

Unusual Machines Inc.

NYSE - UMAC

Initiation Report – February 19, 2025

The Sky's the Limit – Initiating Coverage of U.S. Drone Company Unusual Machines with a Buy Rating and \$20 Price Target

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- We initiate coverage of Unusual Machines with a Buy rating and a \$20 12-month price target.
- Its current primary business is its Rotor Riot consumer business targeting the FPV hobbyist/racing market with about 5% share of this roughly \$100 million market.
- Its main growth strategy is making components for itself and other drone makers, which could be as much as a \$3 billion market. Using conservative assumptions, we believe the company can get to \$150 million in components revenue, while we model \$40 million for 2026.
- Drones are used in a wide and growing variety of applications from commerce, to public safety to warfare, and we don't see this trend reversing.
- Led by DJI, Chinese manufacturers have captured nearly all of the U.S. drone and drone components market, but bipartisan efforts are underway to ban these imports, setting up an enormous market opportunity for UMAC and its peers.
- The company has a rock solid balance sheet which we estimate will have no debt and about \$7 million cash after a surge in the share price upon the announcement of Donald Trump, Jr. as an advisor allowed the company to eliminate debt and convert its warrants. The December balance sheet should show dramatic improvement with the full effects in the March balance sheet.
- Drone comps trade at about 3.5x 2026 revenue while UMAC shares trade at about a 20% premium. Our \$20 target assumes the market will accord the shares twice the valuation of comps as its components strategy should allow for faster growth.
- The risks are in the execution, which so far is going faster than expected. It has announced components, but now must sell them and it must successfully integrate acquisitions.

Rating	Buy	Earnings Per Share	Normalized to exclude unusual items		
Target Price	\$20.00	FYE - December	2024E	2025E	2026E
Ticker Symbol	UMAC	1Q - March	(\$0.11) A	(\$0.15)	(\$0.19)
Market	NASDAQ	2Q - June	(\$0.16) A	(\$0.13)	(\$0.07)
Stock Price	\$10.96	3Q - September	\$0.01 A	(\$0.13)	\$0.02
52 wk High	\$23.62	4Q - December	(\$0.12)	(\$0.07)	\$0.14
52 wk Low	\$0.98	Year	(\$0.58)	(\$0.47)	(\$0.10)
Shares Outstanding:	13.9 M	Revenue (\$mm)	5.7	17.8	47.5
Public Market Float:	11.1 M	EV/Rev	33.3X	10.6X	4.0X
Avg. Daily Volume	5,001,292	EBITDA (\$mm)	(3.7)	(3.2)	3.0
Market Capitalization:	\$165.7 M	EV/EBITDA (pro forma)			63.7X
Institutional Holdings:	4.2%				
Dividend Yield:	0.0%				

Risks/Valuation

- The key risk factor is in execution. The company's strategy is to introduce drone components like motors and circuit boards and supply other drone manufacturers so it must successfully introduce and sell these components.
- It has already announced one acquisition, and we expect many more but the risk in acquisitions is in the integration.
- We value UMAC shares at 7x our 2026 revenue estimate of \$48 million or about twice that of comps. We note that with the recent rise in the share price the company is in the process of eliminating most debt and warrants, so we use a pro forma balance sheet in our valuation.

Company description: Unusual Machines presently is a retail drone and parts business operating under the Rotor Riot brand serving the \$100 million enthusiast market. Its target growth market is the multi-billion components market and it is already taking steps to introduce products and announce acquisitions.



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Making Drones Great Again – Initiating Coverage of Unusual Machines with a Buy Rating and \$20 Price Target

We initiate coverage of Orlando-based drone manufacturer Unusual Machines with a Buy rating and a \$20 12-month target price. The company acquired the consumer business of Red Cat Holdings in February 2024 and still operates this as its primary business today. But the growth plan is to leverage the enormous global demand growth for drone parts and become a components supplier with revenue in the hundreds of millions of dollars the same way German manufacturer Bosch is a supplier of high-end components (such as fuel injection systems) to global automakers.

The U.S. drone market is going through a bipartisan change, consistent with the MAGA theme of bringing manufacturing back to America, while becoming more suspect of the risks of Chinese imports. The U.S. drone and drone components industry was thriving ten to fifteen years ago but has been decimated by Chinese competitors, mainly DJI which has about a 90% global share of the consumer market. Today, there are no U.S. drone parts manufacturers. Enter Unusual Machines. They have already introduced three components, which in total comprise about 44% of the cost of an average \$600 mid-sized drone and we think they are well positioned to serve what should be a multi-billion market. Using conservative assumptions and just a 10% market share, its components business would do about \$150 million in revenue. Our forecast is \$40 million for 2026.

As noted, Unusual Machines acquired the consumer business of Red Cat Holdings in February 2024 for \$13.5 million. This business consisted of Rotor Riot, which Red Cat acquired in January 2020 for \$200k, and Fat Shark, which Red Cat acquired for \$8.4 million in October 2020. Red Cat has moved up scale to the commercial and military segment, and so decided to separate from its consumer business. The two companies remain closely tied as Unusual Machines CEO Allan Evans was the CEO of Fat Shark and became COO of Red Cat while Red Cat's CEO Jeff Thompson is on Unusual Machines board. Rotor Riot started in 2016 as a drone enthusiast YouTube channel, and they later got into selling drones and drone parts, with much of their inventory then, and now, coming from China out of necessity. Fat Shark also sources its products out of China.

The enthusiast market is known as FPV for first-person video since the drones contain cameras and the operators fly the drones with goggles that display what the camera on the drone sees. The drones can operate at very high speeds and are capable of acrobatic maneuvers. FPV drones have been adopted for military use, primarily by Ukraine, as they can attach weapons to the drones and fly them into enemy targets.

Drones Have Numerous Uses and the Global Market Could be Worth \$260 Billion by 2030

The drone market is huge and wide-ranging. Estimates of the market size are all around \$30 billion, according to ChatGPT, SkyQuest Technology, and Statista. The lowest-priced drone kit we found at Amazon was just \$40 including a controller. This market is dominated by DJI and can range up to hundreds of dollars including a controller. These entry-level consumer drones differ dramatically from the hobbyist drones Rotor Riot sells in that they come with a controller and software that makes flying easier and prevents the typical radical stunt maneuvers Rotor Riot customers buy their drones for. These consumer drones come paired with their controller and if either is lost or damaged, the consumer has to buy an entirely new set. But they are easy to fly and a great, inexpensive way for consumers first exposure to drones.

Drones range from small toys available at retailers such as Walmart and Amazon.com for under \$50 to the military's General Atomics MQ-9 Reaper which sells for \$32 million. Mid-sized commercial and military drones sell for around \$30,000. Estimates of industry size are in the \$30 billion area for 2023 depending on the source and their definition of the industry. Every source estimates rapid growth with estimates for the size of the industry in 2030 ranging from \$55 billion at Statista to \$260 billion at Spherical Insights. Given the wide variation of definitions, we view industry size estimates as meaningless but do agree with the consensus that the industry is due for explosive growth.

We found at least a dozen major uses of drones, listed below, and break the market roughly into toys, hobbyists/racing (Rotor Riot's segment) commercial, government, and military. As the list shows, the uses of drones are numerous and growing.

