



New Glenn Reaches Orbit on First Launch

Blue Origin's New Glenn rocket achieved orbit on its long-awaited first launch Jan. 16, although the company failed in its attempt to recover the first stage.

New fuselages moving into the first Boeing 737 MAX final assembly line positions Dec. 6 signaled day-to-day work on the company's most important product was back underway following the end of the machinists strike in early November. Boeing's new priority is ramping up production and factory capacity across its commercial programs while staying true to its pledge to maintain quality.

Like the post-strike restart, the ramp-ups will be slow. The official 737 production restart, signified by Spirit AeroSystems-built fuselages moving into Flow Day 1, the first 737 final assembly station, on the three active 737 MAX lines at Boeing's production facility in Renton, Washington, came exactly one month after International Association of Machinists and Aerospace Workers (IAM) members began returning to work following a 53-day strike (AW&ST Nov. 11-24, 2024). The walkout also halted Boeing 767 and 777 lines in Everett, Washington, as well as other facilities in the Puget Sound region. Production since has resumed in Everett. "Our team has worked methodically to restart factory operations in the Pacific Northwest," the company says.

Boeing's restart processes included using its safety management system to develop risk-based plans for each aircraft program to ensure the correct parts and tooling were in place and ready for the workforce, the company says. Workers also received training designed to support a trouble-free ramp-up.

Boeing is offering little information about the pace of its planned production ramp-up. Just before the strike, its 737 lines were combining to roll out 25-30 aircraft per month—a figure that was climbing slowly after a dip into the low 20s in the aftermath of the Alaska Airlines 737-9 door-plug blowout on Jan. 5, 2024.

The 737 program remains under an FAA-imposed production limit of 38 per month—a ramification of the Alaska incident. A recent RBC Capital Markets survey showed most 737 MAX suppliers do not expect the monthly production rate to reach 38 until 2026.

The latest projection of the Aviation Week Network Fleet Discovery database shows a similar ramp-up pace. This monthly 737 MAX rollout rate —is opposed to Boeing's definition, which is the supply chain's shipping pace. Fleet Discovery projects the rate will reach the mid-20s pace around the end of the first quarter of 2025, climb to 30 in the third quarter and end the year at 32. The figures exclude a handful of military variants that will be produced on a dedicated production line.

Boeing's past post-strike ramp-ups have taken time. Following a 58-day strike in 2008, factories needed nearly a year to reach pre-walkout levels. The current ramp-up will be more complicated, coming hand-in-hand with implementation of an FAA-approved plan to address systemic quality control issues spotlighted by the Alaska incident and related audits of its production processes.

"As expected, Boeing has made progress executing its comprehensive plan in these areas, and we will continue to closely monitor the results as they begin to ramp up production following the strike," FAA Administrator Michael Whitaker said following a daylong visit to the Renton factory on Dec. 3. Whitaker sees Boeing's deliberate approach as a positive departure from past post-strike plans. "In previous strikes, they've just come right back and started production," he told NBC News. "This time, following safety management principles, they've been very systematic." To continue reading, please click [here](#).

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	Nov '24	Dec '24	Jan '25	Feb '25	Mar '25	Apr '25
15-5	0.9018	0.8631	0.8601	0.8407	*	*
17-4	0.9145	0.8758	0.8652	0.8454	*	*
17-7	0.9075	0.8558	0.8489	0.8341	*	*
201	0.6588	0.6312	0.6583	0.6354	*	*
301 7.0%	0.8847	0.8354	0.8212	0.7977	*	*
302/304/304L	0.9700	0.9136	0.8984	0.8722	*	*
304-8.5%	1.0060	0.9461	0.9304	0.9033	*	*
305	1.2650	1.1804	1.1613	1.1273	*	*
309	1.3111	1.2636	1.2441	1.2064	*	*
310	1.8420	1.7452	1.7190	1.6667	*	*
316/316L	1.5377	1.4706	1.4416	1.4034	*	*
321	1.0286	0.9652	0.9490	0.9220	*	*
347	1.3382	1.2748	1.3817	1.3526	*	*
409/409 Mod	0.2975	0.2975	0.3200	0.3148	*	*
410/410S	0.3077	0.3448	0.3364	0.3321	*	*
430	0.3668	0.3668	0.3595	0.3495	*	*
439	0.3796	0.3796	0.3724	0.3612	*	*
263	7.0858	6.8385	6.5253	6.7060	6.3943	6.4058
276	9.1005	8.7629	8.8223	9.1071	8.7468	8.5867
A286	2.2944	2.2537	2.2435	2.3476	2.3951	2.3485
600	5.0647	5.2362	5.1826	5.4655	5.0339	4.9242
601	4.4458	4.3988	4.3564	4.5838	4.2420	4.1541
617	7.5783	7.3297	7.1742	7.4113	7.1706	7.0444
625	8.6425	8.4413	8.4504	8.7179	8.5763	8.4465
718	7.3737	7.2765	7.2582	7.4725	7.5076	7.4147
X-750	5.7535	5.6978	5.6475	5.9138	6.1235	6.0088
800	2.4714	2.4473	2.4255	2.5480	2.3724	2.3238
825	4.0233	3.9281	3.9242	4.0926	3.8592	3.7825
Alloy X	5.9894	5.7883	5.8009	6.0216	5.7292	5.6148
188	7.8815	7.6273	6.8786	6.8581	6.8907	6.8572
L-605	7.9367	7.6366	6.7280	6.6430	6.7083	6.6921

