Ode to E Pluribus Unum for Sunday July 20 2025

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Milky Way Through Otago Spires

Image Credit & Copyright: Kavan Chay; Text: Ogetay Kayali (Michigan Tech U.)

Does the Milky Way always rise between these two rocks? No. Capturing this stunning alignment took careful planning: being in the right place at the right time.

In the featured image taken in June 2024 from Otago, New Zealand, the bright central core of our Milky Way Galaxy, home to the many of our Galaxy's 400 billion stars, can be seen between two picturesque rocks spires. For observers in Earth's Northern Hemisphere, the core is only visible throughout the summer. As Earth orbits the Sun, different parts of the Milky Way become visible at different angles at different times of the night.

As Earth rotates, the orientation of the Milky Way in the sky also shifts -- sometimes standing vertically as seen in the featured image, and other times stretching parallel to the horizon, making it harder to see. In early June, observers can watch it emerge low on the horizon after sunset and gradually arc upward to reveal its full grandeur.

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Jester's Cap

Joe Horton Speaks to Last Week's Ode

Turns out that "Tonto" means "stupid" in the dialect used on the tv show with Clayton Moore and Jay Silverheels. When they toured in Europe--Spain in particular--they changed his name so that it didn't come across as the Lone Ranger and his faithful Indian companion, Stupid. But what about Kimosabe? Perhaps a play on *qui no sabe*—"who knows nothing?"

One never knows these things.

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In 1964, the annual large hurricane that hit my home town of New Orleans moved north. The wind was strongly from the south. Around midnight, give or take, the eye passed over us and by late morning to early afternoon, the wind had shifted to strongly from the north. And an interesting thing happened. I hadn't been very curious about things during the first two parts of the storm, but it turns out that a lot of water in Lake Pontchartrain got pushed north by the wind. Then the eye came over the lake and the

water began seiching [a real word] southward. And to help it along, a sustained 60-70 mph wind from the north pushed it far south.

The levees at the lakefront are ~12 feet high and made of grass covered earth. The lake's water level is usually about 8-10 feet below the top of the concrete seawall, which is at ground level. By around 3 PM, the lake had risen to within about a foot of the top of the levee--it had risen 8 + 11 = 19 feet. North wind was steady and everyone standing on top of the levee had to lean into it to stand up.

When I decided to see what would happen if I stood up straight, I got pushed back hard enough that I backpedaled about 50 feet to stop myself from falling on my ass.

Waves didn't get much taller than about a foot or a foot and a half, but as soon as they formed, the wind snapped the tops off and pushed them right into us. It was a seriously impressive display of Mother Nature going on a spree.

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Was it Little Orphan Annie or a superhero who was always saying "leapin' lizards?" I think it was Annie. *(It was)*

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The brain does have limits, which vary among people. Back in the early 80s, I joined the faculty at Pitt as the fifth neuroradiologist. We did a lot of work. Then one of my colleagues got married and his new wife wanted them to return whence she came" Atlanta. And then there were 4.

Next guy decided to try private practice across town.

Then 3, at which time the third person left, and then there were two. Or, more accurately, about one and a quarter: my remaining colleague was always at a meeting or vacation or attending a board function. And he wasn't going to let a single vacation or sick day get away from him.

First time we were down to one [read: me], things were merely wildly hectic the first week. Slept a lot over the weekend. Tuesday the second week something changed: one of the neurosurgeons came by that afternoon to ask me about the angiogram he had asked me to do that morning. I had exactly zero recall of that, but we had done it and it was hanging on the film viewer.

I knew then and there that I had a brain tumor and was going to die from it soon. The rest of the week was like that--I had totally hit the wall memory-wise and began my lifetime habit of carrying 3x5 cards all the time.

Following week was just fine--we were fat: there were two of us. Piece of cake. Next time he left for two weeks, I was ready and just as before, Tuesday of the week 2 was "insufficient memory" day.

Fast forward about 10 years. I'm talking with one of the surgeons and I happened to relate that to him. He gave me a wry sidelong grin. "It's happened to you, too, hasn't it?" Bigger grin.

Brain acts like muscle in a way: while it can do amazing things, it does have a limit--at least mine and Paul's do. But interestingly enough, logic is unimpaired--just memory.

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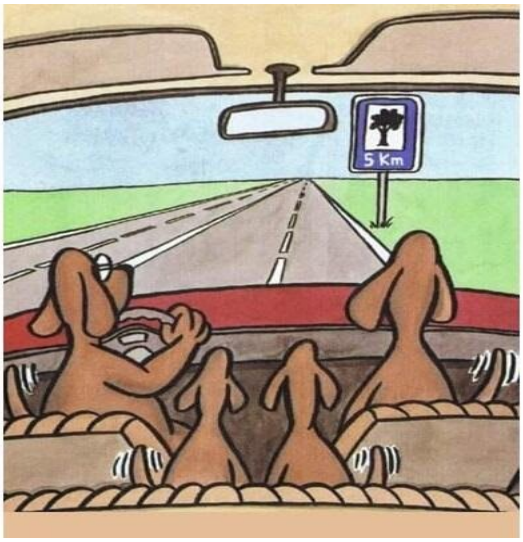

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Chords & Riffs

Joe Pass (1929-1994)

Joe Pass and Ella Fitzgerald live on PBS, 1979.
(Image credit: Paul Natkin/Getty Images)

The American jazz guitarist. Pass recorded and performed live with pianist Oscar Peterson, composer Duke Ellington, and vocalist Ella Fitzgerald, and he is generally esteemed as one of the most notable jazz guitarists of the 20th century for his solo guitar playing, found on recordings such as Virtuoso.