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1. **Consumer/ retail** – drones available at toy retailers. These drones have built-in safety features that prevent them from flipping over or flying into restricted airspace. The controller and drone are programmed at the factory and cannot be used with other drones or controllers. This category quickly jumps up to drones in the \$500 range but these drones still have the above limits.
2. **Enthusiast/racing/FPV** – this is the market where Unusual Machines Rotor Riot currently plays. These drones are highly customizable and drones and controllers can be mixed and matched. Since these drones don't have the built-in software safety standards of the toys, they are prized by enthusiasts who often use them for racing, but, as we note later, this makes this segment nearly impossible for novices to enter. It is worth roughly \$100 million and is dominated by three key web retailers, including Rotor Riot. The enthusiast or hobbyist market served by Rotor Riot is about \$100 million in annual revenue so the company has about a 5% market share currently. It has one larger rival, private equity owned GetFPV, and numerous smaller competitors.
3. **Industrial** – this segment is served by companies such as Skydio and former UMAC parent Red Cat Holdings. Drones in this segment are larger and can sell for thousands of dollars.
4. **Movie and TV production:** Hollywood production crews extensively use drones for overhead shots that previously were done by expensive helicopter shots.
5. **Agriculture:** Farmers use drones for crop monitoring, mapping fields, and delivering pesticides and fertilizer. Drones can more precisely deliver pesticides and fertilizer, more in problem areas, for example, resulting in higher crop yields.
6. **Logistics & Delivery:** While it's still in the early stages, companies such as Amazon are testing the use of drones to deliver packages. While this would not make sense in dense urban markets, it could prove highly efficient for delivering packages to rural addresses especially compared with the current method of sending deliveries in a large truck. Workhorse offers a combined electric delivery truck and drone package so a driver can drive to a neighborhood and use a drone to deliver packages locally.
7. **Infrastructure Inspection:** Utilities and pipeline operators use drones to inspect their assets replacing manual ground-based techniques or expensive helicopter flights. A key issue for oil pipeline operators is potential leaks which can incur tens of millions of dollars in damages per incident. So, the low cost of drone surveillance makes sense.
8. **Energy & Mining:** Energy companies use drones for monitoring drilling sites or solar and wind farms while mining companies use drones for mapping and surveys.
9. **Real Estate:** Drone footage is used extensively in the real estate industry given the ease and low cost of capturing an overhead shot of properties. Drone footage now is almost universal in residential listings.
10. **Law enforcement:** Even small local police departments are adopting drone technology for uses such as suspect apprehension, search and rescue, evidence collection, and accident reconstruction. Recently, the small town of Bluefield, Virginia added drones to its fleet, and in California, the FAA granted a waiver allowing law enforcement drones to be flown up to 400 feet.
11. **Construction:** Drones are extensively used to survey buildings and lots to assess conditions and make estimates.
12. **Defense:** The use of military drones goes back to 1917 when "flying bombs" were used in combat. The Israeli military pioneered the use of surveillance drones in the 1970s searching for Syrian surface-to-air missiles. The U.S. military has long used drones for surveillance and in now attaches weapons to some drones. Military drones range in size from large drones the size of small airplanes down to small drones that can fit in a Marine's backpack providing quick, on-the-spot surveillance capability. Drones are also fitted with offensive armament such as missiles. The Ukraine war has led to a revolution in military drone usage both for surveillance and weapons. While the Ukraine military first used drones, the Russian side quickly adopted

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them as well. The Ukrainian military uses FPV or first-person video drones where the remote pilot sees what the drone sees. This is a direct extension of the hobbyist drone market and Unusual Machines is targeting the market for its component business. Once the Ukraine war winds down, we expect militaries around the world to study the drone tactics used and extensively adopt drones for their own use. It is said that the military always prepares to fight the last war, and we expect this to be the case with the massive adoption of small, FPV drone technology. This trend fits perfectly into UMAC's strategy.

There is Bipartisan Support Behind Unusual Machines Strategy

With existing and proposed laws, the sizable drone import market, dominated by China's DJI with an estimated \$4 billion in global revenue, will largely disappear. Restrictions are already in place for military and government usage but another proposal would ban Chinese drone components as well, creating an enormous new market.

National Defense Authorization Act for Fiscal Year 2020 – This law is often referred to by its acronym NDAA and the term NDAA-compliant is often used in the industry. It was overwhelmingly passed by bipartisan majorities in both houses and signed into law by President Trump in December 2019. Section 848 of this law prohibited the Defense Department from buying drones, drone components, or drone software from Chinese companies. In 2022, the law was expanded to include Russia, Iran, and North Korea.

American Security Drone Act – signed into law in 2024 with the FY2024 National Defense Authorization Act (NDAA). Bipartisan sponsorship by Senators Rick Scott (R-FL) and Mark Warner (D-VA). It was signed into law by President Biden in December 2023.

- Prohibits federal departments and agencies from procuring certain foreign commercial off-the-shelf drones or covered unmanned aircraft systems manufactured or assembled in countries identified as national security threats, and provides a timeline to end current use of these drones.
- Prohibits the use of federal funds awarded through certain contracts, grants, or cooperative agreements to state or local governments from being used to purchase foreign commercial off-the-shelf drones or covered unmanned aircraft systems manufactured or assembled in a country identified as a national security threat.

Countering CCP Drones and Supporting Drones for Law Enforcement Act - proposed by Rep. Elise Stefanik (R-NY) in December 2022 and passed by the House in September 2024, but was excluded from the final NDDAA passed by the Congress and signed into law by President Biden. This act specifically named Chinese manufacturers DJI and Autel and would have banned the import of their products. Instead of an immediate ban, the NDAA calls for a one-year study period. Drones are extensively used by a number of industries, particularly the movie and television industry, and public safety entities and today, there are few U.S. alternatives, so lobbying likely led to the reprieve. Congresswoman Stefanik has been nominated by President Trump to be the United States U.N. ambassador.

The \$30 Billion Global Drone Market Spans from Low-End Toys to High-End Military Drones

Toy

Holy Stone Mini Drone

\$40



FPV/Racing

Unusual Machines Shorty 5" Pro-Spec Drone · \$764



Commercial

Autel Titan

\$43,000



Military

Red Cat Edge 130 Blue

\$43,000



High-End Military

General Atomics MQ-9 Reaper

\$32,000,000



Source: Company reports

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Commerce Department Advance Notice of Proposed Rulemaking (ANPRM) – On January 2nd, the Commerce Department issued an ANPRM seeking comment on how it could formulate a rule to protect the U.S. drone supply chain, again targeting the Chinese. Notably, the ANPRM came under the outgoing Biden administration, demonstrating the bi-partisan support of this issue. We have read numerous ANPRMs over the years on a multitude of issues and they are essentially open-ended question lists by the U.S. government seeking input from informed parties before they sit down and craft a rule. The direction of the ANPRM suggests some type of new rule prohibiting Chinese drone parts and we note the drone parts market is exactly what UMAC is targeting. It will likely take a year or longer for a final rulemaking but if this occurs, it should provide a significant catalyst for UMAC shares.

Mid-Sized Drone Components Cost About \$600 Per Drone and UMAC Now Covers Nearly Half of the Market

A small hobbyist or commercial drone typically consists of seven major components with a total value of around \$600. Unusual Machines has announced its own version of three of these parts and has announced a senior hire with manufacturing expertise to build its own motor manufacturing capability. The three announced components account for about 44% of the cost of a drone, and with motors, Unusual Machines would cover about 65% of the market. All drones, whether hobbyist, commercial, or military, use these parts, so Unusual Machines is entering into a huge market. It has an advantage in owning the Rotor Riot retail channel as it plans to use its own components in its drones. This gives the components business a ready customer, so it can get to scale more quickly and should boost its retail margins through vertical integration. Rotor Riot also brings tremendous knowledge serving the racing market, which requires the highest-performance components, so it has insights into what is required.

In August 2024 the company announced the introduction of its Brave 7 flight controller. The flight controller is the integrated circuit board brain of the drone that stores the operating system. It was immediately listed on the Pentagon's Blue List of approved drone parts for military applications. The part lists for \$58 on the Rotor Riot website but we assume that volume purchases will be in the \$40 to \$50 range. Simultaneously with the introduction, the company announced a contract for the sale of 6,700 units. We understand that this was to a British customer with the Ukraine military as the end user. This order alone would be worth around \$300k, and we expect some of that to be recognized in the fourth quarter and the rest in early 2025. This part was designed and manufactured by Ewing Aerospace of Ashland, Ohio. We expect Rotor Riot to adopt this part into their FPV drones, but adoption has been delayed as the company meets initial volume orders. It is also available for sale on the Rotor Riot website. Management has said they have seen multiple orders for ten or twelve units, which is apparently other drone manufacturers buying the product for evaluation. Having this consumer website makes supplying small batches for evaluation easy – potential customers just go on the website and place an order.

On January 17th, the company announced its Brave 55A ESC. An ESC is an electric speed controller. It plugs into the flight controller and communicates commands to the motors. Notably, ESCs are typically priced around \$125 or more than twice the amount of the controller board, so this introduction significantly moved Unusual Machines up in the value chain. Like the controller, it too landed immediately on the DIU Blue List. It lists for \$105 on the Rotor Riot website but is not yet available for sale.

On January 28th, the company announced the introduction of the Fat Shark Aura FPV Camera. It is not yet on the Blue List but since it uses Sony CMOS components, and Sony cameras are already on the list, we expect this to occur rapidly. In conjunction with the product introduction, the company announced an order for 1,000 units by a U.S.-based drone manufacturer. This part is listed on the Rotor Riot website at \$58 but is not yet available for sale. We note that this part is analog and that digital cameras require more complexity, so that would require additional capabilities.

There are two separate radio transmitters/receivers on most drones, although some companies have combined the two. Today, most are analog, but digital technology, with some security features, will be needed for military use and even non-military uses to prevent the interception of signals. This would be represent a significant step up in complexity. One of the transmitters on the drone, the radio transmitter/receiver (RX) is used to talk to the remote-control unit used to fly the drone. The other is the video transmitter/receiver (VTX) which sends the video signals to the goggles separately. DJI has combined the two and we suspect that's the direction of the industry. The RX generally costs around \$40 whereas the VTX costs around \$75.

