

Ode to E Pluribus Unum for Sunday December 8 2024

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Winter and Summer on a Little Planet



Image Credit & Copyright: Camille Niel

Winter and summer appear to come on a single night to this stunning little planet. It's planet Earth of course.

The digitally mapped, nadir centered panorama covers 360x180 degrees and is composed of frames recorded during January and July from the Col du Galibier in the French Alps.

Stars and nebulae of the northern winter (bottom) and summer Milky Way form the complete arcs traversing the rugged, curved horizon. Cars driving along on the road during a summer night illuminate the 2,642 meter high mountain pass, but snow makes access difficult during winter months except by serious ski touring.

Cycling fans will recognize the Col du Galibier as one of the most famous climbs in planet Earth's Tour de France.

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Notre Dame—Before It Reopens Its Doors to the Public



Five years after a catastrophic fire, Paris's beloved cathedral will open to great fanfare. Nat Geo got exclusive access to witness how an army of architects and artisans rebuilt the church back to its sacred splendor.

The fire that came close to destroying the Cathedral of Notre Dame in Paris started under the roof, in the ancient wooden attic, near the base of the spire. It began a little after 6 p.m. on April 15, 2019—the Monday of Holy Week, six days before Easter. Inside the church, a Mass was under way. Disbelief gave way to shock: Notre Dame was really burning.

At the top of the vaulted ceiling, a gilt angel adorns the oculus, a stone ring. During the blaze,

*tremendous damage was caused when the falling spire pierced the ceiling. From the scaffolding shown here, workers closed the vast opening and rebuilt the oculus.
Photographs by Tomas van Houtryve*

Favicon for www.nationalgeographic.com

<https://bit.ly/4f1Ddx7>

First Look Inside Rebuilt Notre-Dame

Macron calls its reopening a 'shock of hope'



Emmanuel Macron expressing his joy at the prospect of seeing the faithful and visitors return to Notre-Dame Cathedral.

Reuters

You won't have to wait long to step inside Notre-Dame Cathedral yourself - it'll open its doors to the public on 7 December

<https://www.bbc.com/news/live/cvg52lgeglxt>

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**Sometimes someone
unexpected comes into
your life outta nowhere,
makes your heart race
and changes you
forever...**

**We call these
people cops.**

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Is the Key to Scaring Sharks the Worst Thing About Driving?



the hustle

Ninety-one people were bitten by sharks in 2023, but biologist Dr. Laura Ryan may have a way to drop that number: lights!

Outside of a *Jaws: The Revenge* situation, sharks generally attack people when they confuse something unappetizing, like a surfer, for something tasty, like a seal. Ryan's work involves arranging LEDs on seal-shaped decoys to see if sharks are less likely to attack, per *The Times*.

- Lit decoys were attacked less often than unlit control decoys.
- The brightest lights resulted in zero incidents.

Ryan's team is now developing anti-shark lighting arrays for surfers.

But you don't have to be a shark...

... to hate having lights shined in your eyes. You could also be a motorist driving at night.

You've likely noticed car headlights getting brighter over the last decade or so, which is due to bluer LED lights on new cars.

New LED headlights are only as bright as old halogen headlights, but the system used to measure them doesn't account for the brighter blue tint.

The human eye can clearly perceive the difference, which is why they're so unpopular.

What's the solution?

"Adaptive driving beam" headlights that automatically adjust around other vehicles.

They're available almost everywhere but the US, where outdated regulations have made it easier for automakers to just install bright LEDs and call it a day.

This raises the question: Are the sharks getting confused, or do they just hate those damn LEDs shined in their lifeless, black eyes? Sharks aren't so different from us after all — Who doesn't love a tasty seal?

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Debate May Help AI Models Converge on Truth

Letting AI systems argue with each other may help expose when a large language model has made mistakes.



