

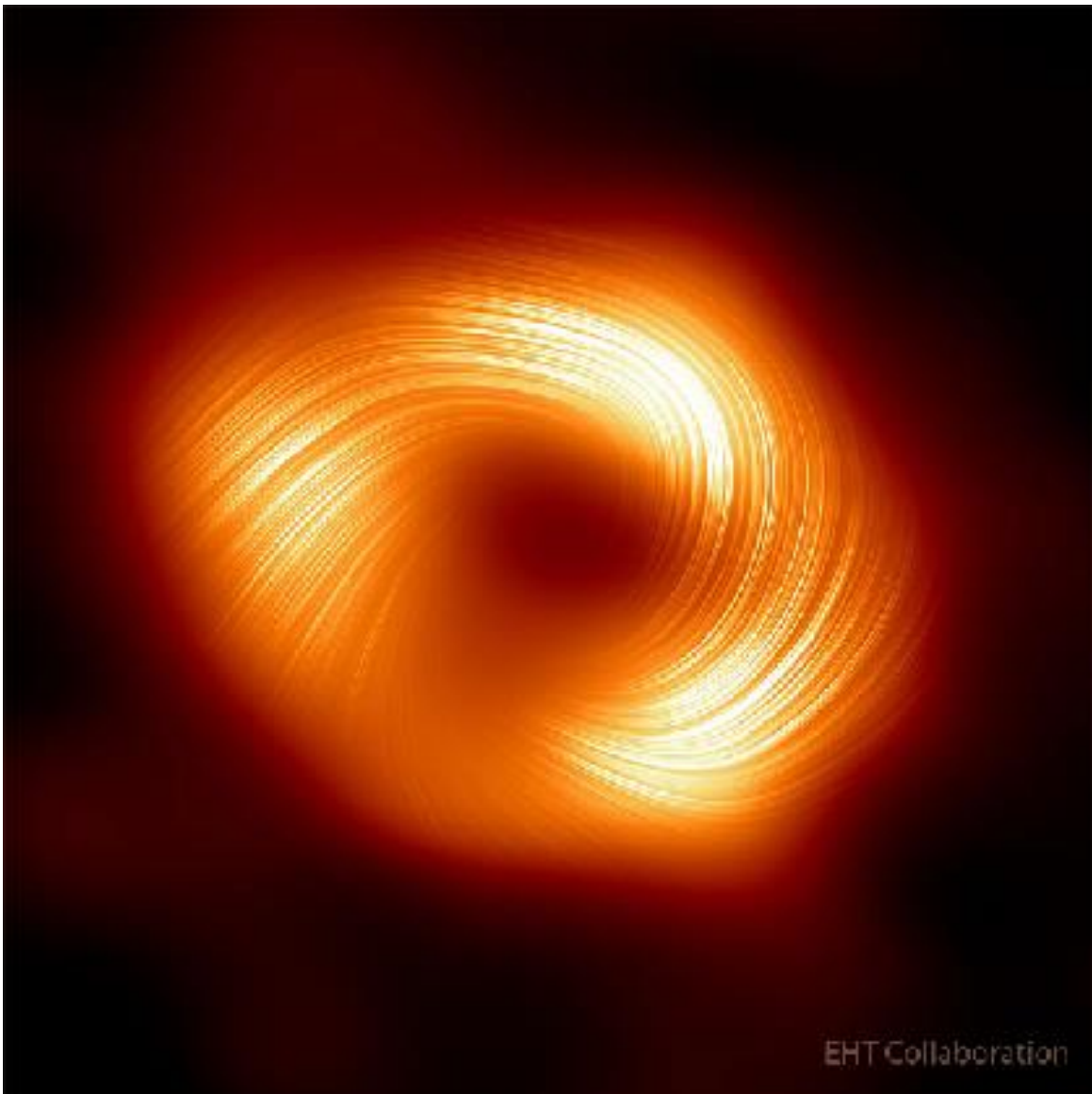
Ode to E Pluribus Unum for Sunday April 21 2024

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Swirling Magnetic Field around Our Galaxy's Central Black Hole



EHT Collaboration

Image Credit: EHT Collaboration

What's happening to the big black hole in the center of our galaxy? It is sucking in matter from a swirling disk -- a disk that is magnetized, it has now been confirmed.