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Components in a Small Drone Cost Around \$600, and UMAC Now Covers 44% of the Market

	Price Range		Avg.	Per drone	Per drone	
Bold indicates announced UMAC component						
1 Flight controller	\$40	- \$60	\$50	1	\$50	9%
2 Electronic speed controller (ESC)	\$100	- \$150	\$125	1	\$125	21%
3 Motors	\$25	- \$35	\$30	4	\$120	21%
4 Camera	\$60	- \$100	\$80	1	\$80	14%
5 Radio receiver/transmitter (RX)	\$30	- \$50	\$40	1	\$40	7%
6 Video transmitter (VTX)	\$50	- \$100	\$75	1	\$75	13%
7 Frame	\$70	- \$120	\$95	1	\$95	16%
Total	\$375	- \$615		10	\$585	100%

Rotor Riot Brave F7 Flight Controller - \$58



Blue List Certified

Rotor Riot Brave 55A 4in1 32Bit ESC - \$105



Blue List Certified

Fat Shark FPV Aura Camera - \$58



Blue List Pending

Drone Motors



Drone Frame



Source: Litchfield Hills Research

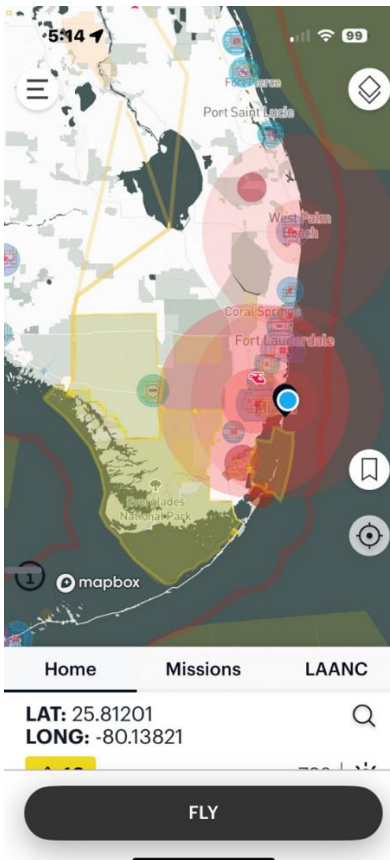
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The other key component of a drone is the frame, which must be strong and lightweight. For small whoop drones the frame is typically plastic, but larger drones use carbon fiber. Frames cost around \$100 per drone. We believe that frames represent the lowest risk from Chinese suppliers, other than an interruption in supply, since there are no electronics or software to hack into.

On February 3rd, Unusual Machines announced plans to acquire Aloft Technologies for \$14.5 million in stock or about 1.3 million shares at the current price. Aloft is a drone software and database provider. Users can obtain FAA approvals for Low Altitude Authorization and Notification Capability (LAANC) flights in controlled airspace (e.g., near airports) through the app and it has provided more than 1.6 million authorizations to date with a 70% market share. Its main software product is called Air Boss and is designed to manage airspace collaboration and reporting. In the release, the company stated that consistently using this database would have prevented the recent New Jersey situation where multiple unknown drones were spotted. Even before the acquisition, people in the industry had called out their software and apps to us. We downloaded the Air Control app, pictured below. It provides information on airspace restrictions and shows where it is legal to fly a drone. In our case, in the Miami area, most of the southern portion of the state was listed in red, even though there was frequent drone flight activity in the area. The software allows one to file for an exemption. The product seems ideal for commercial users who wish to strictly adhere to restrictions. In practice, we found that numerous drone pilots ignore restrictions, presumably because they are unrealistically strict, and the FAA rarely enforces them. In addition to allowing the user to file for LAANC permission, it provides a preflight safety checklist and a flight log. It also provides detailed weather information.

Unusual Machines has not provided financial information on Aloft or specific closing date information so at this time, we are not estimating their revenue and earnings or attempting to incorporate them into our model.

Aloft's App Makes Complying with Drone Laws Simpler



Source: Litchfield Hills Research

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The Defense Department's Blue List For Approved Drones and Drone Components

In order to sell drones or drone components for the U.S. military, they must be certified by the Defense Innovation Unit (DIU). As they explain on their website, the technology is changing faster than traditional Defense Department programs of record can keep up, so this is a way to rapidly vet drones and components. The concern is that China has come to dominate the drone industry and it could use this domination to hamper U.S. military access to drone technology or even use it to monitor U.S. military drone usage. So, we see the priority in electronic components, which is where Unusual Machines is focusing, and less importance for components like frames. The Blue List is changing rapidly, but below is the recent list. We note that there are 35 companies on the list, and seven are public. Some are large corporations like Nvidia, Panasonic, Sony, and Samsung but most are smaller private companies. As such, this gives Unusual Machines a handy shopping list to go about consolidating the drone components market.

Defense Innovation Unit Drone Components Blue List



**DEFENSE
INNOVATION UNIT**



Component	Manufacturer		Part	
Camera	NextVision Systems	Israel	public NXSN Raptor 360 Pointer DragonEye2 Colibri2 Raptor Nighthawk2-UZ	
		USA	private RTL-450	
	Immervision	Canada	private	IMVISIO-ML
		LightWare Optoelectronics		LW20/C SF20/C
	Workswell	Czech Republic	private	WIRIS Enterprise
		USA	private	6X Multispectral
	Phoenix LiDAR Systems	USA	private	miniRANGER-3 LITE
	MicaSense	USA	private	Altum-PT
	Phase One	Denmark	private	iXM-100
	Sony	Japan	public-SONY	Alpha 7R IVA ILX-LR1
	Teledyne FLIR	USA	public-TDY	Duo R Hadron 640R
				Workswell
	Companion Computer	NVIDIA	USA	public NVDA Jetson Xavier NX Jetson Orin NX
				NextVision Systems
Data Transmission Device	Unusual Machines	USA	public UMAC Brave 55A ESC	
		USA	private 81-08 G2 Module	
		USA	government AUDIBLE Kit	
		USA	private Somewear Node	
		USA	private VOXL/VOXL 2 Microhard Modem VOXL Power Module V3	

Source: Defense Innovation Unit



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Defense Innovation Unit Drone Components Blue List - Continued

Category	Unusual Machines	USA	public UMAC	Brave F7	
Flight Controller	CubePilot	Australia	private	Cube Orange Cube Orange+ Cube Blue Cube Blue H7	
	ModalAI	USA	private	VOXL VOXL 2 Mini VOXL 2 VOXL Flight Core	
Ground Control Station	Freefly Systems	USA	private	Pilot Pro (RFD900) Pilot Pro (Doodle Labs)	
	Samsung	Korea	public-005930	Galaxy Tab Active5	
	Vantage Robotics	USA	private	Vision2	
	UXV Technologies	Denmark	private	Aeronav SRoC	
Gimbal	AeroVironment	USA	public AVAV	Grip S20	
	Panasonic	Japan	public-6752	TOUGHBOOK 55	
	JETI Model	Czech Republic	private	DS-12	
Radio	Trillium Engineering	USA	private	HD40-LV HD40-XV HD45-LV-CZ	
	Phase One	Denmark	private	P3 MAVLink	
	Gremsey	Vietnam	private	T3V3	
	Freefly Systems	USA	private	Workswell WIRIS Pro Smart Dovetail Payload Sony A7RIV Smart Dovetail Payload Sony LR1 Smart Dovetail Payload	
Global Navigation Satellite Systems	Locus Lock	USA	private	LEO100 GNSS-SDR	
	ARK Electronics	USA	private	ARK RTK GPS	
	Septentrio	Belgium	private	mosaic-X5	
	CubePilot	Australia	private	Here 3 Here 4	
Radio	Persistent Systems	USA	private	Embedded Module MPU5	
	Vantage Robotics	USA	private	SRM-S-MH+ (VR) SRM-S-MH (VR)	
	UXV Technologies	Denmark	private	SRM-S-MH+ SRM-S-MH SRM-S-DL SRM-S-DL+ SRM-S-SC4200 SRM-S-SC4200+ SRM-L-SC4200 SRM-L-PS5	
	Doodle Labs	USA	private	mini-OEM Helix Mesh Rider mini-OEM Dual-Band Mesh Rider Embedded Mesh Rider	
	RFDdesign	Germany	private	RFD900x RFD900x-US	
	Silvus Technologies	USA	private	StreamCaster LITE 4200 StreamCaster 4200	
	Microhard	Italy	private	pDDL1800 pDDL2450 pMDDL2450 pMDDL1624	
	Software	Defense Innovation Unit	USA	government	QGC-Gov
		Somewear Labs	USA	private	Somewear App
		AeroVironment	USA	public AVAV	Kinesis
Reveal Technology, Inc		USA	private	Farsight	
US Army		USA	government	ATAK DIU Blue UAS Tool Plugin	

