Boom Arms



NEW Wings and Boom Arms



OLD Tilt Rotors and Propellers**NEW Tilt Rotors and Propellers****OLD Aft Rotors and Propellers****NEW Aft Rotors and Propellers**

Archer – Now With An Entirely New Aircraft, Is Misrepresenting Its Testing Progress, Because It's Wildly Behind Schedule.

Archer, having quietly overhauled Midnight, is now only beginning to test what is effectively a new aircraft. Even recently, however, the Company has continued to mislead investors regarding the state of this aircraft and its testing schedule. We believe testing will take far longer than Archer claims, and Midnight's near-term commercialization plans are doomed.

On February 27, 2025, Archer CTO Muniz claimed that Archer's new manned version of Midnight was (a) fully assembled, (b) finishing up ground tests, and (c) preparing for flight. **We don't believe that a single one of these claims were true at the time Muniz made them.**

"... the Midnight aircraft is now fully assembled, and we've positioned it down at our flight test facility in Salinas... So now we're going through the process of finishing up ground tests to prepare for flight. At this point, I don't know of any specific issues or blockers that prevent us from flying. We just have to finish the remaining tests, get ready to fly."

We submitted public records requests to the City of Salinas Fire Department (“SFD”), which revealed **emails from Archer’s own personnel that state the flight test team would not even have the aircraft “in their hands” until early March.** It seems to us that it’d be incredibly difficult for Archer to have been “finishing up ground tests” as of late February if the test team didn’t even have the aircraft until March.

From: Marie Lo <mlo@archer.com>

Date: Tuesday, February 18, 2025 at 2:46 PM

To: Shane VanderVeen <shanev@ci.salinas.ca.us>, David Furey <davidf@ci.salinas.ca.us>

Cc: Matthew Nelson <matthewne@ci.salinas.ca.us>, Earl Paisant <earlp@ci.salinas.ca.us>, Andrew Bauer <abauer@archer.com>, Michael Gerzanics <mgerzanics@archer.com>, Rachel Garza <rgarza@archer.com>

Subject: Re: Fire/EMS - Archer First Flight

CAUTION: This message originated outside of the City of Salinas email system. Do not click on links or open attachments unless you are sure the content is safe.

Hello Shane and Dave,

I hope 2025 is treating you well so far!

Apologies for taking so long to follow up with you all regarding the first responder familiarization with the Archer Midnight airplane. We have had a staffing change in our Safety department at Archer, as well as a delay in our first flight scheduling. **Our date for having the aircraft in the Flight Test Team's hands is now the beginning of March.** Do you have availability for us on your calendar for early March?

Thank you!

Warmest regards,

Marie T. Lo

Flight Test Admin

M: +1.609 [REDACTED]

www.archer.com

Source: Public Records Requests, City of Salinas

On April 10, 2025, SFD toured Archer’s hangar, inspecting the aircraft such that the FD could remain informed while on standby during future Archer tests. SFD posted photos from their visit, which appeared to show the new Midnight in a state of either partial assembly or disassembly. The photos were later deleted.

April 2025: Archer's "Fully Assembled" Aircraft



Source: City of Salinas Fire Department Facebook (now deleted)

Emails from Archer's test flight team also revealed that even as of April 28, 2025, Archer had not yet begun high-speed ground runs. The team anticipated only beginning these tests "within the next several weeks." Archer claimed a full two months earlier that it was "finishing" ground testing.

From: Michael Gerzanics <mgerzanics@archer.com>

Sent: Monday, April 28, 2025 11:39 AM

To: Shane Vanderveen <shanev@ci.salinas.ca.us>; David Furey <davidf@ci.salinas.ca.us>

Cc: Garrison Hoe <ghoe@archer.com>; Marie Lo <mlo@archer.com>; Jeff Greenwood <jeff.greengwood@archer.com>; Rachel Garza <rgarza@archer.com>; Matthew Nelson <matthewne@ci.salinas.ca.us>

Subject: ARFF Support

CAUTION: This message originated outside of the City of Salinas email system. Do not click on links or open attachments unless you are sure the content is safe.