**Surcharges are not currently available*

	Nov '24	Dec '24	Jan '25	Feb '25	Mar '25	Apr '25
301 7%	1.0616	1.0025	0.9855	0.9572	*	*
302/304/304L	1.1640	1.0963	1.0781	1.0466	*	*
304 8.5%	1.2072	1.0963	1.1165	1.0840	*	*
305	1.5180	1.4165	1.3936	1.3528	*	*
316L	1.8452	1.7647	1.7299	1.8133	*	*
321	1.2343	1.1583	1.1388	1.1064	*	*
347	1.6058	1.5298	1.6580	1.6231	*	*
201	7.8636	7.7684	7.6826	8.1289	7.4372	7.2620
600	6.3546	6.2835	6.2191	6.5586	6.0407	5.9090
625	10.3711	10.1296	10.1405	10.4615	10.2915	10.1358
625LCF	10.3711	10.1296	10.1405	10.4615	10.2915	10.1358
718	8.8485	8.7319	8.7099	8.9671	9.0091	8.8976
Alloy X	8.5030	6.9459	6.9610	7.2259	6.8750	6.7378
X750	6.9042	6.8373	6.7770	7.0965	7.3482	7.2106

**Surcharges are not currently available*

	Sep '24	Oct '24	Nov '24	Dec '24	Jan '25	Feb '25
316LS/316LVM	2.37	2.33	2.39	2.27	2.22	2.18
Custom 455	1.35	1.32	1.39	1.32	1.31	1.30
Custom 465	1.98	1.97	2.09	2.01	2.00	1.99
Custom 630	0.99	0.95	0.96	0.91	0.89	0.88
CCM	10.82	10.45	10.39	10.05	9.51	8.91
625	9.52	9.51	9.96	9.53	9.40	9.30
718	7.13	7.10	7.49	7.13	7.05	6.99
718CR	7.13	7.10	7.49	7.13	7.05	6.99
A286	3.50	3.48	3.68	3.50	3.46	3.44
A2861	3.50	3.48	3.68	3.50	3.46	3.44
A2862	3.50	3.48	3.68	3.50	3.46	3.44
A2867	3.50	3.48	3.68	3.50	3.46	3.44
A286R1	3.50	3.48	3.68	3.50	3.46	3.44
A286SH	3.50	3.48	3.68	3.50	3.46	3.44
Alloy X	7.91	7.91	8.27	7.94	7.83	7.72
Wasp6	8.73	8.61	8.92	8.45	8.24	8.06
L605	11.42	11.33	11.30	10.98	10.57	10.13
321	1.45	1.39	1.43	1.33	1.30	1.29
347	1.46	1.40	1.43	1.34	1.30	1.29
Greek Ascoloy	1.33	1.34	1.34	1.31	1.30	1.29