Source: Defense Innovation Unit

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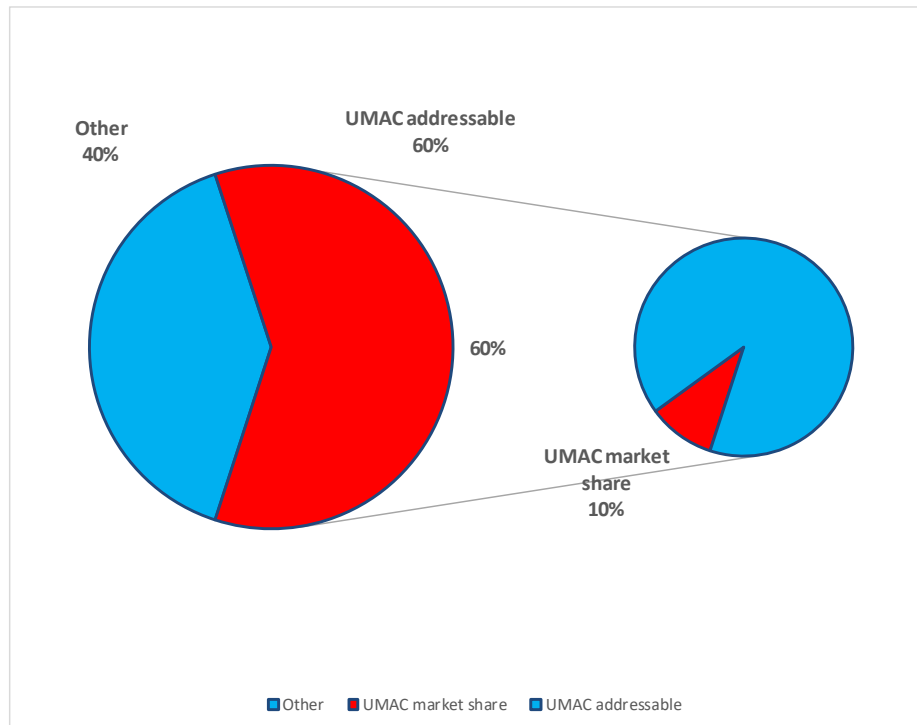
UMAC Should be Able to Generate At Least \$150 Million in Components Revenue

We had a detailed conversation with CEO Allan Evans about the company's strategy and market potential. We researched what he said and came up with a target revenue stream just from components of \$150 million. The way we get there is we assume that there is a market for 5,000 units annually. We think this is conservative as Ukraine goes through about 4,000 units annually for its military and we expect militaries around the world to adopt the learnings of that war and build their own drone forces. Also, as we discussed previously there are numerous applications for drones, and the number of use cases is growing rapidly.

If the bill of materials for a drone is \$500, at 5 million units annually that's a \$2.5 billion market. Note that we previously broke out the cost of components for a drone in this report and came out with \$585, so our \$500 number may be conservative. If we assume that Unusual Machines can supply 60% of these components, that's a \$1.5 billion addressable market. Note that it has already announced parts comprising 44% of the cost of a drone, and with motors, would be at 65%. If we plug \$585 in components and 65% of the market is addressable, that brings the addressable market up to \$1.9 billion.

If Unusual Machines can get to a 10% market share of the addressable market, that's \$150 million in annual revenue. We forecast \$40 million for 2026, which looks aggressive on its own, but we think is reasonable given the strong, bipartisan push for domestic drone components, the rapid growth in the drone industry, and Unusual Machines' unique position as an independent supplier of components. We believe that a 30% market share is possible in the long run, and would be disappointed if they did not achieve at least 5%.

Target market: mid-sized drone components			
	<u>Total</u>	<u>UMAC Addressable</u>	<u>Conservative Share</u>
Units	5,000,000	5,000,000	10%
Materials	500	300	
	\$2,500,000,000	\$1,500,000,000	\$150,000,000



Source: Litchfield Hills Research

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Who's Who in the Drone Market

Chinese Based Drone Manufacturers

- **Shenzhen Da-Jiang Innovations Sciences and Technologies Company Limited (DJI)** is the big gorilla in the global drone market and took over almost the entire U.S. market before recent laws began to change this. An MIT report estimated that it controls over 90% of the consumer drone market. Its drones are also widely used in commercial and even public safety applications. It has supplied drones and components to both sides in the Ukraine war but recently has taken steps to bar these sales. DJI has built a vertically integrated supply chain for drone components and drones in Shenzhen, China. Even its competitors acknowledge that it produces high-quality, innovative drones at low cost. There are concerns about the vulnerability of using Chinese-made drones. Some researchers have found security weaknesses in DJI products, but we could not find any reports where it was actually found to have transmitted data to China.
- **Chengdu Jouav Automation Tech Co. (JOUAV)** is a Sichuan, China-based drone manufacturer with about \$40 million in annual revenue. It is publicly traded on the Shanghai Stock Exchange with a market cap of about \$500 million.
- **Autel Robotics** is a privately-held Shenzhen, China drone manufacturer with about \$33 million in revenue. It has been accused in the U.S. of being a Chinese military supplier but has issued a statement denying this.
- **Guangzhou Jifei Electronics Technology Co., Ltd. (XAG)** is a Guangzhou, China-based agricultural drone manufacturer.

U.S. Based Drone Manufacturers

- **General Atomics** is perhaps the largest manufacturer of drones in the U.S. with its Reaper, Sky Guardian, Sea Guardian Avenger, and Gray Eagle product lines addressing the defense market. It is privately held and based in San Diego, California with about \$3 billion in annual revenue.
- **AeroVironment** is publicly traded with a \$4.5 billion market and about \$700 million in revenue. It is based in Arlington, Virginia, and primarily serves the defense market with medium and small drones, unmanned ground vehicles, and loitering munitions.
- **Skydio** is a San Diego-based artificial intelligence-based drone company serving the consumer, enterprise, and government markets. According to Factset, it generates about \$110 million in annual revenue with 900 employees and was valued at \$2.2 billion in its last funding round in 2023. With the increasing restrictions on Chinese drones, it has benefitted from sales to the public safety market in the U.S., but according to press accounts, its drones are not yet as capable as the DJI drones they often replace. As a result, some U.S. public safety organizations have voiced opposition to the bans on Chinese drones being put in place too quickly.
- **Red Cat** is based in Puerto Rico with an \$850 million market cap and \$18 million in revenue in its fiscal year ending April 2024. It is closely associated with Unusual Machines as UMAC acquired its retail business and Red Cat's CEO sits on UMAC's board. We also consider it to be a strong potential customer. Red Cat serves the government, military, and commercial markets through its Teal Drones and Flightwave Aerospace subsidiaries. Its focus is on military reconnaissance drones, which apparently show great potential as Wall Street estimates are for revenue of \$57 million this year, growing to \$115 million in FY 2026.

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UMAC's Rotor Riot Competes in the \$100 Million FPV Enthusiast Segment

The FPV Market is Dominated by Four Companies

FPV Drone Retailers **Revenue Range**
\$ millions - estimated

GetFPV Sarasota, FL \$30 - \$40
www.getfpv.com



Rotor Riot Orlando, FL \$5 - \$6
www.rotorriot.com



Pyrodrone Los Angeles, CA \$3 - \$4
www.pyrodrone.com



TurtleModeFPV Schofield, WI
www.turtlemodefpv.com



Total Market **\$100 million**

Source: Litchfield Hills Research

Lumenier Holdco LLC is based in Sarasota, Florida, and owns both its own Chinese-based drone parts business and the largest enthusiast website, GetFPV.com, competing with Rotor Riot. Lumenier was founded by former Sony Music executive Tim Nilson in 2012 and sold a majority stake to Chicago-based private equity fund Pflugstein Partners in 2017. At some point, a combination between Rotor Riot and GetFPV might make sense as the liquidity of UMAC shares offers a convenient exit currency for the fund. For Unusual Machines, owning another FPV retailer would give it another opportunity to vertically integrate with its components business, boosting the margins of the acquired business. The only other sizable company in FPV retail is Pyrodrone which is in Chatsworth, California.

Drone Nerds of Miami, Florida calls itself the largest drone retailer in the U.S., but unlike the above, it does not focus solely on the enthusiast market. From its website, it appears to be a major DJI retailer, so it may need to make changes in its supplier base.

Unusual Machines Inc. NYSE - UMAC

Learning to FPV – It Ain’t Easy

To really conduct our research, we invested in a Rotor Riot Pro Starter kit. The kit is an excellent value with over \$800 in components including a Vision40 3" whoop drone. A whoop is a tiny indoor drone, which is perfect for learning to fly. The company sold the kits for \$499 during the holidays, but the price is now up to \$717, which is still a good value. When we mentioned our difficulties learning to use the kit to Stacy Wright, Rotor Riots president, she emphasized the word Pro in the name of the kit. We note that it is now called Fat Shark HD Vision40 Starter Kit. As we document below, and confirmed with several experts, one cannot just buy a Pro Starter kit and learn to fly. We would suggest buying a cheap, Chinese drone kit from Amazon, and learning to fly with that first before jumping into what are essentially racing drones. Learning to fly drones with PFV drones is akin to trying to learn how to drive with an Indy Car.