In his formative years, Pass spent his time taking in as much of the great jazz scene that NYC had to offer, soaking up the music of Charlie Parker, Dizzy Gillespie, Art Tatum and other jazz mavericks of the era. But it was also at this time that he picked up a drug habit, something that was to plague his life for the next 15 years.

In 1954, Joe was arrested and sent to the Public Health Service Hospital in Fort Worth, Texas, where he served four years. Following his release, in 1960 he entered Synanon, a rehabilitation centre based in Santa Monica, California, and it was there that he finally started to look at his life and career more seriously.

Two years later he made his debut recording, Sounds Of Synanon, which also featured five other jazz musicians who were resident at the facility. The influential publication DownBeat stated the album "unveils a star in Joe Pass."

Pass may well have been the first electric jazz guitarist to possess the technical facility to hold his own among the sax and piano players of the time, but it wasn't just about speed. His ideas were so melodic and well crafted; it was never just a series of fast scale-runs.

He showed complete mastery of the bebop jazz language – a language invented on horns. And for anyone who's tried to play a Charlie Parker theme at speed on the guitar, they'll know it's not easy.

In 1973 Pass met record producer Norman Granz who, with his organisation Jazz At The Philharmonic, had managed to elevate jazz from club to concert hall. On Granz's roster were the likes of Charlie Parker, Dizzy Gillespie, Oscar Peterson and Ella Fitzgerald.

Granz then teamed Joe with piano giant Oscar Peterson and Danish bassist Niels-Henning Ørsted Pedersen for the album The Trio, which went on to win a Grammy. The three musicians became a regular touring group throughout the 70s and 80s, taking Joe all over the world.

Joe also collaborated with Ella Fitzgerald, and the pair recorded four studio albums together between 1973 and 1986, as well as several live releases. This revealed another side to Joe's musicianship, demonstrating a sensitive and complementary accompaniment to Ella's sublime vocals. Ella and Joe enjoyed a deep connection and friendship that shone through on everything they played together.

In the early '90s Joe's health started to decline, and in 1992 he was diagnosed with liver cancer. He continued to play and record up until 16 days before his death on 23

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Rick Beato, The Record that changed my life https://youtu.be/34hQvMhHL34
Ain't Misbehavin' https://youtu.be/p_kUJa1PueM?list=RDp_kUJa1PueM
Summertime https://youtu.be/3htyYmPe9Xc?list=RD3htyYmPe9Xc
Blue Side of Jazz https://youtu.be/J5wOdikpRu8
With Ella Fitzgerald https://youtu.be/2olBE4C5_Gk?list=RD2olBE4C5_Gk&t=1637

The piece with Ella Fitzgerald is for the ages.

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FLASHMOB CENTRAL

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RAF FlashMob For The Queen's 90th Birthday

youtube

https://youtu.be/hikuB-YKNDY

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Binge Drinking Brake Found in Mouse Brains

Although this study advances understanding of how and where binge drinking modulates brain function in mice, it remains unclear whether human brains are also equipped with the same neuronal ensemble. If they are, stimulating these neurons may provide a path toward helping people who experience difficulty controlling their alcohol intake

venturarecoverycenter.com

Despite the profound human, social and economic costs of alcohol abuse, existing treatments have failed to provide meaningful relief. Excessive alcohol consumption remains a leading cause of death and disability worldwide. In the U.S., 16.4 million people age 12 and older report binge drinking on five or more days in the past month.

Over the past three decades, efforts to treat excessive drinking have focused primarily on developing drugs that target proteins that can control how neurons respond to stimuli. Because these proteins are present in almost every neuron throughout the brain, the drugs also affect neurons that aren't directly responsible for regulating alcohol's effects. This often leads to unwanted side effects like headache, fatigue, drowsiness or insomnia

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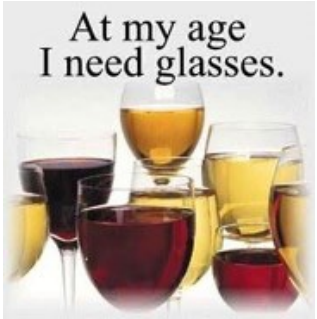

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Blood-Red Squid Drifts Through Antarctic Ocean's Midnight Zone

Researchers have filmed a living Antarctic gonate squid in a world-first sighting deep in the ocean surrounding Antarctica.

Researchers recorded the first-known sighting of a living Gonatus antarcticus as part of the National Geographic and Rolex Perpetual Planet Expedition. *(Image credit: Photo and video by ROV SuBastian / Schmidt Ocean Institute)*

An elusive species of deep-sea squid has been seen alive for the first time off Antarctica, National Geographic has announced.

Researchers filmed the Antarctic gonate squid (Gonatus antarcticus) drifting through the black waters of the ocean's midnight zone, 7,060 feet (2,152 meters) below the surface, on Dec. 25, 2024.