Nash Weerasekera for Quanta Magazine

<https://bit.ly/4i109zg>

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NYU Langone's World-First Fully Robotic Double Lung Transplant



Cheryl Mehrkar, who received the world's first fully robotic double lung transplant, with Dr. Stephanie H. Chang, surgical director of the Lung Transplant Program for the NYU Langone Transplant Institute, who led the minimally invasive procedure
Credit: NYU Langone Staff

A surgical team at NYU Langone Health has performed the first fully robotic double lung transplant in the world. The procedure marks a breakthrough in the potential of robotic surgery and minimally invasive patient care, making NYU Langone the new leader in robotic transplant surgery around the globe.

<https://bit.ly/4fZeLOB>

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**The older
I get the
earlier it
gets late.**

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Supercharged Arduin V8-Powered '32 Ford Roadster 5-Speed



Bringatrailer.com

This '32 Ford is a steel-bodied, full-fendered roadster that is powered by a supercharged, all-aluminum 294ci stroker V8 equipped with hemispherical Arduin overhead-valve heads and Hilborn electronic fuel injection.

Founded by brothers Zora and Yura Arkus-Dontov, Ardun (a contraction of ARkus-DUNtov) began producing overhead-valve conversion kits for the Ford flathead V8 in 1947.. Reproduction kits were first offered by Don Orosco and later by Don Ferguson, who utilized high-grade Alcoa 356 aluminum and also started fabricating compatible aluminum engine blocks.

<https://bit.ly/4g8q72p>



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**The wife said: "Here's \$20, get the dog a warm jacket. If there is any money left over you can get yourself a beer".
And here is the result.**



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In the Red Sea, Turtles Map Seagrass Better Than Satellites



Green turtles feed on seagrass, which provides habitat for numerous animals and can sequester significant amounts of carbon.

luciano candisani/minden pictures

In the warm, shallow waters of the Red Sea, hungry sea turtles are constantly on the lookout for lush, carbon-storing meadows of seagrass. According to research published in Proceedings of the Royal Society B, they can also act like underwater bloodhounds, helping scientists to locate these important but uncommon habitats, which are increasingly under threat from coastal development, agricultural runoff, and trawling of the seafloor.

<https://bit.ly/3CK26jM>

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'Blackbird': A Flying Taxi That Spins and Moves in Any Direction

CycloTech's all-electric flying vehicle 'Blackbird' is a blueprint for an air taxi that uses motors similar to those used for tug boats.



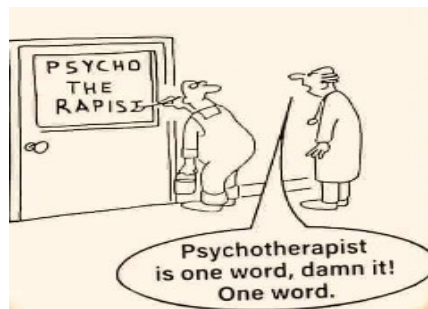
(Image credit: CycloTech)

The CycloRotors will greatly enhance the BlackBird demonstrator's maneuverability, enabling it to move or spin in any direction while airborne and also perform sharp corrections to its trajectory with added precision, CycloTech representatives said in the statement. This can also improve the comfort and safety of passengers on any flight in windy or other inclement weather conditions, they added.

<https://youtu.be/hqDNSV7kqnk>

<https://youtu.be/YycNMXIyyk8>

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QUANTUM THOUGHTS

Sandboxaq's Quantum GPS Backup

US Firm Develops AI-Enabled, Anti-GPS Jamming Navigation System



Military pilots rely heavily on GPS for navigation.

Photo: Lance Cpl. Cody J. Ohira/US Marine Corps

American tech startup SandboxAQ has launched a new artificial intelligence (AI)-enabled navigation system it said can address persistent GPS jamming.

Called the AQNav, the technology leverages powerful quantum sensors to gather data from the Earth's crustal magnetic field.

This allows the system to provide real-time navigation in areas where GPS signals are denied or unavailable.

The AQNav also uses AI algorithms to eliminate potential interferences and make the entire system impenetrable to jamming and spoofing.

"GPS is easy to jam and spoof," SandboxAQ manager Luca Ferrara said. "When planes and ships lose GPS in motion and switch over to inertial navigation systems, the vehicle drifts and soon finds itself off course."