- Vision40 drone \$304
- Fat Shark Dominator Goggles \$380
- Radiomaster Pocket Controller \$ 65
- Batteries \$ 29
- 6-Port Battery Charger \$ 33
- Wall charger \$ 12
- Carry case
- Numerous cables

- **Total \$823**

Fat Shark Starter Kit

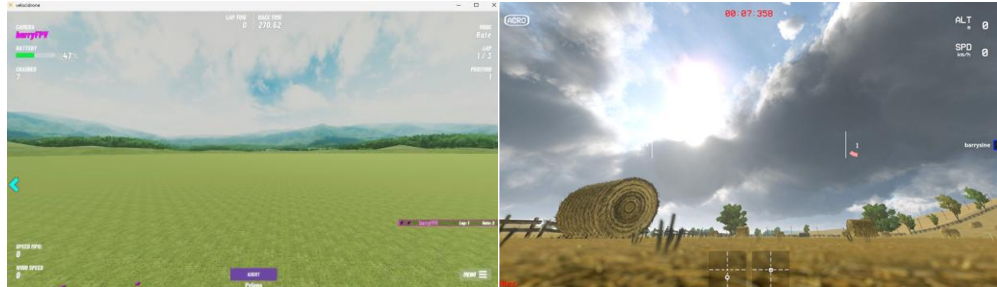


Source: Rotor Riot

A number of experts we spoke to recommended we use a simulator before flying. This is bad advice. We tried two well-known FPV simulators, Liftoff and Velocidrone. The simulators themselves are complex to learn and don't operate like an actual drone in many respects. We note that while Unusual Machines does not make its own simulator software, it does sell the Liftoff simulator. In Liftoff, even at the most basic level, the camera angle points out the back of the drone so you can see where you have been, not where you're heading. It is possible to use the yaw controls to turn the drone around 180 degrees, but then the pitch and roll controls are backward. We have an open request to Liftoff email tech support, but to date, the Liftoff team has been unable to resolve this. While it might be possible to learn to fly this way, why would you the point of using simulator software is not to get good at the software, it's to learn to fly an actual drone.

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Liftoff and Velocidrone Simulator Software



Source: Litchfield Hills Research

Velocidrone is similarly buggy. The roll control was initially inverted, which we learned to correct. This control is not inverted with the actual drone. But with Velocidrone, controls become inverted while using the software and operate with lags, so moving a control such as a throttle does not take effect immediately. The result is that the drone in the simulation is constantly rising to the sky and then bouncing off the ground. Altogether, we found this software simulator extremely crude. Velocidrone is a bit better, but the controls are extremely unstable, with no beginner mode and the controls randomly changing. After a few minutes of use, Velocidrone switched to a mode where the camera only pointed to the sky. Using a Google search, we were able to use the workbench function to reset the camera angle.

Part of the problem is these are not starter simulators. They are highly customizable expert simulators that try to do too much and fail at teaching the basics of flying a drone. One of the issues with these programs is that since they are designed for the hobbyist, they have hundreds of settings that can be adjusted, but many of them completely disable the program and if you cannot remember what you changed, it becomes unusable. We have used Microsoft Flight Simulator on Xbox and that simulator is far easier to use with new users able to jump right in. Such is not the case even with the two most popular FPV simulator software programs. So, if some company in the space wants to expand the hobby, they should invest in a drone module for a stable simulator program like Microsoft's.

FPV is an extremely small hobby, so the software resources devoted to simulators are negligible, with even the leading products proving unusable. Liftoff is produced by a Belgium company called LuGus Studios. Interestingly, former Unusual Machines parent Red Cat announced plans to acquire LuGus in 2021, but the deal was never completed. Velocidrone is produced by a Hong Kong company. Both appear to be more hobbyist than professional software and after hours of trying each, we were unable to get either to work effectively.

So after giving up on the simulator software, we went to fly the drone. This has proved to be another extremely challenging process. Every step of the process requires knowledge of secret codes, knowing how many times to push a button, and navigating software with incomprehensible acronyms like ExpressLRS (LRS stands for long-range system, despite the fact that drones only have a short range to the controller).

When it came time to actually fly our drone, we found that FPV drones are extremely unstable and fly seemingly randomly with controls sometimes becoming inverted. On the controller, the left gimbal is for throttle or left/right. Unlike toy drones, there is no stable mode, the drone is either moving up or down and the user has to constantly move between up and down. This is nearly impossible. On the other joystick, the controls are similarly unstable and reversible, not moving as directed and operating with too much sensitivity, requiring constant overcorrection. It's as if the slightest turn of your car's steering wheel turned the car hard left or hard right and the slightest touch of the accelerator went to full acceleration. It would be possible, after much training to learn to drive by constantly moving the steering wheel left and right and making brief presses on the accelerator but the result would be radically unstable driving. Presumably, this is the "excitement" of the FPV drone hobby.

When we purchased our Pro Starter kit during a visit to the company in early December, there was a stack of the Pro Starter kits missing one part, a black charging brick. We were given a white charging brick instead and left with the kit. Apparently, though, this kit was apparently never tuned with the controller not synced with the drone. We did see an employee testing and tuning drones in the company's two-story shipping bay before packing and shipping, so this appeared to be an oversight.

The controller also has dozens of menu settings, almost all of which are labeled with acronyms like LRS. We stumbled down one dead-end path meticulously following the directions of someone who named his drone Flywoo, on YouTube. In his video, he explains irrelevant things like how to name your drone and set timers, but following his instructions does not actually get the controller and the drone to work together. Based on his video instructions, we changed the

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controller software so badly that the software needed to be completely reloaded to the drone back at Rotor Riot headquarters.

Charging the battery requires another secret. One has to hold the on/off button down for a few seconds, rather than just turning it on. If this is not done, the display still lights up with information, but it will not charge. We learned this the hard way as our drone would only power on for a few seconds even after leaving the batteries on the charger overnight. The requirement to hold the button down is explained in the video and on the charger itself. On the charger, it incorrectly states that the charger will beep once the unit is turned on. The charger has a display for each of the six charging ports. Red flashing dots indicate a battery is charging. Below this is a circle numbered one through six in either green or red, with no explanation of what the colors mean. Using the charger also requires learning how to manually change the voltage (to 4.35 volts) and the amperage (to 0.5 volts) and changing back again to discharge the batteries before storage. This is clearly explained in the video, but there is no documentation on it included with the kit.

Rotor Riot has come out with a helpful video but it repeatedly explains how the kit “should” work but gives no explanation when something does not. Unlike a toy drone, FPV drones need to be “bound” to the controller. This is explained in the Rotor Riot video and other videos on YouTube but it’s a complex process involving going several steps into the ExpressLRS option on the menu and then quickly unplugging and plugging the drone into the battery three times. Drones frequently and seemingly randomly come unbound from the controller. The advantage of this is that advanced hobbyists, who will usually have multiple drones, can use one controller, binding it to a new drone when they want to switch. Toy DJI drones come with the drone and controller permanently bound to each other at the factory. We have become experts at binding a drone to a controller, but as we found, just because a drone is bound to the controller, it does not mean it will work. The drone next needs to be “armed” on the controller by depressing the front left button called the SA-self-locking switch in the controller manual. Even then, sometimes the rotors on the drone will spin, sometimes not.

We had previously been able to get the drone to fly but the controls were quirky and one was reversed. For newcomers flying a drone indoors where you can see it and see any obstacles like the floor or ceiling is much easier than with a simulator as the simulator software only shows a narrow cone of vision out of the camera (FPV). The drone was flyable but extremely unstable. Rotor Riot support suggested we connect the drone to our computer using a micro-USB cable and software called Betaflight. We have lots of micro-USB cables lying around, but it turns out there are two types of micro-USB cables, power only and power/data. Betaflight did not work using our power-only micro-USB cable and Rotor Riot email support did not diagnose that this was the problem, suggesting instead that we may have had an incorrect software driver installed.

When we returned to Rotor Riot in January with our drone kit Cole quickly diagnosed the micro-USB cable issue, saying he made the same mistake when he started out. He also found that our drone had not been tuned, leading to the erratic flying we experienced. As noted, we suspect that this was due to the fact that we were given an incomplete kit with an alternative charger as a favor so we could leave with a kit during our December visit. The company advertises that its kits come pre-tuned, and we witnessed pre-tuning in action, but without pre-tuning our drone was unusable.