The creature was in the bathypelagic or midnight zone, 3,300 to 13,100 feet (1,000 to 4,000 m) below the ocean's surface. No sunlight can penetrate that far into the ocean, so the midnight zone's only light comes from animals that can illuminate themselves with bioluminescence, according to the National Oceanic and Atmospheric Administration (NOAA).

https://bit.ly/3SJmfev

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GOOD EATS FROM THE ODE

Millie Crowley's Oatmeal Bread

Place the following ingredients in a mixing bowl.

1.5 C Oatmeal
3/4 C Sugar
1 rounded T Shortening (I use butter)
2 t Salt
5 C Flour

Add 2 C boiling water, stir and let stand until lukewarm.

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Dissolve 1 packet dry yeast in 1/4 Cup warm water (if doing a double batch, dissolve I package in 1/2 Cup warm water) and add to lukewarm batter.

Stir in 5 Cups flour. Knead until smooth. You may have to work in the last cups of flour while kneading. If you can't get it all in, that is OK. {Kneading until smooth means until it feels like Cleopatra's thigh, or so I was told.)

Let rise in a warm place covered with a damp cloth, until light (about two hours).

Knead on a floured surface, quickly, form into loaves and put into greased pans.

Let rise until double in bulk, covered and in a warm place.

Bake 15 min. at 400°, then about 35 min. at 325°. Turn out of pans at once.

Glaze with a little milk mixed with a Tsp of sugar.

It is wonderful to eat hot and buttered right out of the oven, or toasted and buttered later.

From Larry Crowley who says, "Makes two loaves, so double the recipe. Duh!"

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Earth's Oldest Known Rocks Are Almost 4.2 Billion Years Old

They were born during the Hadean Era. What's that?

The view from the belt out onto the bay.
Image credit: Jonathan O'Neil

The Complete History of the Earth: Hadean Eon

Tectonic processes, volcanic activity, and surface erosion constantly recycle the Earth's crust, so that little, if anything, of the first crust to form out of the primordial magma ocean survives. Moreover, there are great challenges in precisely dating truly ancient rocks, so it's hard to determine the oldest survivors.

Nevertheless, the Nuvvuagittuq Greenstone Belt, which sits on the eastern shore of Hudson Bay, is accepted as one of the contenders. Even the youngest estimate for the belt's age is around 3.77 billion years. The oldest is 4.3 billion years, a figure that is hard to beat on a planet thought to be less than 4.6 billion years old, and that was initially too hot for rocks to form.

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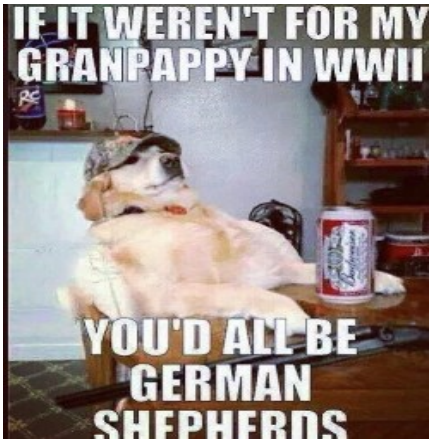

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Walmart Tests Dark Stores

As the retailer accelerates its delivery efforts, the brick-and-mortar locations will fulfill online orders — but are not open to the public.

Walmart is testing dark stores with a pilot location in Dallas.
Permission granted by Walmar

A dark store may look like a regular shopping location, but there's a catch: the public isn't allowed inside.

Dark stores are used to speed up and streamline online fulfillment, which is important for a retailer that is accelerating its operations. The company has been using its store footprint and technology, including drones, to advance delivery in recent years.

- Walmart is testing dark stores, or brick-and-mortar locations that fulfill online orders but are not open to the public, the company confirmed Wednesday.

- The retailer is currently piloting the concept in Dallas.
- The dark stores will carry some of the retailer's most popular products, as was first reported by Bloomberg. Another location is planned for Bentonville, Arkansas, the retailer's hometown, per the publication.

Walmart U.S. achieved e-commerce profitability in Q1 for the first time, with sales up 21%, a metric CFO John David Rainey said is "an important milestone for our company."

E-commerce net delivery costs have declined as the retailer densifies last-mile deliveries and as Walmart shoppers pay fees for faster delivery services, per Rainey. The company anticipates soon reaching 95% of the U.S. population with delivery options of three hours or less. The number of deliveries in under three hours grew by 91% in Q1 compared to the year-ago quarter.

Walmart reported that revenue in Q1 grew by 2.5% year over year to $165.6 billion, while operating income increased 4.3% to $7.1 billion. The company at the time warned of price increases due to fluctuations in tariff policies.

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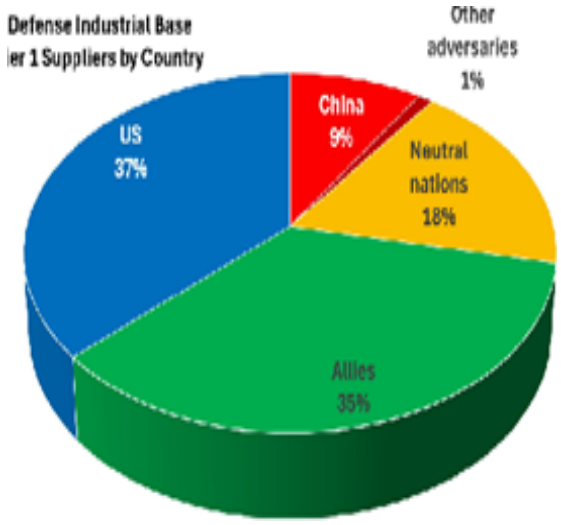
Nearly 10% 'Tier 1' Defense Subcontractors Are Chinese

The new study of 2024 data also warns that the Pentagon remains over-reliant on a small number of traditional prime contractors and a supplier base rife with potential bottlenecks.