Specifically, the black hole's accretion disk has recently been seen to emit polarized light, radiation frequently associated with a magnetized source.

Pictured here is a close-up of Sgr A*, our Galaxy's central black hole, taken by radio telescopes around the world participating in the Event Horizon Telescope (EHT) Collaboration.

Superposed are illustrative curved lines indicating polarized light likely emitted from swirling magnetized gas that will soon fall into the 4+ million mass central black hole. The central part of this image is likely dark because little light-emitting gas is visible between us and the dark event horizon of the black hole.

Continued EHT monitoring of this and M87's central black hole may yield new clues about the gravity of black holes and how infalling matter creates disks and jets.

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NASA Spacecraft Gets Extremely Close to Io's Volcanic World

Jupiter's moon is a tortured land teeming with lava.



mashable

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

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One of the World's Biggest 3D-Printed Objects



Nane Steinhoff

DEEP recently announced its ambition for a permanent human presence under the oceans from 2027 by installing sub-sea stations that will enable researchers to operate continuously down to 200 metres. We've been invited to the DEEP headquarters near Bristol in England to find out more about the company's current undertakings, see the progress of the build for ourselves, and interview some of the core people behind the ambitious undertaking.

<https://bit.ly/3TNx1By>

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How Do Leafcutter Ants Cut Leaves Off of Trees?



fineartamerica.com

Leafcutter ants profoundly affect their surroundings. By pruning vegetation, they stimulate new plant growth, and, by gardening their fungal food, they enrich the soil.

<https://youtu.be/yqdD4lc20Wk?t=1>

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DoorDash Adds Drone Delivery to Its Menu



DoorDash is partnering with Alphabet's Wing to delivery food from Wendy's, starting in Christianburg, Va.

Photo courtesy of Wing

DoorDash's delivery fleet now includes drones, which means your takeout order could arrive faster and with less environmental impact.

Why it matters: Drone delivery is expanding rapidly in the U.S., satisfying Americans' thirst for instant gratification while reducing road congestion and pollution.

Driving the news: DoorDash is partnering with Alphabet's Wing to begin drone delivery of Wendy's burgers and fries in Christiansburg, Virginia, where Wing kicked off its U.S. commercialization efforts in 2019.

The new service follows a pilot program between the two companies in Australia, marking the first time that Wing integrated its drone delivery service within another marketplace.

How it works: Customers with an eligible address will be able to order DoorDash from the Wendy's restaurant at 2355 N. Franklin Street.

When they get to the DoorDash checkout page, they'll have the option to have their meal delivered via drone.

Drone delivery will be free, at least for now.

What they're saying: "At DoorDash, we are committed to advancing last-mile logistics by building a multi-modal delivery platform that serves all sides of our marketplace," Harrison Shih, Senior Director of DoorDash Labs, said in a statement.

"We're optimistic about the value drone delivery will bring to our platform as we work to offer more efficient, sustainable, and convenient delivery options for consumers."

The bottom line: Drone delivery is rapidly becoming mainstream, though there are still kinks to be worked out.

Joann Muller for Axios

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Home Depot Is Selling Tiny Homes for \$63,000



[Source Photo: Well Done Homes]

Home Depot is following in the footsteps of Sears, which sold over 70,000 mail-order homes between 1908 and 1942.

Dubbed as a "DIY Assembly Office Guest House ADU Rental Tiny Home," the package includes necessary components delivered in parts, comprising the steel frame, siding, roof materials, exterior doors, and windows. Delivery is slated as soon as May 13.

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

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NFL Owners Approve Rule That Bans the Hip-Drop Tackle



msn.com

The NFL Players Association has adamantly opposed the rule.