"The Earth's crustal magnetic field provides a persistent, passive external signal, making it a highly reliable data source for navigation."

Potential Defense Application

Though originally designed for commercial use, the AQNav can be integrated into various sea, land, and air military platforms.

It could also be potentially used to improve autonomous vehicle control or aid in underground/underwater operations where GPS signals are not available.

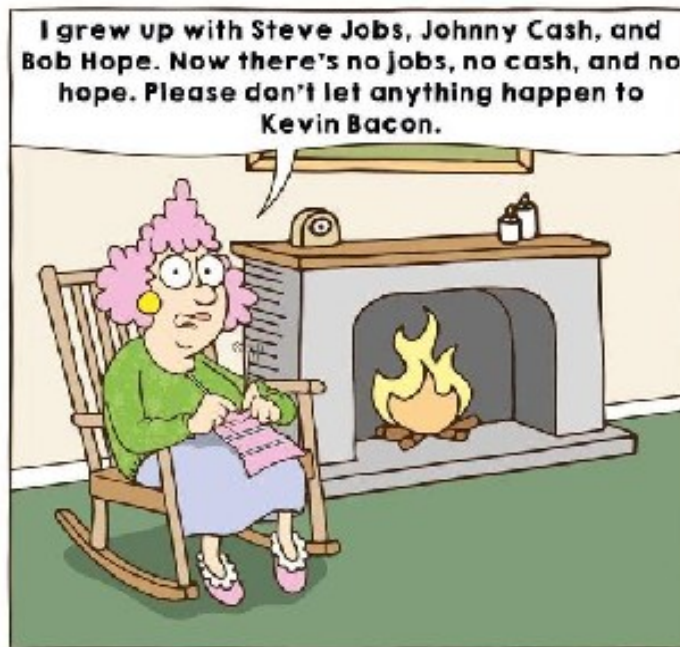
SandboxAQ said it understands the importance of providing an alternative navigation system in modern warfare, as GPS is likely to be the first point of attack for any adversary in war.

John Richardson, a former US Navy admiral who now works with the California-based firm, said the ongoing conflicts in Europe and the Middle East have highlighted the growing threat of GPS disruption.

“Systems like AQNav are absolutely essential to address this critical vulnerability,” he stressed. “We must mature these systems that allow us to maintain precision in a GPS-denied environment. It’s fundamental to the way we conduct war.”

The AQNav has logged over 200 flight hours so far from flight tests conducted by the US Air Force, Boeing, and Airbus.

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Why Your Favorite Catalogs Are Smaller This Holiday Season

Honey, they shrunk the catalogs.



AP photo Robert F Bukaty

While retailers hope to go big this holiday season, customers may notice that the printed gift guides arriving in their mailboxes are smaller.

Many of the millions of catalogs getting sent to U.S. homes were indeed scaled down to save on postage and paper, resulting in pint-sized editions. Lands' End, Duluth Trading Company and Hammacher Schlemmer are among gift purveyors using smaller editions. Some retailers are saving even more money with postcards.

But don't expect catalogs to go the way of dinosaurs yet. Defying predictions of doom, they have managed to remain relevant in the e-commerce era. Retail companies found that could treat catalogs with fewer pages as a marketing tool and include QR and promo codes to entice customers to browse online and complete a purchase.

<https://bit.ly/3VicEgg>

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'Unbreakable' Quantum Communication Closer to Reality

Scientists build a new light source for quantum communications by combining existing technologies together to create a stronger and more robust quantum signal.



A future quantum internet could beam data at much longer distances than previously thought

possible thanks to an exceptionally bright light source made by combining existing technologies in a new way.

(Image credit: Pitris/Getty Images)

Scientists have created an "exceptionally bright" light source that can generate quantum-entangled photons (particles of light) which could be used to securely transmit data in a future high-speed quantum communications network.

A future quantum internet could transmit information using pairs of entangled photons — meaning the particles share information over time and space regardless of distance. Based on the weird laws of quantum mechanics, information encoded into these entangled photons can be transferred at high speeds while their "quantum coherence" — a state in which the particles are entangled — ensures the data cannot be intercepted.