Chinese firms make up over 9% of the major subcontractors ("Tier 1 Suppliers") on Defense Department contracts.
(Breaking Defense analysis of Govini data)

Forty-five percent of Tier 1 nuclear suppliers are US-based; almost 30 percent are from various allied nations, led by Great Britain (5 percent of suppliers) and Japan (3 percent); 17 percent are from neutral or non-aligned nations, led by India (4 percent); and a relatively modest 9 percent are from "adversarial" nations, almost all of those being from China (just under 8 percent).

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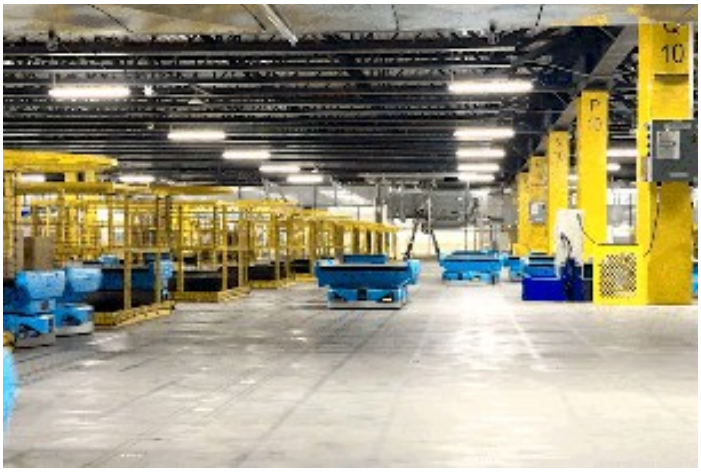
Amazon Close to Using More Robots Than Humans in Warehouses.



Robots at the Amazon facility in Shreveport.
Video: Desiree Rios For WSJ

https://m.wsj.net/video-atmo/20250627/d0f25c7d-90cd-4ac5-b6b6-25d9d118daac/1/amazonrobotsheader1_1080.mp4

At Amazon's 3-million-square-foot facility in Shreveport, La., more than six dozen robotic arms sort, stack and consolidate millions of items. Robots help ready customer orders and zip carts of packages for loading onto trucks. They're part of the growing automation that has helped Amazon improve productivity, Sebastian Herrera reports. Products move 25% faster through the facility than at other sites. For some workers, it has also meant more skilled assignments managing robots, though others are being supplanted by the machines.

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New Imaging Technique Reconstructs the Shapes of Hidden Objects

By leveraging reflections from wireless signals like Wi-Fi, the system could allow robots to find and manipulate items that are blocked from view.

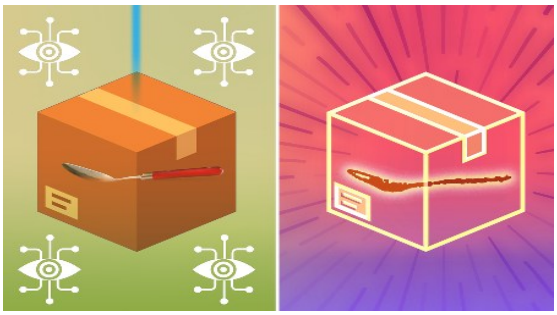

Image MIT News, figures courtesy of the researchers

A new imaging technique developed by MIT researchers could enable quality-control robots in a warehouse to peer through a cardboard shipping box and see that the handle of a mug buried under packing peanuts is broken.

Their approach leverages millimeter wave (mmWave) signals, the same type of signals used in Wi-Fi, to create accurate 3D reconstructions of objects that are blocked from view.

Video https://youtu.be/Jsl6mxsdrcQ

The waves can travel through common obstacles like plastic containers or interior walls, and reflect off hidden objects. The system, called mmNorm, collects those reflections and feeds them into an algorithm that estimates the shape of the object's surface.

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Vatican's 10-Year Restoration Project Helps "Rewrite" Art History

Riccardo De Luca/Anadolu Agency via Getty Images

The Vatican Museums have officially completed a decadelong restoration project of the Raphael Rooms, a collection of ornately decorated reception rooms of the Apostolic Palace. And they saved the largest and reportedly most important room for last: the Hall of Constantine, featuring a grand work of art by Raphael Sanzio.

While restoring the room to its original grandeur, Vatican technicians discovered Raphael was implementing a novel mural painting technique that he never got the chance to finish. Rather than fresco painting (painting on wet plaster), the Renaissance artist used oil paint directly on the wall to depict two female figures.

The theory is that he wanted to give the images greater brilliance, per the Associated Press. That's something he likely planned to execute beyond the two figures, as Vatican restorers discovered a grid of nails underneath the plaster. These nails are believed to have been drilled into the wall to hold the natural resin surface that Raphael intended to adorn with oil paints. But the artist died before the piece was completed, leaving students — who were not experts at the oil technique — to finish the job, thus explaining why the rest of the room is filled with frescoes.