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

What is it, and what's next? How about 'two hands below the waist' touch?

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Oldest Video Ever Recorded – 1874?!



youtube

These are the oldest videos ever recorded in the world. Some of these videos are the "Roundhay Garden Scene", "Man walking around a corner", "a trip through new york city in 1911", "Laborers in Victorian England, 1901" which were recorded by Thomas Edison, Louise Le Prince, and the Lumiere Brothers among many others who are considered pioneers in the world of motion cameras.

<https://youtu.be/VC-yTYyE2w0?t=36>

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Last Two Marine Harrier Pilots Get Their Wings



militaryaerospace.com

The Marines have trained their last two AV-8 Harrier II pilots as the Corps begins the final phaseout of the VTOL jet. "The significance of the last replacement pilot training flight in the Harrier community is that it is the beginning of the end for us as a community," said Capt. Joshua Corbett, who with Capt. Sven Jorgensen who flew their final training flights at Marine Corps Air Station (MCAS) Cherry Point, North Carolina, last Friday.

https://youtu.be/C_tIOShGYZc?t=1

"The Harrier, more than many aircraft that I have come across, elicits an emotional response. For members of the public, members of the aviation community, members of the Marine community, and especially members of the Harrier pilot community, it's bittersweet. All good things have to come to an end, and it's our turn soon, but not yet."

The Harrier, an adaptation of the British airplane of the same name, will be replaced by the F-35B, which has a vertical thrust fan midships and pivoting tail nozzle to aid with extremely short takeoffs and allow vertical landings. The transition will be complete in September of 2026. The Harrier has been in service for 40 years and is known for its ruggedness and versatility. Most recently it has been credited with numerous drone kills in the Red Sea while protecting merchant shipping from Houthi rebel attacks.

By Russ Niles for AVweb

No more viffing? What a loss.

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How Hospital Design Impacts Patient Treatment and Recovery



mathematica.org

BU's Diana C. Anderson is a "dochitect"—a medical doctor and an architect—who says everything in a hospital's design, from the location of a room to the patterns on the floor, can shape how patients heal

The success of your care could also come down to something much more mundane than medical or technical wizardry: the location of your room. Land in an out-of-sight intensive care room and your chances of bouncing back tumble versus getting placed opposite the nursing station—you might even be more likely to die. Other aspects of your hospital room's design—the position of the bed, the location of the sink, whether there's a window—may also shape your recovery.

<https://bit.ly/49e24er>

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Look what happens when you cut down too many trees! 😊



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A Restaurant Where Robots Cook the Food

CaliExpress by Flippy's menu is simple — burgers and fries — but it's a little different from your standard fast-casual affair in that its staff includes two robots.



restauranttechnologynews

CaliExpress by Flippy serves as a test kitchen for Miso Robotics, which builds robots for use in restaurants, currently including White Castle and Jack in the Box.

How it works

Customers order at a kiosk powered by [PopID](#) — a biometric payment startup that lets users upload a selfie, then pay, access loyalty rewards, and more using their face.

Those orders are received by the kitchen, where two robots get to work:

[Miso Robotics' Flippy](#) is essentially a fry cook. At CaliExpress, it makes up to 150 pounds of fries per hour, but it's capable of other recipes — chicken tenders, onion rings, mozzarella sticks, etc.

Another robot, made by [Cucina](#), grinds wagyu beef, then grills up to six patties at a time.

A human employee salts the fries, grills onions, assembles the burger, and serves the orders. They're also responsible for "managing" the robots.

Elsewhere in the restaurant, other Miso Robotics bots are on display, including a pair of earlier Flippy bots and Chippy, a robot created to fry and season Chipotle's tortilla chips.

It's a fun novelty to watch the bots at work, and the food comes out just like you'd expect — a standard burger and fries, on par with similar fast-casual restaurants.

Where else are robots in use?

You'll find them at various fast-food and fast-casual chains, including:

Chipotle, where a bot from robotics startup [Hyphen](#) makes up to 180 bowls an hour, ~6x faster than human employees.