<https://bit.ly/3XiUGMa>

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Chords & Riffs

Diane Bish; First Lady of the Organ (1941-)



Oklahoman.com

The American organist, composer, conductor, as well as executive producer and host of The Joy of Music television series, she performs at concerts throughout North America and Europe. Bish also continues to tape episodes for her television series by visiting notable organs throughout the world.

In college, she studied under Mildred Andrews. Later, she was a recipient of Fulbright and French government grants for study in Amsterdam with Gustav Leonhardt, and in Paris with Nadia Boulanger and Marie-Claire Alain.

Bish has been on television for most of her career. Her first regular appearances were on the Coral Ridge Hour, a weekly television series that was produced at Coral Ridge Presbyterian Church. In 1982, she began recording The Joy of Music. The idea for what became The Joy of Music began when Bish listened to recordings of E. Power Biggs playing famous European organs. When she was in high school, she thought it would be nice for listeners to be able to see the organs and their surroundings as well as hear them.

For more detail: https://en.wikipedia.org/wiki/Diane_Bish

Spiritual Journey https://youtu.be/ytWWPSPuX_c

Corelli Canzona Septimi Toni Diane Bish & Dallas Brass <https://youtu.be/DGtO8Ijskpw>

Bach, Gigue Fugue [BWV 577]

https://youtu.be/u_Xp3rORvPU?list=PLE0E4F1D26BA8FEEEE&t=1

Mendelssohn, Nocturne From Midsummer Night's Dream

<https://youtu.be/4dNiIMWXBOI?list=PLE0E4F1D26BA8FEEEE>

Bach, Toccata & Fugue In D Minor [BWV 565] https://youtu.be/_8qPGcL-L3o?list=PLE0E4F1D26BA8FEEEE&t=4

Widor Toccata From Symphony No. 5 <https://youtu.be/tQ-ziYBi7U8?list=PLE0E4F1D26BA8FEEEE&t=4>

Léon Boëllmann, Toccata From Suite Gothique

<https://youtu.be/p8DucV0WrOo?list=PLE0E4F1D26BA8FEEEE&t=2>

Purcell, Trumpet Processional

https://youtu.be/DwWvJDfO_GQ?list=PLE0E4F1D26BA8FEEEE&t=6

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Giant Redheaded Centipedes Are Venom Mixologists

The arthropods can tailor their toxins depending on whether they are hunting prey or defending themselves from predators, according to a new study.



Scolopendra morsitans, or the redheaded centipede, and its sharp, venom-delivering pincers. Credit...Schendel et al., Nature Ecology and Evolution 2024

A giant centipede's many wriggling legs might be creepy. But the pair of legs not used for walking may be the most frightening.

Arthropods, just like spiders, giant centipedes use these tools to hunt prey — everything from crickets to snakes. But they also make for a juicy snack for other animals, forcing them to defend themselves with the same poisonous pincers.

In a [paper](#) published this month in the journal Nature Ecology & Evolution, scientists revealed that the redheaded centipede — a species of giant centipede roughly the length of a ballpoint pen — is a toxic mixologist, capable of tailoring its venom recipe depending on whether it's attacking prey or defending itself. The toxins reserved for the centipedes' predators appear designed to cause pain, the researchers found.

<https://bit.ly/3D6vqAU>

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Go Beyond Treating Plastic as Just a Litter Problem

India's problem with plastics pollution is emblematic of that felt elsewhere



DeccanHerald

It is symptomatic of the manner in which we deal with plastic pollution in public policy—a litter problem. We have reduced the plastic crisis to matters of cleanliness, as reflected in the Single Use Plastic Ban's narrow focus on post-consumer waste ...

Clean-ups are a façade of environmental consciousness, distractions from real solutions. It is symptomatic of the manner in which we deal with plastic pollution in public policy—a litter problem.

A survey conducted among over 2,000 street vendors shows an acute awareness of the plastic crisis being a supply-side problem.

<https://bit.ly/3V6j1TM>

India's plight is the same as that felt here and public policy is at its heart.