"With this restoration, we rewrite a part of the history of art," Barbara Jatta, director of the Vatican Museums, said during a presentation to the press last week. Check out the newly restored room.

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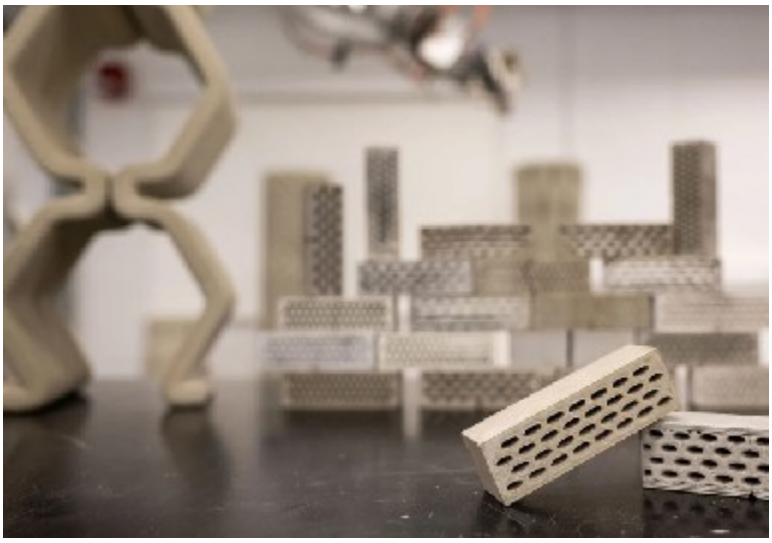
Bone-Like, Hollow Concrete Design Makes It 5.6 Times Stronger

'Instead of breaking all at once, the material withstands progressive damage, making it much tougher.'



The architecture resists crack propagation and toughens the material.
Credit: Sameer A. Khan/Fotobuddy

Human femurs have inspired a new cement-based construction material that is multiple times stronger than traditional concrete. But the bone-like design doesn't get its resiliency from any new additives, but from its hollowed out shape.

In a study published on September 10 in the journal Advanced Materials, researchers at Princeton University showcased how cement paste molded into hollow, tube-like architectures can create building blocks as much as 5.6 times more resistant to cracking or "sudden failure" as standard concrete—a major construction concern.

Their solution is derived from a human femur's dense outer shell, known as the cortical bone. In this vital layer, numerous elliptical, tubelike parts called osteons are suspended in an organic matrix, which are then surrounded by comparatively weak interfaces, coincidentally also called "cement lines."

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Will glow-in-the-dark materials someday light our cities?

Substances that persistently luminesce are already used in some bike lanes, and in the future could be applied to sidewalks, streets and buildings — saving energy and reducing urban heat

geneticliteracyproject.org

A new generation of luminescent materials has the potential to cool cities by re-emitting light that would otherwise be converted into heat. They might also cut down on energy use, since luminescent sidewalks, glowing road markers or even glowing buildings could replace some street lighting. Already, some cities in Europe have installed glowing bicycle lanes, and some researchers have studied using glowing paint for road markings.

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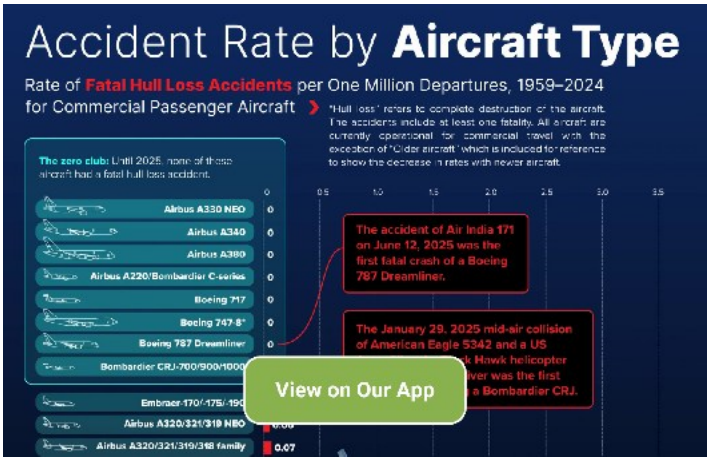
Accident Rate by Aircraft Type



Every year, Boeing releases its Statistical Summary of Commercial Jet Airplane Accidents for analysis and insights into flight safety worldwide. Using data from the latest 2024 report, we learn that several airplane models common among airlines have never had a fatal hull loss crash. Two members of this zero club, however will move down the scale in 2025 after the crashes of Air India 171 (a Boeing 787 Dreamliner) and American Eagle 5342 (a Bombardier CRJ-700).

Boeing emphasizes in their report the value of crash rate vs total crashes, as the number of departures varies among planes. In their words: "there is a stronger statistical correlation between accidents and departures than there is between accidents and flight-hours, or between accidents and the number of airplanes in service, or between accidents and passenger miles or freight miles."