Cole was quite sympathetic and very diplomatically said that people new to the hobby almost always have an expert friend to help them resolve issues. Admittedly, all the issues we were able to solve had relatively simple fixes, but many are not well documented or discoverable using internet searches. Our conclusion is that what we attempted, to learn to fly an FPV drone on one’s own, relying on Google, Reddit, YouTube videos, and emails to support lines is unrealistic. We literally spent hundreds of frustrating hours reading Reddit, sending emails, trying two different simulators and sending emails, without limited success. One has to have an expert standing by correcting all the issues and showing the neophyte how to resolve them. Thus, people with friends already in the hobby can learn it, but if not, it’s just not possible. The good news is that nearly everyone in the hobby is extremely helpful, although we did run into a few jerks posting YouTube videos with wrong information, presumably to garner attention. There are no misinformation police in the FPV drone hobby.

With all of the above issues resolved, after much trial and error, we attempted to fly the drone again, but we came back to a prior issue of the controller saying the drone was armed, confirmed by a solid green LED on the drone, but no movement of the rotors when we moved the throttle gimbal on the controller. This issue was the result of one of the 15 buttons and switches on the controller, the SB-Position switch, being in the wrong position. We figured this out through trial and error.

We were now in a position where the controller connected to the drone but the rotors spun for less than a second before shutting down, so we were unable to fly. Up until this point, we had attempted not to pull any strings and resolve the issues through normal sources – either Rotor Riot support or various internet forums. But with our publication date fast approaching, we cheated and reached out to Stacy Wright, the President of Rotor Riot, via email. We immediately

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received a call from Jason, who runs the support function, and he immediately diagnosed the problem. The issue was that if the battery runs too low, the Command Line Interface (CLI) file that controls the drone will not be saved and it will not be controllable. To resolve this issue, we launched the Betaflight software, plugged the drone into our computer, and copied the CLI file Jason emailed us to the drone. This resolved the issue, but we never came across this solution in our web searches. For serious hobbyists, the CLI file is a clever way to program a drone without needing to learn a programming language. It is a 28-page text file that can be edited in any word processing program. But this issue was too complex for a beginning user and it's just not economic for Rotor Riot to give every purchaser of a \$500 kit the same attention we received, nor is it realistic for users to be able to visit the company's offices in Orlando for support as we did.

With that issue resolved, we are now able to fly the drone on an indoor level floor, but the controls are so sensitive that the drone is difficult to control. Jason did send us an easy version of the CLI file, but even with that, the controls are extremely sensitive. With FPV drones, there is no stable, hover mode. You are either going up or down, forward or backward, or right or left, or some combination. So, flying involves constant inputs. We are getting better, but after hundreds of hours, we are not yet at a point where we can predictably fly the drone without crashing. We can fly the drone for about 30 seconds without crashing, but since the battery on our small whoop drone only lasts two minutes, this is pretty good. The beauty of the whoop drone that comes with the Pro Starter kit is that it is small, made of soft plastic and the rotors are shrouded. So, it can endure multiple impacts without damage. Jason told us that larger five-or-seven-inch drones are actually more stable, and if we even learn to fly our whoop, we plan to buy one.

We did try on the included Fat Shark goggles, and they did receive a video feed from the drone, but with the failure of the simulator software and failure to get the drone to fly, we never advanced to the stage where we flew the drone with the goggles in true first-person-view or FPV mode.

We intentionally attempted to perform basic fundamental research and learn to use the company's products in researching this report. Despite limited progress in getting proficient after two months of trying, we still see some positives mainly that the company's growth strategy is in drone components, not selling drones to hobbyists. We have seen FPV drones fly so a very small number of people have been able to make them work, and if these people are willing to spend hundreds of hours mentoring others, new users will enter the hobby. But the growth will not be great and the hobby will never grow much unless some company spends the money on transition products like easy-to-use simulators and better documentation with frequently encountered issues better documented. The other category of customers is people like ourselves who are willing to spend a few hundred dollars on a product they may never fully use, similar to how people buy exercise equipment or join gyms for their New Year's resolutions.

We discussed the issue of expanding the hobbyist Rotor Riot segment of the business down market with both the CEO and COO during our meetings and were a bit surprised at their lack of interest in doing so, before we tried to learn how to use our FPV drone. Now we understand. DJI drones on Amazon.com are easy to fly out of the box, but even solving the issues we encountered to make Rotor Riot's products usable to neophytes would require tremendous resources including designing a true, bug-free entry-level simulator software program that works, replacing all the tricks and shortcuts like having press buttons down two or three times or press and hold them and designing a simple, plain English controller menu. The controllers are still made in China and the documentation is limited and in fractured English (Chinglish). Expanding the hobby would require writing far more detailed user instructions and FAQs and operating a more responsive support line. These steps are expensive and a low-cost alternative already exists in DJI. The 2024 Pro Starter kit was a first effort, and plans are in the works for a more seamless version next year, from what we are told. If somebody is going to make an Amateur Starter kit (instead of Rotor Riot's Pro Starter kit), it won't be Rotor Riot, they see far greater opportunity in the components business.

Unusual Machines Has a Small, Close-Knit Team

The company employs roughly 16 people and we have met with most of them. The majority are hard-core drone enthusiasts who operate the Rotor Riot business. We found them to be universally helpful and receptive to helping newcomers to the hobby learn.

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Most Unusual Machines Employees are Accomplished Drone Pilots



Source: Litchfield Hills Research

Allan Evans, PhD – Chief Executive Officer

Rotor Riot's CEO is Dr. Allan Evans. He earned a PhD in electrical engineering from the University of Michigan and holds 47 patents. He has a long career in technology, including some in Silicon Valley. He is not formally an employee of Unusual Machines but is paid as an independent contractor for tax reasons. He resides and works out of his home in Puerto Rico but is frequently in the Orlando headquarters and traveling around the world on the company's quest for customers, acquisitions and partnerships. In 2017 he became the CEO of Fat Shark which is the largest goggle manufacturer for the FPV drone industry. In 2000, when Red Cat acquired Fat Shark, Evans became the COO of Red Cat. In November 2023 he became the CEO of Unusual Machines, in anticipation of its spinout from Red Cat, which was completed in February 2024.

We have now met him several times, once via a long phone interview and in two separate in-person meetings. As CEO, he takes a strategic view of the business and his focus is on the drone components business. He helped us understand the market, as we discuss in this report. He also has a strong appreciation for investor expectations, understanding that with the stock up and the balance sheet in good shape, the company must perform. It has already announced one acquisition and three new components products, and we expect many more.

Brian Hoff – Chief Financial Officer

Mr. Hoff joined the company in November 2022 and has over a decade of experience in finance with tech companies. Most recently, he was the CFO of publicly traded audio media company Auddia (AUUD). Our interaction with him consisted mostly of walking through the complexities of the company's cap table as it has cleared away debt and warrants with the rise in the share price. In discussing this complex topic, he did not need to refer to any notes, rather he knows the company's finances from memory.

Andrew Camden – Chief Operating Officer

Drew Camden is the company's COO but his scope extends well beyond just operations into strategic planning and M&A. He holds a B.S. degree from Tulane in Engineering Physics and spent four years working for General Motors. He joined Rotor Riot in 2017 when it was more of a YouTube content company and became President in 2018. Rotor Riot was acquired by Red Cat in January 2020, with Camden joining Red Cat and then staying with Unusual Machines as it was acquired.

Mr. Camden is intimately involved in the components business working closely with its flight controller manufacturer Ewing Aerospace in Ashland, Ohio. He spoke to us at length about the components of drones zeroing in on components like motors and radio electronics. Unusual Machines is likely to target high-value components like flight controllers that regulators might be concerned would pose a security risk if sourced from China. He also spoke at length about the design of drone motors, which is a component we expect the company to begin manufacturing.



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Brad Mello – Vice President of Manufacturing

Mr. Mello was just hired and announced on January 14, 2025. He has bachelor's and master's degrees in mechanical engineering and interned at Apple. He spent two years at Tesla's factory in Fremont, California while that company was in the throes of manufacturing startup pain. He then joined a Massachusetts robotics company before starting his own mechanical computer keyboard company, Mode Designs (modedesigns.com) which is still in business. Electrical motors have been around since the 1830s, before even Nikolai Tesla and Thomas Edison, so the technology is nothing new. Drone motors are very small and must be extremely light and durable. Manufacturing them will require expertise in high-speed precision manufacturing, likely to be extremely automated. The housing for the motors in our drone is lightweight plastic, so that would likely be outsourced from an injection molding company. The nice thing about drone motors is that drones require four or more of them per drone making up the highest portion of the cost of a drone, except for the ESC. With his experience at Tesla during the fastest period of production ramp, setting up a drone motor manufacturing facility should be well within his capabilities. As far as we could determine, and confirmed by management, there are no drone motors currently being made in the U.S.