Shane and David,

Thanks for meeting up at the beginning of the month for familiarization training with our Midnight aircraft. We really appreciate you devoting time to help keep our operations safe.

Within the next several weeks we will begin conducting operations that we think prudent to have ARFF resources prepositioned at the airport. These events would include our first high speed ground runs on the runway (8/26) and of course our first piloted flight(s).

I don't have specific dates yet; but typical operations will be during the morning, when winds are low. This would not be an everyday request, rather just several events.

Do we think the SFD can support this?

How and with whom should we start coordination?

Thanks in Advance,

Mike Gerzanics
Archer Test Pilot
(650) [REDACTED]

On the Company's Q1 2025 conference call just last week, on May 12, 2025, CTO Muniz stated that Archer was "on track to start piloted flights with our latest Midnight aircraft over the next week" and that "we expect the first piloted flight to take place within days."

Yet we've had investigators camped outside each of Archer's two test sites at the Salinas and Watsonville airports. Our investigators saw Archer conduct just a single low speed ground run over the course of the entire 8-day period from May 12, 2025 to May 19, 2025. The aircraft never left the ground.



Source: Culper Investigators, Salinas Airport

We believe it will be several weeks, if not many months before Archer attempts piloted vertical takeoff in this newly redesigned, manned version of Midnight. Even then, it stands to reason that this aircraft will require extensive testing as the Company is forced to gather new data about the aerodynamics of this aircraft, given, again, the numerous undisclosed changes. As Archer outsources 80% of Midnight's components, any design changes along the way would magnify delays.

To that end, we note that an April 2025 FOX Business [interview](#) of Adam Goldstein claims that Archer's aircraft does not use any gearboxes – another substantial departure from the Company's historical claims that it was relying on a "patented gearbox."⁵

Archer's aircraft, he said, is designed to eliminate many of the risks that are associated with traditional helicopters due to its all-electric propulsion system that features fewer moving parts, no combustion engine and no gearbox.

Source: [FOX Business](#)

OPTIMIZED FOR ELECTRIC FLIGHT

Patented gearbox enables efficient energy transfer in a small, aerodynamic package

Source: [Archer December 2024 Investor Presentation](#)

⁵ By contrast, in 2017, Joby [designed](#) its own purpose-built direct drive gearbox, which is not only more efficient than Archer's, but is meant to be safer and more reliable due to the lack of moving parts.

Archer, nevertheless, continues to claim that it will ship an aircraft to Dubai this summer. But if the UAE hopes to launch an eVTOL network, we think they should start making other plans.

Archer Touts 2025 “Inflection Point” Yet Just Bailed on Japan and Quietly Admitted It May Never Get FAA Approval. The Façade is Crumbling.

CEO Goldstein stated on the Company’s Q1 2025 call just last Monday that, “2025 is an inflection point for the Company and for the industry” and that the Company “remain[s] on track to deliver our first piloted aircraft as part of that program to Abu Dhabi Aviation in the UAE later this year.” In light of all of the above, we think Archer has virtually zero hope of delivering a commercially viable aircraft to the UAE later this year, and Goldstein’s promises of inflection will once again fall flat.⁶

In November 2024, CTO Muniz claimed that “the aircraft that we are starting to produce in Georgia in the coming months are the aircraft that we will be deploying to the UAE.” Yet Archer has never unveiled these additional aircraft, let alone tested them, and Archer is already backing off its commitments elsewhere.

In November 2024, Archer also [announced](#) an “intended purchase” agreement with a joint venture of Japan Airlines and Sumitomo. As part of the agreement, Archer claimed that “plans to conduct a public flight demonstration at the World Expo to build public support, demonstrate the future of aviation and accelerate stakeholder’s engagement...” The expo [runs](#) from April through October 2025.

On the Company’s November 2024 conference call, Goldstein suggested that Archer could do both testing aircraft in California and delivering others to partners.

*“...our engineering and operations teams are concentrating on advancing us to flight testing for credit with both Archer and FAA pilots flying Midnight at our Salinas, California facility. **Simultaneously**, we plan to conduct public in-market piloted demonstration flights and market survey trips with our partners, introducing Midnight to the cities we plan to serve.”*

In April 2025, however, Japanese media outlets [reported](#) that Archer had already bailed on its planned demonstration flight. Archer Chief Commercial Officer Nikhil Goel [cited](#) “timing” issues, even as Goldstein had just promised investors that Archer could do both.