**Surcharges are not currently available*

Form	Grade	Q3 2024 Surcharge	Q4 2024 Surcharge	Q1 2025 Surcharge
TI - SHEET	6AL4V	6.36	5.67	8.23
TI - PLATE	6AL4V	5.30	4.72	4.29
TI - PLATE	6AL4VE	3.62	3.38	3.18
TI - COIL	GR 2	8.92	8.92	8.13
TI - COIL	GR 3	8.92	8.92	8.13
TI - COIL	GR 4	8.92	8.92	8.13
TI - SHEET	GR 2	8.92	8.92	8.13
TI - SHEET	GR 3	8.92	8.92	8.13
TI - SHEET	GR 4	8.92	8.92	8.13
TI - BAR	6AL4V	7.76**	7.35	5.19
TI - BAR	6AL4VE	7.76**	7.35	5.19

**Surcharges are not currently available*

***Updated to correct processing error when first published*

Rocket Lab to Launch OroraTech Satellites

Rocket Lab announced Jan. 22 a contract to launch a set of wildfire-monitoring satellites for German company OroraTech on a short turnaround.

Rocket Lab said it will launch eight of OroraTech's smallsats on an Electron rocket from Launch Complex 1 in New Zealand. The press release announcing the contract did not disclose a launch date, but Rocket Lab said in a social media post that the launch "is just a few weeks away."

OroraTech is developing a constellation of satellites to detect and monitor wildfires, providing early warnings of fires to alert first responders. The company launched its third satellite, FOREST-3, on the SpaceX Transporter-12 dedicated rideshare mission Jan. 14.

The Munich-based company raised 25 million euros (\$26 million) in October 2024 and said at the time that, after the launch of FOREST-3, it would launch two sets of eight satellites each later in the year, but did not disclose its launch plans for them at the time. OroraTech plans to ultimately deploy a 100-satellite constellation.

Rocket Lab said the launch will take place less than four months after signing the contract. "Knowing that time is of the essence to get these satellites in space, we're proud to be rising to the challenge and supporting the OroraTech mission to better monitor for and protect against these devastating natural disasters globally," Peter Beck, chief executive of Rocket Lab, said in a statement.

Rocket Lab, one of the leaders in the small launch market, has often emphasized the flexibility that dedicated launches provide as it competes with rideshare alternatives like those offered by SpaceX, a point that Beck made in the statement about the contract.

"This launch is a showcase of all the benefits of flying dedicated on Electron: control over schedule, agility and ability to meet tight deadlines and mission requirements, and the reliability of launching on the world's most frequently launched small orbital rocket," he said.

Rocket Lab announced Jan. 21 its first launch of 2025, for French Internet-of-Things company Kinéis. The launch, scheduled for no earlier than Feb. 3 (U.S. time) from Launch Complex 1, will place five Kinéis satellites into orbit. It will be the fourth of five launches under a contract between the two companies.

Rocket Lab carried out 16 Electron launches in 2024, including two of the suborbital version of the rocket, known as HASTE. The company said it expects this year to exceed that mark, a company record, but did not provide a more specific estimate. To continue reading, please click [here](#).



SpaceX Heads Back to the Drawing Board for Starship's Upper Stage

SpaceX is giving its "damn the torpedoes" development philosophy a workout as it plans to return the Starship to flight within weeks after suffering a spectacular in-flight breakup during the heavy-lift system's seventh flight test.

The rocket company's effort to demonstrate payload deployment, land its upper stage and potentially achieve spaceship-to-ship fuel transfer this year had an inauspicious start when the Starship system suffered a setback during the Jan. 16 flight. Minutes after launch, the Block 2 upper stage broke up when a fire developed in the aft section.

The mishap caused several commercial airline flights over the northern Caribbean to enter holding patterns briefly or to divert as a precaution against possible impact with falling debris. The breakup also occurred before SpaceX was able to validate key goals of the test flight, including a first attempt at deploying a payload.

"Preliminary indication is that we had an oxygen/fuel leak in the cavity above the ship engine firewall that was large enough to build pressure in excess of the vent capacity," SpaceX CEO Elon Musk wrote on social media shortly after the test. "Nothing so far suggests pushing the next launch past next month."

Musk noted that "apart from obviously double-checking for leaks, we will add fire suppression to that volume and probably increase vent area."

Revised elements of the Block 2 upper stage include a new multifeedline fuel system for the vehicle's Raptor vacuum engines and several redesigned vents.

The Starship powered off the launchpad at Boca Chica Beach, Texas, at 4:37 p.m. CST. The 407-ft.-tall rocket passed through maximum dynamic pressure—or Max Q—as it passed through 14-km (9-mi.) altitude just over 1 min. into the flight. Some 90 sec. later, 30 of the first stage's 33 Raptor engines were shut off prior to hot-staging, when the Starship's six Raptors ignited to push the upper stage clear.