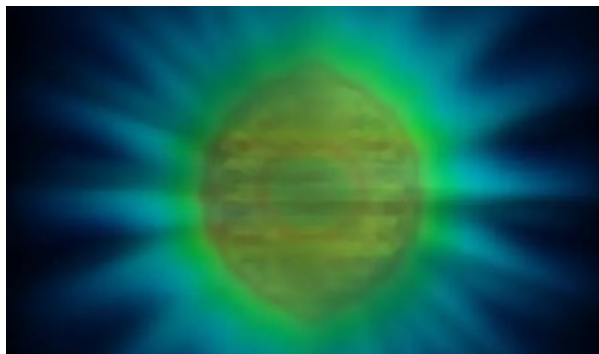
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Computer Model Reveals Shape of a Single Photon for First Time

Researchers have modeled the interactions between particles of light and matter.



Here is the shape of the photon that comes out of the calculations.

Image credit: Benjamin Yuen

A photon is a particle of light. Light (and matter) exists both as a particle and as a wave. This duality discovery was the solution to millennia of debate, when it became obvious from experiments that light does propagate as a wave but can also be described by distinct packets of energy, which is what we call photons.

Researchers from the University of Birmingham, UK, have developed an intriguing computer model to understand how light and matter interact. As tasks go, it is exceptionally hard, but the team was able to develop a strategy to simplify the problem. In doing so, they were also able to create something peculiar: an image representing the precise shape of a single photon.

<https://bit.ly/40WEv9B>

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Starship Success, Booster Ditches

SpaceX said it learned a lot from Test 6 of the Starship system.



SpaceX

After the stunning success of the fifth test, with the successful capture of the booster on the launch tower and soft landing of Starship in the Indian Ocean, SpaceX officials were managing expectations from Tuesday's launch. The company stripped 1200 heat-resistant tiles from Starship to "push it to its limits" during the reentry and reveal vulnerable areas of the exterior. It all survived but one maneuvering flap did have some burn-through.

As for the booster, an anomaly of some sort triggered the abort system to send the rocket offshore instead of back to the launch tower. The company said that while the booster was lost, the ditching proved the abort system worked as planned.

<https://youtu.be/Hj4tvltSZZo>

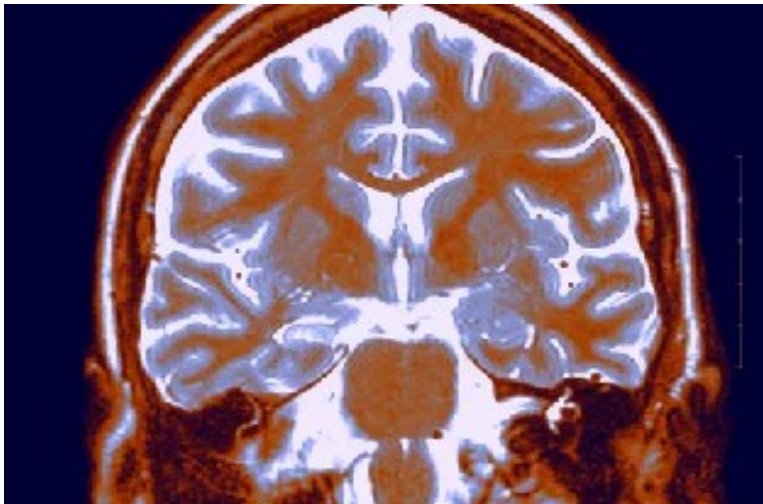
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Hormonal Cycle and Men's Shrinking Brains

A month-long study of a man's brain reveals that its volume consistently shrinks over the course of each day and then resets overnight.