*“We are currently working on a manned test flight program to pass the necessary milestones for certification and commercialization of the aircraft. Therefore, Archer has decided that it is necessary to focus on flight testing in the United States at this time. **Unfortunately, the timing does not match up with the demonstration flight at the Osaka-Kansai Expo,** but we would like to plan and realize a demonstration flight in 2026 as an effort to support the commercialization of flying cars in Japan...”*

So which is it? Has Archer (a) implicitly acknowledged that it lacks the production ability to support both testing and demonstrations as Goldstein claimed just 6 months ago? (b) Said “no” to a major promotional opportunity to focus on flight testing? Unlikely, in our view, given Goldstein’s non-stop media appearances, or (c) implicitly admitted that the aircraft is not actually capable of performing a mere demonstration flight?

⁶ Goldstein has made various forms of the same “inflection” claim since 2022. “We are now at an inflection point in the company where we are advancing our commercialization efforts.” (Q2 2022). “I feel especially thankful for the strategy we chose, especially at this inflection point in our journey.” (Q4 2023). “We’re now poised for an inflection.” (Q4 2024).

Archer frequently highlights its entry in to the “final phase” of FAA certification, in which Archer and the FAA agree to the set of compliance documents. But to be clear, Archer remains far from for-credit testing – Archer and the FAA are agreeing to the terms of what will be proven; Archer is not providing the proof itself. On that front, Archer’s progress remains anemic – over the past two quarters, Archer’s approved compliance verification documents moved from 12% to just 15% of the total. One executive who had experience at three different eVTOL companies explained to us,

*“Where Archer sits is that they are pretty much at the beginning of the process... They’ve done a good job disguising it. They say that they’ve begun the final stage. The truth is that per that metric, **they probably have about 90% of the work remaining at this point.** Now they have to start the really grueling work.”*

And as another former Archer executive explained to us,

“What’s very concerning to me when I read Archer’s reports is that I don’t see any progress on the aircraft. I see a lot of partnerships, but none of that is about getting these aircraft into service... When you look at migration of the quarterly letters, there was a lot more emphasis on delivery on the technical milestones. Not anymore. Investors should be asking, okay what’s the new timeline? [for FAA certification] To me, it’s not even clear what they’re thinking right now.”

Tellingly, Archer itself disclosed for the very first time in its Form 10-K filed in February 2025 that the Company **may not receive FAA certification “at all.”**

10-K Filed February 2024

We were incorporated in October 2018 and have a limited operating history in designing, developing, and working to certify an eVTOL aircraft. Our eVTOL aircraft is in the development stage and ~~we do not expect our first production aircraft to be certified by the FAA until late 2025 or later. We are still working with the FAA in an attempt to obtain Type Certification of our eVTOL aircraft. As a result, we have no experience as an organization in volume manufacturing of aircraft.~~

10-K Filed February 2025

We were incorporated in October 2018 and have a limited operating history in designing, developing, and working to certify an eVTOL aircraft. Our eVTOL aircraft is in the development stage and we **are still working with the FAA in the U.S. and equivalent government authorities in certain other countries in an attempt to obtain type certification of our eVTOL aircraft. While we have received our Part 135 Air Carrier Certificate in the U.S. from the FAA and anticipate being able to obtain the remaining required authorizations and certifications, **we may be unable to do so on our projected timeline or at all.**** As an organization, we have no experience in volume manufacturing of aircraft.

Conclusion

Archer’s story has been guided not by engineering excellence, but by tech bro promotional theatre. Goldstein brags that Archer was purpose built from day 1 to take the “quickest possible” route to market. That has meant not just outsourcing 80% of Midnight’s systems, but buying applause, touting failed milestones, lying about progress, and hiding critical design flaws. What Goldstein sold as an easy path to market has backfired, and Archer has doubled down on ever more egregious misrepresentations in order to keep its story in the air. We are short and think shares are headed far lower.