Telemetry data indicate problems with the system began around 7 min. 43 sec. after launch, when one of the three center-mounted Raptors appeared to shut down prematurely. A second inner Raptor cut off at around 8 min. 4 sec., followed 1 sec. later by the first of the three vacuum Raptors. A second vacuum Raptor shut down at 8 min. 17 sec., at which point telemetry ceased with the vehicle indicating a speed of 21,317 kph (13,246 mph) and an altitude of 146 km.

The 170-ft.-tall upper stage, which was intended to make a controlled landing in the Indian Ocean, broke apart before it could deploy 10 Starlink internet satellite mass simulators. To continue reading, please click [here](#).



Pratt & Whitney Unveils Details of Hydrogen-Steam Hybrid Engine Cycle

Hydrogen fuel may offer attractive pathways toward the goal of zero carbon emissions, but turning that vision into a practical propulsion system is another matter.

Now Pratt & Whitney thinks it may have taken the first steps along that path with the Hydrogen Steam-Injected, Intercooled Turbine Engine (HySIITE) concept—a novel hybrid engine configuration that combines the advantages of the fuel's cryogenic properties with the thermodynamic benefits of steam injection.

Pratt & Whitney has unveiled details of the concept, which has been studied under a two-year \$3.8 million U.S. Energy Department Advanced Research Projects Agency–Energy (ARPA-E) effort. While Pratt acknowledges the cycle is complex and requires more study, it is encouraged by the results, which show potential for as much as 35% lower energy use compared with current state-of-the-art engines.

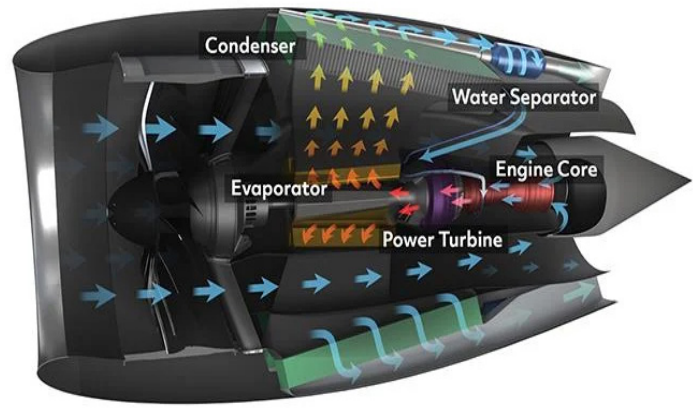
The work could pave the way for a range of new powerplants, Pratt says, including radically more efficient commercial geared turbofans with zero carbon emissions. The studies also indicate the concept could minimize emissions of nitrogen oxides (NO_x), a greenhouse gas produced as a byproduct of hydrogen's higher combustion temperatures.

HySIITE, which ended in December, was focused on notional component and system design along with feasibility tests of some critical high-risk elements. These included burning hydrogen in a heavy steam-air mix, evaluations of a practical evaporator design and tests to see how much water could be produced by a condenser.

"There's certainly far more technical challenges yet to go, but those were the ones [through which] we could get quick answers on key components to find out if it's worth continuing," said Neil Terwilliger, technical fellow for advanced concepts at Pratt.

"HySIITE is about us imagining if there were going to be hydrogen and that it was a viable decarbonization pathway," Terwilliger told Aviation Week on the sidelines at the American Institute of Aeronautics and Astronautics SciTech Forum here on Jan. 9. "What kind of engine would take the best advantage of it? Should it look like engines do today, or should we do something different?"

"We broke down that question to ask, 'What are the elements of hydrogen that we might take advantage of?'" Terwilliger continued. To continue reading, please click [here](#).



Rolls-Royce and Materials Solutions Collaborate on the Serial Production of Civil Aerospace Components

It has been announced that Rolls-Royce, Derby, UK, and Materials Solutions – a Siemens Energy Business, based in Worcester, UK, have officially signed a collaboration agreement to develop and supply serial production Additive Manufacturing applications for Rolls-Royce's civil aerospace business.