Sweetgreen's [Infinite Kitchen](#) restaurants, where bots make 400-500 dishes per hour, 50% more compared to staff.

Some restaurants employ [robot servers](#) that run food to tables.

What about humans?

Humans are still needed, but robots can:

- Decrease restaurants' overhead costs and alleviate labor shortages.
- Streamline food prep and service.
- Replace humans at more dangerous stations, such as fryers or grills.

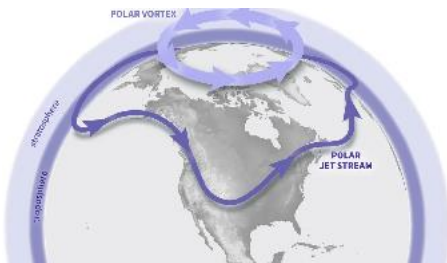
Meanwhile, workers can learn new skills related to managing and troubleshooting robots, and focus more on customer-facing tasks.

While the full impact of automation in the restaurant industry remains to be seen, please enjoy [Michael Sheen as Arthur, a robot bartender](#).

To get a better feeling for what's going on, click on the links.

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Arctic Polar Vortex Is 'Spinning Backwards'



Changes to the polar vortex influence the jet stream, which can in turn impact weather across the Northern Hemisphere.

(Image credit: NOAA Climate.gov graphic)

Earlier this month, a sudden atmospheric warming event caused the Arctic's polar vortex to reverse its trajectory. The swirling ring of cold air is now spinning in the wrong direction, which has triggered a record-breaking "ozone spike" and could impact global weather patterns.

Disruptions to the polar vortex can impact weather in the U.S., such as in 2019 when a massive cold front descended across the Midwest. These extreme weather events occur when the polar vortex deforms the jet stream — an air current that surrounds the polar vortex — exposing lower latitudes to large blobs of icy Arctic air.

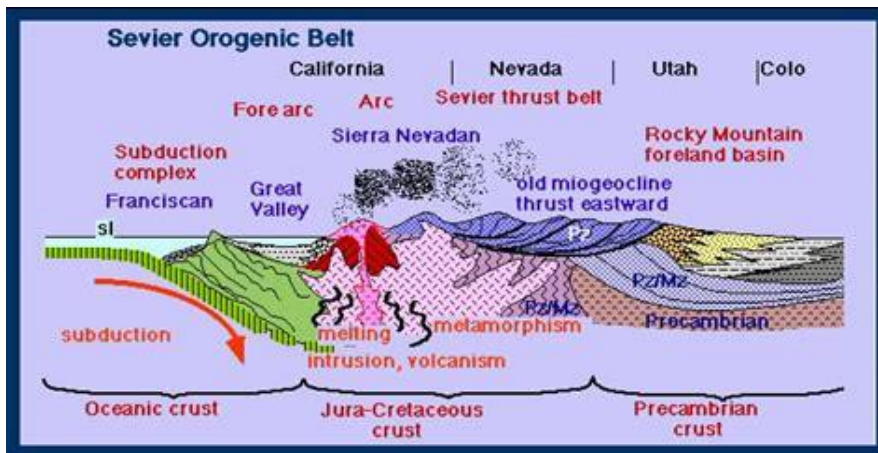
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Orogeny Geological Formation of North America: 600 Million Years Ago To Present



How the west was made: western North American orogenies
Lucky Sci

Western North America is a patchwork of hundreds of terranes, which are crustal pieces or microplates (think of islands), that collided with and attached to North America across hundreds of millions of years -- adding piece-by-piece to the continent's width and building mountains as they produced volcanoes or pushed up sediments and rocks. This post provides a very simplified timeline of the major orogenies and terranes that affected western North America.

<https://youtu.be/KypcO-s46gI?t=1eal>

<https://youtu.be/2yKNhbY3Nbk>

<https://youtu.be/3o3IJIhTE>

<https://youtu.be/JmC-vjQGSNM>

Nothing simple about our Left Coast.