A 26-year-old underwent 40 brain scans in a month as part of a new study of the male brain. (This scan is a stock photo and not from the new study.) (Image credit: By BSIP/UIG Via Getty Images)

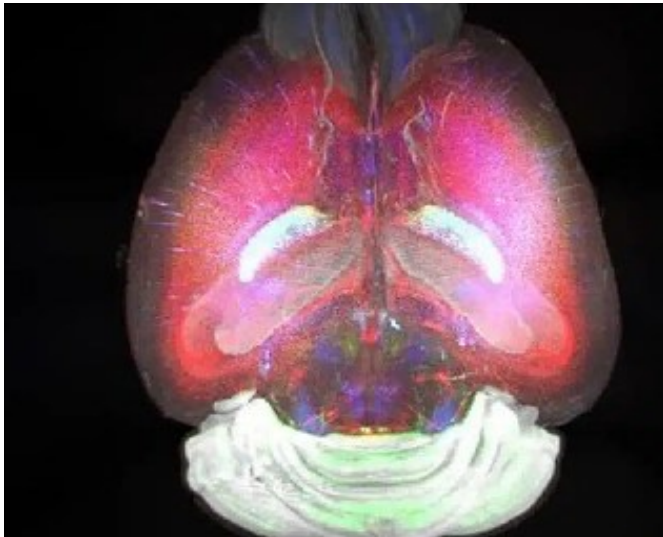
The new study revealed that, throughout the day, the subject's overall brain volume decreased, as did the thickness of the cortex, the brain's outer layer. The volume of gray matter, which contains the cell bodies of neurons and the connections between them, fell by an average of about 0.6%.

<https://bit.ly/4i0oeGx>

I've known this for years, only in my case the shrinkage is more like 60%

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How to See RNAs in an Entire Mouse Brain, No Slicing Required



Three different RNAs (red, green, and blue) as well as cell nuclei (white) are visible throughout this 8-week-old mouse brain.

Kanatani et al. 2024/Science

For years, the technologies that told scientists what is going on in cells—like RNA sequencing to spot the expression of genes—couldn't tell them where these things were happening. Techniques slowly improved, and researchers could tag RNA and other molecules inside of cells, but they were limited to using very thin slices of tissue. Building that out to three dimensions became possible, but at first it was incredibly time consuming to analyze and re-assemble data from countless slices of tissue. Now, researchers have developed a cutting edge tissue preparation and microscopy technique for [mapping RNA in an entire mouse brain](#), no cuts required.

The secret? A tissue-clearing method that makes the brain matter transparent enough to reveal fluorescent colored probes that stick to specific RNAs inside cells.

<https://bit.ly/497zpt5>

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What Happens if You Deep Fry a Frozen Turkey?

It's the ultimate setup for a Thanksgiving Day disaster. The physics of water and its solid, liquid, and gas phases compels us not to do it.

What happens if you rapidly drop a turkey into a deep fryer with very hot oil within it? The same thing that happens if you even gently lower a frozen turkey into it: oil spilling over the sides and bursting into flames when it hits the heating element below.



The instant the turkey hits the oil, the solid ice has to begin melting before it can become water. Once the ice melts, you'll have exactly the same situation as the earlier scenario: the water, surrounded by large amounts of ultra-hot oil, will heat up rapidly, boiling and turning into water vapor (steam) almost instantly.

Once the first splashes of oil go over the side, some of those small droplets will unavoidably land on or near the heating element/open flame. A small droplet will heat up extremely quickly, igniting and bursting into flame itself. With larger amounts of oil nearby, the flame will travel more quickly through

the oil than the force of gravity will accelerate that oil down toward the ground; as a result, neighboring droplets will catch fire, resulting in what could best be described as an upward-climbing fireball.

<https://bit.ly/3ZfhIVa>

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**If you get a LOAN at a bank, you'll be paying it back for 30 yrs.
If you ROB a bank, you'll be out in 10 yrs.
Follow me for more financial advice**

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Red Sketon's 1947 Thanksgiving Wish



pinterest

<https://youtu.be/KAitGWxsYVU>

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Protecting Grasslands and Wildlife with "Invisible" Fences



Photo by Louise Johns / PERC

Many are on the fence about, well, fences. Here's why: When fences are put up around farms or ranches, they can cause harm to grasslands and native wildlife, including endangered species. So to get the benefits of boundaries without many of the downsides, farmers in Montana are trying "invisible" fencing, also known as virtual fencing.