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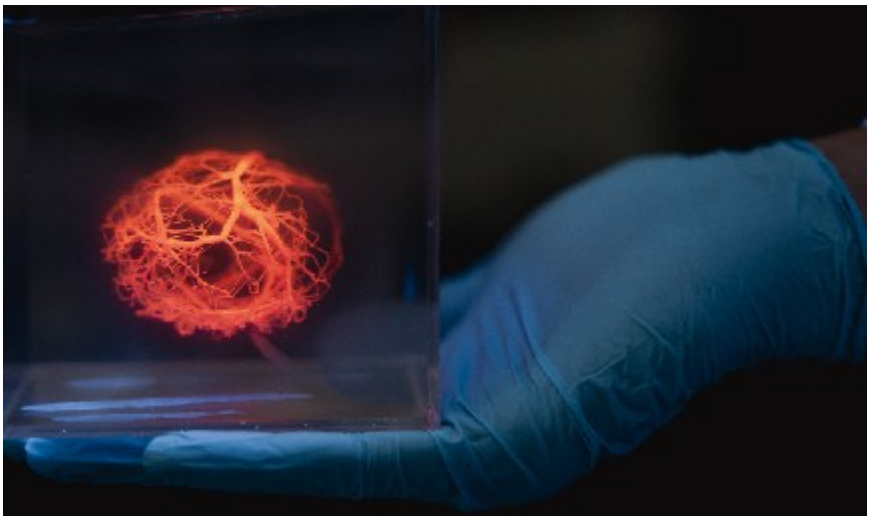
Designing Blood Vessels For 3D Printed Hearts

Stanford researchers have developed a faster, more precise way to model and print vascular systems, solving a critical challenge in fabricating transplantable organs from patients' own cells.



A model of a vascular tree printed using a 3D bioprinter.
Andrew Brodhead

There are more than 100,000 people on organ transplant lists in the U.S., some of whom will wait years to receive one – and some may not survive the wait. Even with a good match, there is a chance that a person's body will reject the organ. To shorten waiting periods and reduce the possibility of rejection, researchers in regenerative medicine are developing methods to use a patient's own cells to fabricate personalized hearts, kidneys, livers, and other organs on demand.

Ensuring that oxygen and nutrients can reach every part of a newly grown organ is an ongoing challenge. Researchers at Stanford have created new tools to design and 3D print the incredibly complex vascular trees needed to carry blood throughout an organ. Their platform, published June 12 in Science, generates designs that resemble what we actually see in the human body significantly faster than previous attempts and is able to translate those designs into instructions for a 3D printer.

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Supersonic Ban Repealed

FAA has 21 months to get final regulations written and published.

Credit: Boom Supersonic

An executive order has removed the 52-year-old ban on supersonic flight over land in the U.S. The order also directs the FAA to come up with regulations that strike a balance between "community acceptability, economic reasonableness and technological feasibility" so that legal supersonic operations can be resumed. "

The order essentially short-circuits a legislative attempt spearheaded by a group of Republican senators to bass a bill in Congress to accomplish the same thing. There have been a couple of attempts by private companies to resurrect supersonic airline travel in the U.S. by tackling the technological challenges first and proving they can minimize the sonic boom impact. The only one left, Boom Supersonic, recently began supersonic testing under a waiver from the FAA and has shown that with speeds and flight profiles set to match atmospheric conditions they create a boom that doesn't reach the ground. The ban will be lifted under provisional regulations by early September, and then the FAA has 18 months to write a Notice of Proposed Rulemaking codifying it permanently.

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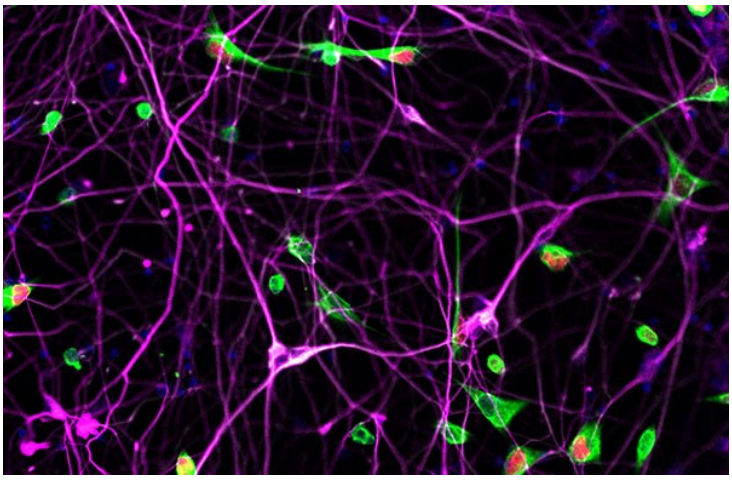
Surprising Connections Between Cancer And The Nervous System

Scientists are finding that the nervous system may not be the innocent bystander in cancer that it was once considered to be. Instead, it likely plays a role in everything from tumor initiation and growth to metastasis and response to treatment.



William Hwang, MD ’15 PhD ’13, wanted to understand where that intractable pain was coming from. So, he asked Mari Mino-Kenudson, an HMS professor of pathology at Massachusetts General Hospital, to walk him through the patient’s tissue slides under a microscope. That’s when he saw a nerve encased within a tumor, being prodded and compressed by cancer cells. The patient was suffering from peri-neural invasion, a painful phenomenon in which malignant cells surround and invade nerves.