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Woodpeckers Throughout the World



Cornell Lab of Ornithology

With unique features like shock absorbers in their heads to specialized tongues that can pick out insects from trees, the woodpecker has a range of unique talents and habits.

<https://mossandfog.com/woodpeckers-throughout-the-world/>

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Functional Ultrasound Imaging

Realtime feedback during spinal surgery



*Optimizing pain relief Vasileios Christopoulos, assistant professor of bioengineering at UC Riverside, helped develop functional ultrasound imaging technology to image spinal cord activity. The technique will enable clinicians performing electrical stimulation treatment for back pain to see the effectiveness of the treatments in real time.
(Courtesy: Stan Lim/UCR)*

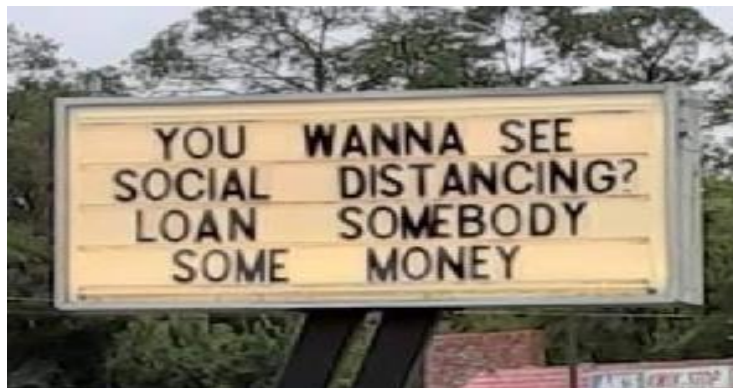
Despite playing a central role in sensory, motor and autonomic functions, little is known about the functional architecture of the human spinal cord. Traditional neuroimaging techniques, such as functional MRI (fMRI), are impeded by strong motion artefacts generated by heart pulsation and breathing.

In contrast, fUSI is less impacted by motion artefacts and can image the spinal cord with high spatiotemporal resolution (roughly 100 μm and up to 100 ms) and high sensitivity to slow flowing blood during surgery. It works by emitting ultrasonic waves into an area-of-interest and detecting the echoed signal from blood cells flowing in that region (the power Doppler signal). Another advantage is that the fUSI scanner is mobile, eliminating the extensive infrastructure required for fMRI systems.

<https://bit.ly/3PH69ky>

They can't move forward too fast as far as I'm concerned.

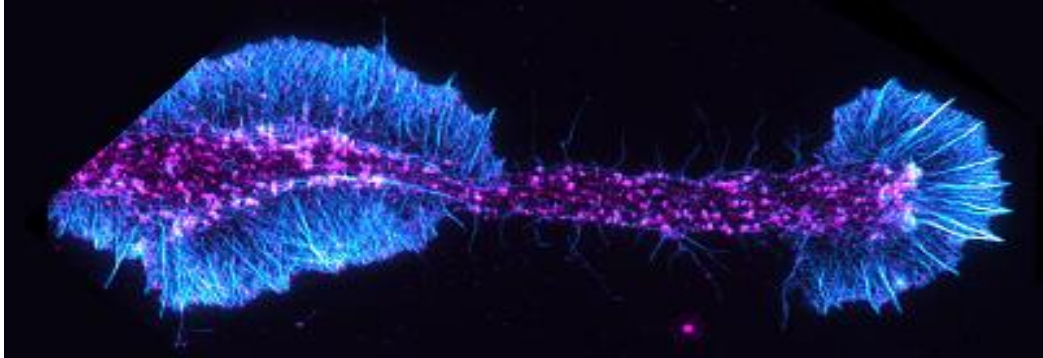
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Unlocking the Secrets of Myelin Repair

New research supported by Wu Tsai Neurosciences Institute could lead to novel treatments for demyelinating disorders such as multiple sclerosis.



Banner image shows actin filaments (cyan) and an actin regulatory protein (magenta) in a differentiating oligodendrocyte.