Stacy Wright – President Rotor Riot

In our opinion, Ms. Wright (aka FPVmama) is one of the most impressive employees at Rotor Riot. She brings a track record as a successful entrepreneur in Southern California after rapidly moving up the ranks at one of her first employers – Kinkos. Her LinkedIn page lists three startups she founded or co-founded, which are still operating. She is also a Tiger Mom, mother to one of the most respected, young drone pilots in the industry. As her son got into the hobby as a teen, she followed along to make sure he was not associating with the wrong people. What she learned was about all the benefits of the FPV sport/hobby. Instead of her son staying indoors playing video games as many of his peers do, he was outside learning the basics of physics, aviation, electronics, software, and mechanical skills. And she found that his peers were decent, friendly people willing to share their knowledge and mentor her son (similar to what we found). Her son has moved to Orlando and works for the company, while she commutes from her home in California.

While they are not employees, we think it's important to call out two other people associated with the company. Jeffrey Thompson is the CEO of Red Cat, the former parent company of Unusual Machines, and is on UMAC's board. Red Cat is a major U.S. drone manufacturer with a number of promising contract opportunities including for the U.S. and allied militaries. As such, he should bring tremendous insight into the components requirements of drone manufacturers, and if Unusual Machines follows his guidance, Red Cat should become a major long-term customer.

The other is the President's son, Donald Trump, Jr. who was named to the company's advisory board. While he is quite visible in the media, many don't know that he is an accomplished investor and businessman and very close to his father with his goal to bring back American manufacturing, especially for critical products that are made in China, such as drones. In the press release announcing his appointment, his quote underscored the importance for the country in doing exactly what the company's strategy is: bringing drone and drone component manufacturing back to the U.S. We don't know a lot about what he actually does, but it can't hurt to have him associated with the company. Mr. Trump holds a minimal stake in the company so there should be little to no issue of conflict of interest as the company seeks DoD listing of its products on the Blue List.

One thing the Trump announcement did accomplish indirectly was radically clean up the company's balance sheet. His appointment was announced on Thanksgiving Eve 2024, November 27th. The shares went from closing at \$5.63 the day before the announcement to a high of \$23.62 the following Monday, before falling back to their current price in the \$11 region, so nearly a double in the shares. We think the announcement shed a spotlight on the opportunity in front of the company and its strategy, rather than being solely due to Mr. Trump's appointment. As we noted below, the surge in the share price resulted in nearly all of the sizable number of warrants and convertible shares being converted to common, allowing the company to pay down debt and build a sizable cash balance.



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Revenue Should Increase From \$5.7 Million in 2024 to \$47.5 Million in 2026

On the surface, our revenue forecast appears aggressive and our estimates are more than double the sole other estimate on Factset for 2026. We believe that our estimates have a reasonable basis, but are admittedly aggressive. Management had previously said that it was targeting \$5 million in revenue for 2024, which has not yet been reported. Most of this would come from Rotor Riot as only one component was shipping in the fourth quarter. But we believe that the retail business did well in the fourth quarter as we visited in December and saw frenetic activity. So our 2024 estimate is above where management had targeted, at \$5.7 million with \$5.6 million from retail sales and just \$100k in components sales. As noted, we think it will be tough to grow the enthusiast business but we peg growth at 10% for 2025 and 2026. The only other way we see FPV revenue really moving would be if the company acquired GetPFV, its larger competitor in the space. We also remind investors that the company only closed on the Red Cat transaction in mid-February of 2024, so the 2024 results will only show 10.5 months of the business. This should make for a strong comp in 1Q and could lead to quant-generated trading on the large 200% year-over-year growth we expect.

So, as discussed above, most of our growth comes from the components business. The company is well on the way to introducing new products and has won initial orders, but it has a huge task ahead of it to make our numbers. The good news is that it only has to sign a few large orders with drone manufacturers and those are seeing strong demand. We have also not yet factored in the announced acquisition of Aloft, as the company has not yet provided revenue numbers for that business or a closing date estimate.

We forecast \$11 million in components revenue in 2025 and \$40 million in 2026. While we believe that the market is there, and the company is well positioned with its rapidly growing product portfolio, we have no historical basis to base our forecast on.

In terms of profitability, we show the company getting to positive EBITDA in 2026, but again we have little historical perspective on which to base this. We do forecast a significant improvement in the gross margin as components should be more profitable than retail sales and the vertical integration should improve the margins of the retail business. We also believe that the company is going to need to significantly increase its employee base from the 16 employees currently. So while we have confidence that the company will post significant growth, and get near or above positive EBITDA, we won't be able to refine our model until we see a few more quarters.

Our detailed model is on page 24 of this report.



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Pro Forma Valuation, Excluding Expected M&A, Suggests a \$20 Share Price

Valuing UMAC shares is somewhat complex as there have been so many changes to the balance sheet since the last one was published as of September 30, 2024. The table below attempts to adjust for the conversion transactions and debt cleanup that have taken place since then. As noted, the November/December Trump Bump in the shares led to exercise of most warrants, with the cash being used to clean up debt, still leaving with the company with pro forma cash of around \$7.7 million. Not that we including warrants and underwriter shares from the October private placement, that are expected to be exercisable around the end of the month.

	Shares		Cash
11/13/2024 Shares outstanding	8,300,480	9/30/2024 Cash	\$ 1,685,772
\$3.0 mm convertible notes @\$1.99	1,507,538		
3,850 Series A	3,850,000		
210 Series C	630,000		
62.500 U/W warrants @\$5.00	62,500		\$ 312,500
630,000 conv notes warrants @\$1.99	630,000		\$ 1,253,700
Oct 29 PIPE			\$ 1,700,000
Advisor	150,000		
Offering warrants incl underwriter	1,389,079		\$ 2,764,267
	16,519,597		\$ 7,716,239
Pro Forma Enterprise Value			
Price per share	\$10.96		\$20.00
Pro forma shares	16,519,597		16,519,597
Pro forma market cap	181,054,780		330,391,934
Less: pro forma cash	(7,716,239)		(7,716,239)
Plus: pro forma debt	-		-
Pro Forma Enterpris Value	188,771,019		338,108,173
2026E Revenue	47,478,064		47,478,064
EV/Revenue	4.0x		7.1x

Source: Company reports and Litchfield Hills Research LLC



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With Growth Expected to be Nearly Four Times That of Comps, We Value the Shares at Two Times Comps

Our \$20 price target assumes that UMAC shares will trade at double the average EV/revenue multiple of ten comparables because we think its strategy will lead to much faster growth than peers. Unusual Machines can supply components to many companies in the industry, whereas its competitors' reach is more limited. Comps trade at 3.5x estimated 2026 revenue, based on FactSet data. UMAC shares trade at 4.0x or an 8% premium. Our \$20 price target assumes the shares will trade at 7x revenue or twice that of comps. We note that the shares current trade at 11x our 2025 revenue estimate, so our assumption of a 7x multiple on 2026 revenue is realistic, especially if the company grows as we expect.

Ticker	Company	Price Last	Cap \$ millions	EV \$ millions	2024E Rev. \$mils	2025E Rev. \$mils	Growth vs. 2024E	2026E Rev. \$mils	Growth vs. 2025E	EV/Rev. 2026E
UMAC	Unusual Machines Inc.	\$10.96	152.50	188.77	5.66	17.80	214.4%	47.48	166.8%	4.0x
UMAC	Unusual Machines Inc. @ target price	\$20.00	278.28	338.11	5.66	17.80	214.4%	47.48	166.8%	7.1x
AMBA	Ambarella, Inc.	\$82.17	3,427	3,444	279	323	15.7%	374	15.8%	9.2x
AVAV	AeroVironment, Inc.	\$155.30	4,382	4,343	819	994	21.3%	1,094	10.1%	4.0x
DCO	Ducommun Incorporated	\$62.45	923	1,164	785	828	5.5%	882	6.5%	1.3x
DPRO	Draganfly Inc	\$3.08	17	14	5	11	116.3%	20	73.6%	0.7x
DUOT	Duos Technologies Group Inc	\$7.31	61	107	9	24	183.9%	46	89.3%	2.3x
KSCP	Knightscope, Inc. Class A	\$9.01	38	50	9	11	14.2%	15	34.6%	3.5x
KTOS	Kratos Defense & Security Solutions, I	\$27.05	4,105	4,086	1,141	1,280	12.2%	1,487	16.2%	2.7x
ONDS	Ondas Holdings, Inc.	\$1.65	158	215	9	29	229.7%	65	123.9%	3.3x
RCAT	Red Cat Holdings Inc	\$8.91	763	858	57	114	99.6%	202	76.6%	4.2x
TDY	Teledyne Technologies Incorporated	\$496.89	23,156	25,543	5,670	5,997	5.8%	6,304	5.1%	4.1x
Average							70.4%		45.2%	3.5x
UMAC vs. Comps							3.0x		3.7x	1.1x

Source: Company reports and Litchfield Hills Research LLC

Unusual Machines Inc. NYSE - UMAC

After a Strong Trump Bump in December, the Shares Look to be Setting Up for the Next Rally

While we were working on this report, the stock experienced a tremendous surge, reaching an all-time high of \$23.62 on December 12th on heavy volume. The shares have settled in and have found technical support above the \$10 level so we think this represents a good entry point for new investors. Looking ahead, we think the company should exceed fourth-quarter revenue estimates and we expect some sizable order announcements for its growing line of drone components. We note that the stock is significantly under-owned by institutional investors and that the shares are extremely liquid, with average daily volume of roughly 1.5 million shares daily. Volume is an important metric for institutions as they look to be able to build positions without significantly moving the stock price, and exit if necessary.