Hwang dug into the literature and found that perineural invasion was documented as early as 1897, when a urologist named Hugh Young used methylene blue staining to examine tumors and noticed something curious: bundles of nerve fibers creeping into many of his samples. Although nearly half of the tumors he examined showed connections with nerves, Young expressed surprise that no other researchers had yet investigated such links. "The question of the relation of nerves to tumors … is practically terra incognita," he wrote in the Journal of Experimental Medicine.

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Botanic Atlas

An interactive world map showcasing 30,000 plant species from a vast collection of botanical specimens, with plant descriptions powered by Google AI

Solidago puberula (downy goldenrod) Found in: Canada, United States of America
generated by AI and may contain inaccuracies.

An example brought forth and presented with a variety of images of the specimen.

You need to go into the app and play round to see what's there.

https://bit.ly/4002x29

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In-Flight Separation Mid Exit Door Plug
Alaska Airlines Boeing 737

Here's the National Transportation Safety Board's accident report including findings and recommendations. It's worth reading to see what's involved.

NTSB investigators examine the door plug from Alaska Airlines flight 1282, a Boeing 737-9 MAX.
NTSB

On January 5, 2024, a Boeing 737-9 airplane operated by Alaska Airlines as flight 1282 experienced an in-flight separation of the left mid exit door (MED) plug and rapid depressurization when climbing through about 14,830 ft after takeoff from Portland International Airport (PDX), Portland, Oregon.

One flight attendant and 7 passengers received minor injuries; the captain, the first officer, 3 flight attendants, and 164 passengers were uninjured; and the airplane sustained substantial damage. The flight and cabin crews executed the emergency procedures in response to the rapid depressurization, and the flight returned to PDX for a safe landing.

The probable cause of this accident was the in-flight separation of the left MED plug due to Boeing's failure to provide adequate training, guidance, and oversight necessary to ensure that manufacturing personnel could consistently and correctly comply with its parts removal process, which was intended to document and ensure that the securing bolts and hardware that were removed to facilitate rework during the manufacturing

process were properly reinstalled. Contributing to the accident was the FAA's ineffective compliance enforcement surveillance and audit planning activities, which failed to adequately identify and ensure that Boeing addressed the repetitive and systemic nonconformance issues associated with its parts removal process.

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Whale Graveyard in the Sahara Shows They Once Had Feet and Toes

Egypt's Whale Valley, or "Wadi Al-Hitan" in Arabic, holds more than 400 primitive whale skeletons that offer a snapshot of the evolution of these creatures from land-based to marine animals.

Egypt's Wadi El-Hitan, or Valley of the Whales, was once covered with water and is now home to many ancient fossils of primitive whales.
(Image credit: Mohamed Elshahed/Anadolu Agency via Getty Images)

Whale Valley is a region of the Egyptian Sahara desert that is peppered with archaic whale skeletons, some of which have feet and toes preserved.

These skeletons and other marine fossils date to the late Eocene epoch (55.8 million to 33.9 million years ago), when present-day Egypt was submerged beneath the Tethys Ocean and whales had just evolved into sea creatures, according to UNESCO.

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DIY Ice Cream in Wartime

Take one Corsair, 5 ammo cans, canned milk and circle at 33,000 feet.

The Vought F4U Corsair was a multi-role aircraft: fighter, ground attacker, and ice cream maker.
USN

Determined to raise morale on a humid tropical island with no fresh food and no refrigeration, VMF 122 squadron commander, Hunter Reinburg, had a plan. His maintenance crew cut the ends off an old belly-mounted drop tank, strung wire at both ends, and mounted an access panel to the side.

Into this panel, secured by the wires, went a waterproof can that ordinarily stored .50-caliber bullets. And into that, the mess sergeant poured a mixture of canned milk and cocoa powder. Reinburg planned to ascend to high altitudes, where temperatures are well below freezing, and return with a gift for his men: Five gallons of homemade chocolate ice cream.

https://bit.ly/3GnWT3j

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Teen 3D-Printed a Beehive for His Bedroom

Oliver Taylor estimates there may be as many as 40,000 bees buzzing around his DIY hive.

Image: Courtesy of Bryan Mark Taylor

Oliver Taylor, who lives in Utah, built the DIY insect habitat with two hexagonal, 3D-printed units connected to his bedroom window. Bees enter through a ventilation tube attached to the window, which slightly resembles a stand-up air conditioning unit.

The hexagonal hives are modular in design, meaning Oliver can theoretically continue expanding their size by connecting additional units. But they've already attracted a substantial population. Oliver believes around 30,000 to 40,000 bees currently nestle together in his hives. And yes, they are producing honey

Oliver says he wants to implement a honey extraction system. That opens the possibility of one day selling honey made by bees in a 3D printed hive.

https://bit.ly/3U1xQGg

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Mayo Clinic Concept: Remote Flight Physicals

As the field of AMEs continues to thin and demand for FAA medical certification rises, kiosk-based flight physicals could make a lot of sense.

That's a screen grab from the MedWand Solutions Virtual Care Clinic software displaying real-time data from an electronic stethoscope.