"Nothing's changed with barbed wire fencing in 150 years; nothing's really changed with fencing on ranches for the last 150 years, until this new technology — virtual fencing — came around," Brian Yablonski, CEO of the Property and Environment Research Center, told NBC Montana.

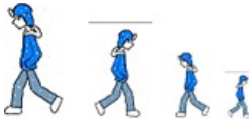
While the barrier works like a fence, it doesn't look like one. Instead, cattle wear GPS-enabled collars that emit a sound if an animal nears a boundary. This keeps livestock in

one place while removing barriers to wildlife migration and minimizing damage to the land.

The [Property and Environment Research Center](#) has allocated \$250,000 to be dispersed to applicants who want to embrace the new tool. "The purpose of the fund is to try to advance this pioneering, innovative technology in a way that works not only for the rancher but works for conservation outcomes as well," said Yablonski. "

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My Walking Thoughts



For Sunday December 8 2024

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To Heck with Ground School, Let's Get Down to Business.

That's what I thought as November gave way to December, and the conclusion of my ground school experience. I was as fit and ready for my first light in the Cougar as I would ever be... but for one little detail. As there was no war in progress or even in the offing, NAS Kingsville shut down its training operations from December 19th to January 2nd, leaving me with nothing to do but go home and visit family friends in Los Angeles... my first venture to the old homestead since I left for Quantico more than a year before.

And you know what?

Everyone I knew had changed... I mean mother, sister, friends... all had really changed. So much so in fact that I had difficulty recognizing where they were coming from.

I'd say something about 'knots' and they'd look at their shoes. I'd try and insert the concept of G's into the conversation, and they'd think I was saying 'geez.' Never mind introducing flaperons or Vickers pumps as worthy discussion topics. I had no choice but to face the fact that my theretofore family members and buddies just weren't up to snuff. They'd changed.

As I prepared to hit the road back to Kingsville, one of my longest-term friends allowed as he was really impressed how much I had changed—"No longer a stupid dolt" was how he put it—which surprised the heck out of me. It wasn't the 'stupid dolt' thing that got to me, it was the thought that maybe I was the one who had changed? What a hoot.'

But as I was making my way through the empty wilds of West Texas, I realized that for the last year I had done nothing but think about flying ... every single day... every single night... Almost nothing else.

Huh. Little wonder everyone else had changed so much I stoically maintained, unless... "Naw, I'm still the good old stupid dolt I've always been."

I received the following from Patrick Healey, who flew F4D Skyrajs for the Marines before embarking on a very successful business career. Said he:

Your Ode description of the F9F-8 Hydraulic system brought back memories of an accident I had in advanced training.

It was an extremely hot day in Beeville when I took off in a flight of four students plus instructor for a bombing mission. Just as I was raising flaps at 500 feet the engine blew up.

On fire, I lowered nose to maintain flying speed and opened canopy to get rid of a thick column of smoke. Thankfully, it worked (guess the engine still had enough RPM) to keep the hydraulics working.

I landed straight ahead in the Texas mesquite bushes (no flaps or gear) and slithered several hundred yards before coming to an abrupt stop. Quickly I unstrapped, jumped out, and ran for roughly 12 feet when I was snapped back by the seat pack lanyard., which I unhooked while mentally smiling at my mistake.

The helo showed up a few minutes later and I was given a small bottle of medicinal brandy and then taken back to the base medical facility for observation and to write a report (still have it).

The engine was very tired and a couple of inducer blades had given way (metal fatigue).

A total loss for the Navy but Healy survived.

Three thoughts here:

1. Had the engine seized or had time to wind down, the magic Vickers hydraulic pump would have been out of business... unable to provide hydraulic pressure to operate the flight controls or open the canopy.
2. While the F9F-8 had the wonderful Martin Baker ejection seat, its use while in a descent below 500 feet would have been far chancier than flying the 'Grumman Ironworks' machine to the ground as he did.

3. I'm amazed he made it 12 feet from the bird with the lanyard still attached. When strapping into the aircraft, you attached the seat pack lanyard to your torso harness so if you had to eject, all your emergency gear would go with you.

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