- 52-week high \$23.62
- 52-week low \$ 0.98
- Market cap. \$186 million
- Enterprise value \$187 million
- Average daily volume 1,547,796 shares
- Institutional ownership 3.9%
- Insider ownership 19.94%
- Retail ownership 76.15%

Source: Factset Research Systems



Source: Factset Research Systems



Unusual Machines Inc.

NYSE - UMAC

Unusual Machines Income Forecast

Dollars in thousands, except per share data
Fiscal years ended December 31

	2024E					2025E					2026E				
	1QA	2QA	3QA	4Q	YEAR	1Q	2Q	3Q	4Q	YEAR	1Q	2Q	3Q	4Q	YEAR
Revenue															
Retail	618,915	1,411,124	1,531,264	2,000,000	5,561,303	1,361,613	1,552,236	1,684,390	2,200,000	6,798,240	1,497,774	1,707,460	1,852,829	2,420,000	7,478,064
						10.0%	10.0%	10.0%	10.0%	22.2%	10.0%	10.0%	10.0%	10.0%	10.0%
Components				100,000	100,000	500,000	2,500,000	3,500,000	4,500,000	11,000,000	5,000,000	8,000,000	12,000,000	15,000,000	40,000,000
									4400.0%	10900.0%	900.0%	220.0%	242.9%	233.3%	263.6%
Year-over-year growth	618,915	1,411,124	1,531,264	2,100,000	5,661,303	1,861,613	4,052,236	5,184,390	6,700,000	17,798,240	6,497,774	9,707,460	13,852,829	17,420,000	47,478,064
Sequential growth			8.5%	37.1%		200.8%	187.2%	238.6%	219.0%	214.4%	249.0%	139.6%	167.2%	160.0%	166.8%
						-11.4%	117.7%	27.9%	29.2%		-3.0%	49.4%	42.7%	25.8%	
Total cost of revenue	414,748	1,022,684	1,131,777	1,575,000	4,144,209	1,303,129	2,836,565	3,629,073	4,690,000	12,458,768	4,223,553	6,309,849	8,311,698	10,452,000	29,297,100
As a percent of revenue	67.0%	72.5%	73.9%	75.0%	73.2%	70.0%	70.0%	70.0%	70.0%	70.0%	65.0%	65.0%	60.0%	60.0%	61.7%
Gross margin	204,167	388,440	399,487	525,000	1,517,094	558,484	1,215,671	1,555,317	2,010,000	5,339,472	2,274,221	3,397,611	5,541,132	6,968,000	18,180,964
As a percent of revenue	33.0%	27.5%	26.1%	25.0%	26.8%	30.0%	30.0%	30.0%	30.0%	30.0%	35.0%	35.0%	40.0%	40.0%	38.3%
Operations	112,322	213,772	218,126	252,000	796,220	465,403	486,268	622,127	402,000	1,975,798	1,299,555	970,746	1,385,283	871,000	4,526,584
As a percent of revenue	18.1%	15.1%	14.2%	12.0%	14.1%	25.0%	12.0%	12.0%	6.0%	11.1%	20.0%	10.0%	10.0%	5.0%	9.5%
Research and development	16,796	10,282	15,000	21,000	63,078	18,616	40,522	51,844	67,000	177,982	64,978	97,075	138,528	174,200	474,781
As a percent of revenue	2.7%	0.7%	1.0%	1.0%	1.1%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
Selling and marketing	157,058	386,332	252,253	294,000	1,089,643	465,403	567,313	725,815	536,000	2,294,531	1,299,555	1,164,895	1,662,340	2,090,400	6,217,190
As a percent of revenue	25.4%	27.4%	16.5%	14.0%	19.2%	25.0%	14.0%	14.0%	8.0%	12.9%	20.0%	12.0%	12.0%	12.0%	13.1%
General and administrative	998,874	1,349,587	1,374,989	1,470,000	5,193,450	1,500,000	1,600,000	1,700,000	1,800,000	6,600,000	2,000,000	2,000,000	2,000,000	2,000,000	8,000,000
As a percent of revenue	161.4%	95.6%	89.8%	70.0%	91.7%	80.6%	39.5%	32.8%	26.9%	37.1%	30.8%	20.6%	14.4%	11.5%	16.8%
Depreciation and amortization	5,470	171	171	171	5,983	171	171	171	171	684	171	171	171	171	684
Operating income	(1,086,353)	(1,571,704)	(1,461,052)	(1,512,171)	(5,631,280)	(1,891,110)	(1,478,604)	(1,544,639)	(795,171)	(5,709,524)	(2,390,037)	(835,276)	354,810	1,832,229	(1,038,274)
Operating margin	-175.5%	-111.4%	-95.4%	-72.0%	-99.5%	-101.6%	-36.5%	-29.8%	-11.9%	-32.1%	-36.8%	-8.6%	2.6%	10.5%	-2.2%
Interest income			(180)		(180)					-					-
Interest expense	19,649	40,534	41,465	41,465	143,113	41,465	41,465	41,465	41,465	165,860	41,465	41,465	41,465	41,465	165,860
Loss on extinguishment of debt			685,151		685,151					-					-
Change in fair value of derivatives			(43,238)		(43,238)					-					-
Pretax Income	(1,106,002)	(1,612,238)	(1,502,517)	(1,553,636)	(5,774,393)	(1,932,575)	(1,520,069)	(1,586,104)	(836,636)	(5,875,384)	(2,431,502)	(876,741)	313,345	1,790,764	(1,204,134)
Taxes	-	15,828	-	-	15,828	-	-	-	-	-	-	-	-	-	-
Tax rate	0.0%	-1.0%	0.0%	0.0%	-0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Net income to common	(1,106,002)	(1,628,066)	41,465	(1,553,636)	(5,790,221)	(1,932,575)	(1,520,069)	(1,586,104)	(836,636)	(5,875,384)	(2,431,502)	(876,741)	313,345	1,790,764	(1,204,134)
Net income margin	-178.7%	-115.4%	2.7%	-74.0%	-102.3%	-103.8%	-37.5%	-30.6%	-12.5%	-33.0%	-37.4%	-9.0%	2.3%	10.3%	-2.5%
Diluted shares outstanding	10,000,000	10,040,741	7,147,866	12,600,000	9,947,152	12,600,000	12,600,000	12,600,000	12,600,000	12,600,000	12,600,000	12,600,000	12,600,000	12,600,000	12,600,000
Seq change			(2,892,875)	-	-					-					-
EPS diluted - continuing	(\$0.11)	(\$0.16)	\$0.01	(\$0.12)	(\$0.58)	(\$0.15)	(\$0.12)	(\$0.13)	(\$0.07)	(\$0.47)	(\$0.19)	(\$0.07)	\$0.02	\$0.14	(\$0.10)
EBITDA															
Operating income	(1,086,353)	(1,571,704)	(1,461,052)	(1,512,171)	(5,631,280)	(1,891,110)	(1,478,604)	(1,544,639)	(795,171)	(5,709,524)	(2,390,037)	(835,276)	354,810	1,832,229	(1,038,274)
Addback:					-					-					-
Depreciation and amortization	5,470	171	171	171	5,983	171	171	171	171	684	171	171	171	171	684
Share-based compensation	64,344	425,767	398,240	400,000	1,288,351	500,000	600,000	700,000	700,000	2,500,000	1,000,000	1,000,000	1,000,000	1,000,000	4,000,000
Unusual items	-	-	641,913	-	641,913	-	-	-	-	-	-	-	-	-	-
EBITDA	(1,016,539)	(1,145,766)	(420,728)	(1,112,000)	(3,695,033)	(1,390,939)	(878,433)	(844,468)	(95,000)	(3,208,840)	(1,389,866)	164,895	1,354,981	2,832,400	2,962,410

Source: Company reports and Litchfield Hills Research



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Disclosures:

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