In a LinkedIn post, Quan Lac, Vice President Siemens Energy Additive Manufacturing, stated "With over a decade long history of working with Rolls-Royce on AM technology and part development we are proud to be selected now by Rolls-Royce to further complement their journey in AM production."

"It has been a long-standing ambition of our co-founder Trevor Illston since the very early days of Materials Solutions to supply production AM parts for flight, so it's with a great deal of pride that today we can say we are supporting critical power solutions for both land (Siemens Energy) and air!" added Lac.

Materials Solutions was one of the first companies approved by a major aerospace company for the Additive Manufacturing of components in 2009. At that time, Rolls-Royce had approved the company for non-flight and rig components.

"This marks another major milestone on our journey to roll out PBF-LB serial production beyond our Siemens Energy stationary gas turbine components," Materials Solutions stated in its LinkedIn post.

"Delivering AM components for commercial aviation applications was the North Star when a few visionary founders established Materials Solutions – a Siemens Energy Business almost 20 years ago. Thanks to a fantastic team of dedicated people in Worcester (UK) and our other Siemens Energy Additive Manufacturing locations! And not to forget, to our longest standing, loyal customer Rolls-Royce!" concluded Materials Solutions. To continue reading, please click [here](#).



Quality and Approvals at United Performance Metals

The Quality team at United Performance Metals is responsible for defining processes and developing clear work instructions to guarantee quality and consistency. The team uses sampling plans to ensure that the products and processes remain consistent and audits the work instructions for a seamless execution of plans and products.

United Performance Metals holds numerous industry and customer certifications that uphold the quality and consistency of UPM's products. The below certifications are given based on a third-party certifying body, NSF-ISR, that visits all UPM facilities to audit our Quality Management System:

- AS9100 and ISO 9001 certified
- ISO 13485 medical standard
- NADCAP (laser cutting)

Additionally, UPM holds a unique portfolio of OEM approvals spanning a wide range of industries. This includes customer approvals with GE Aviation to S-SPEC-1 (S-1000) for quality system approval and Pratt & Whitney, who has audited our process, documentation, and Quality Management System.

Ensuring consistency in our product gives our customers reassurance that their shipment is correct and helps UPM guarantee that they have fulfilled customers' orders to the best of their ability. Because metals can vary in appearance depending on finish, it is important to eliminate any confusion both in UPM's warehouse and when the product arrives at our customers facility. The quality team has a systematic method for assigning markings and edge types that works to confirm the correct product shipment.

When material arrives at UPM, it is first unpackaged and goes through a robust inspection process. This inspection allows UPM to verify that the material that we receive passes our promised quality assurance. Once the material has successfully gone through the inspection process, it is further processed to meet customer requests. Once processed, it goes through an additional inspection before going to packaging. UPM's high quality packaging solutions are customized to meet specific requirements and protect customer orders, preventing damage during the transit process. To learn more about UPM's quality process and certifications, please click [here](#).



UPM International Employees Visit the Queen City

United Performance Metals is a global specialty metals solutions center offering a full line of high-performance metals and alloys, quality approvals, and custom supply chain solutions. UPM works to provide a unique combination of high-performance products and FIRSTCUT+® Processing Services serving customers in a variety of industries including Aerospace, Defense, Space, Fastener, Medical, Power Generation, Alternative Energy, Hydrogen, Oil and Gas, Semiconductor, and more. Headquartered in Cincinnati, Ohio, UPM has six other domestic locations in Oakland, California, Los Angeles, California, Hartford, Connecticut, Wallingford, Connecticut, Chicago, Illinois, and Greenville, South Carolina. Additionally, United Performance Metals has international facilities in Belfast, Northern Ireland, Budapest, Hungary, Yichang, China, and Singapore. For additional UPM location information, please click [here](#).

This January, a group of UPM International employees made their way to headquarters for a host of trainings and meetings. While visiting, the sales and international sales teams took our guests to a Cincinnati staple: Skyline Chili.

Skyline Chili, known for its distinct flavor and sweet-and-savory taste, is traditionally served atop spaghetti or hot dogs. Originating in Cincinnati, Ohio in 1912, Skyline Chili is a unique dish that is a favorite among many in the Cincinnati region. Skyline operates 160 restaurants in Ohio, Indiana, Kentucky, and Florida. UPM's international guests enjoyed their Skyline Chili experience and were all fans of the Cincinnati-native dish, with some employees even going for seconds!