Mayo Clinic has played an important role in aviation medical certification since 1920, when several of the Clinic's docs served as the first pilot medical examiners for the Civil Aeronautics Board, the precursor to the FAA. Contributions include developing the first high-altitude pressure chamber in North America, a simulator for training World War II pilots, plus the BLB supplemental oxygen mask and the A-14 mask and bailout bottl

Today a large focus of the Mayo Clinic's Aerospace Medicine division (in conjunction with the FAA) is developing a plan for populating the field with virtual examination kiosks, with the eventual goal of completing remote flight physicals. It's a logical remedy to a growing problem. In early 2025 there were only fewer than 2200 designated AMEs—down from over 9600 in not so distant years.

A device from California-based MedWand Solutions has a multitude of clinical-grade vital sign measuring capabilities, plus an interface with MedWand's Virtual Care Clinic software. The device monitors core temperature, blood oxygen saturation and pulse rate. The device can record medically relevant heart, lung and abdominal sounds.

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How Media Competition Fuels The Spread of Misinformation

ispionline

Controlling information provides a substantial advantage in political and economic spheres, driving media corporations and political elites into fierce competition.

Contrary to the widespread belief that social media is the primary source of misinformation, research indicates that online fake news reaches only a limited

audience. In contrast, the widespread exposure and internalization of misinformation among the general population underscore the substantial role of public figures and traditional media channels in its dissemination.

Several factors contribute to this issue, including the inherent news value of fake news, which tends to attract attention. Beyond its harmful societal consequences, misinformation also poses a strategic risk to its propagators. Over time, as the public becomes increasingly wary of potential deceit, its response to the information shared by low-credibility sources diminishes. Growing skepticism can lead many to perceive the news source as unreliable, resulting in a gradual loss of interest in its reporting.

https://bit.ly/3I5osyT

Nothing new here except for the validation.

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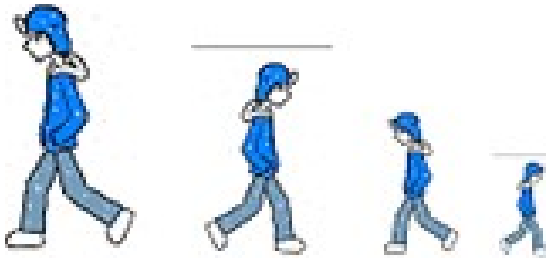
My Walking Thoughts



For Sunday July 20 2025

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Burner Time in the F-11

Well, my taking the Grumman Tiger to 1.2 mach may not have been enough to make Chuck Yeager eat his heart out, but I may have seen some of those cinematic atmospheric distortions we were introduced to several years later in the movie, The Right Stuff. But up until the super cruise feature of the F-22 Raptor came into play, messing around in the supersonic range for any amount of time was a quick way to fuel exhaustion, so reluctantly I stuck to the script and returned to subsonic flight to explore the aircraft's maneuvering characteristics, finding in the process why the Tiger was so cherished by the Blue Angels.

The term "harmonized" describes the bird's response to various inputs to its flight controls, and it was here the F-11 reached what in my mind was the peak of perfection. The response to inputs throughout the entire airspeed range was so precise in the relationship between stick displacement and aircraft performance that I felt as if I could thread a needle out there in the sky… no pricked finger in the process. It was as if the bird knew exactly what you wanted to do and did it for you. I don't know about these late model fly-by-wire wonder machines, but I'll bet they'd suffer by comparison with the Tiger.

In fact so enthralled was I by the aircraft's maneuverability that it was with a start I realized I was rapidly approaching 'Bingo' fuel… time to head back to the field for a couple of touch-and-goes and a full stop landing.

Of all the 'precautions' I had been given during ground school and my preflight briefing -- the one that stood out above all others had to do with why never… never-ever… to allow the bird to become slow and underpowered in the landing pattern.

Why? Two reasons:

First of all, you needed only to look at how small the little wings were compared to the mass of the rest of the aircraft to understand you were already balanced on a knife edge. But the second factor, having to do with the performance of the J-65 powerplant, produced one undesirable characteristic… it was agonizingly slow to accelerate from 92% rpm (~50% power) to 100% rpm (full power).

Thankfully I heeded the warnings and locked in the approach speed and power setting as early as possible, thereafter having to make minor corrections until touchdown, but I remember all too painfully watching a fellow student get behind the power curve, slow to what appeared to be nearly a dead stop on short final, and descend nearly vertically the last 50 or so feet to the hardest landing I have ever seen. Amazingly the bird lived to fly again another day, but not before tech reps and mechanics scoured the undercarriage for defects.

Back in the ready room I awaited a tongue lashing from my instructor about my fuel wasting afterburner climb, but it anything he seemed impressed, so my familiarization flight with the Tiger was over. Thereafter we – I, my two student wingmen, and the instructor would get down to business.

I promise you won't want to miss the fun.

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Ps. Last week I said I would explain the "zero delay lanyard" but I didn't, so here it is.

When you buckled into the Tiger, one of the things you did was hook yourself up to a cord that connected to the seat's separation delay mechanism. This way if you had to eject right after takeoff, the delay would be eliminated and the full sequence would happen immediately, giving you a higher chance of survival.

Once safely airborne where you were now subject to high speed forces in an ejection, you disconnected the lanyard, enabling the delay mechanism to hold you fast to the seat for two seconds, allowing for the reduction to the parachute's opening shock.

While the Tiger's two-seat predecessor the F9F-T Cougar received upgraded Martin-Baker zero-zero seats, the outmoded Grumman seat was retained in the Tiger since the bird was pretty much a lame duck in the carrier navy.