Image Credit: Brad Zuchero and Andrew Olson. Image acquired at the Neurosciences Microscopy Service, a Community Laboratory of the Wu Tsai Neurosciences Institute.

Myelination is essential for the rapid transmission of electrical signals in the brain, facilitating everything from movement to thought. The breakdown or loss of this myelin sheath, as seen in conditions like multiple sclerosis and other neurodegenerative diseases, leads to significant cognitive and physical impairments.

The new findings have researchers excited about the potential for new avenues of treatment to regrow these insulating sheaths in patients with demyelinating disorders.

<https://bit.ly/3JicGP3>

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World Nature Photography Awards: 2024 Winners



Tracey Lund

Tracey Lund - gold winner and grand prize of world nature photographer of the year

Taken whilst on holiday in Shetland, sat on the side of a RIB. The hired DSLR camera in the waterproof housing was attached to polecam system and lowered into the water. Thousands of gannets were in the sky above us and then started to dive into the sea after locally caught fish. An unbelievable spectacle to witness, let alone photograph. I took 1800 images on that day but only had 2 that I could use.

<https://bit.ly/3U2sCL6>

There are a lot more here to whet your appetite for nature photography.

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Is Broccoli on Your Shopping List?

Find out different broccoli benefits and understand why people dub it a wonder food!



well.org

The list of broccoli health benefits is a long one, so it shouldn't be a surprise why people call it a superfood.

What's even more amazing is it can appeal to the taste buds! Broccoli then becomes one of those vegetables you won't have a hard time feeding your kids.

https://well.org/nutrition/benefits_of_broccoli/

<https://www.allrecipes.com/gallery/best-broccoli-casserole-recipes/>

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Chords & Riffs

Percy Grainger (1882-1961)



wikipedia

Australian-born composer, arranger and pianist who moved to the United States in 1914 and became an American citizen in 1918. In the course of a long and innovative career he played a prominent role in the revival of interest in British folk music in the early years.

In 1914, Grainger moved to the United States, where he lived for the rest of his life, though he travelled widely in Europe and Australia. He served briefly as a bandsman in the United States Army during the First World War through 1917–18, and took American citizenship in 1918.

After his mother's suicide in 1922, he became increasingly involved in educational work. He also experimented with music machines, which he hoped would supersede human interpretation. In the 1930s he set up the Grainger Museum in Melbourne, his birthplace, as a monument to his life and works, and as a future research archive. As he grew older, he continued to give concerts and to revise and rearrange his own compositions, while writing little new music. After the Second World War, ill health

reduced his levels of activity. He considered his career a failure. He gave his last concert in 1960, less than a year before his death. rs of the 20th century.

Lincolnshire Posy US Marine Band



MarineBand

Lincolnshire Posy is a musical composition for concert band commissioned in 1937 by the American Bandmasters Association. Considered by John Bird, the author of Grainger's biography, to be his masterpiece, the 16-minute-long work has six movements, each adapted from folk songs that Grainger had collected on a 1905–1906 trip to Lincolnshire, England. In a similar fashion to these folk songs, many of the movements are in strophic form.

Unlike other composers who attempted to alter and modernize folk music, such as Ralph Vaughan Williams, Grainger wished to maintain the exact stylizing that he experienced from the originals.

In the piece's program notes, Grainger wrote: "...Each number is intended to be a kind of musical portrait of the singer who sang its underlying melody—a musical portrait of the singer's personality no less than of his habits of song—his regular or irregular interpretation of the rhythm, his preference for gaunt or ornately arabesqued delivery, his contrasts of legato and staccato, his tendency towards breadth or delicacy of tone."

Over the years Lincolnshire Posy has been one of the Marine Band's favorite pieces and is featured here first as the first three episodes of the band's famous rehearsal series. I think these are really worth your time in understanding what lies behind a public presentation. Colonel Fettig retired last year but the legacy of his work ethic and brilliance as the conductor of "The President's Own" continues.

Rehearsal (1) <https://youtu.be/eUfm6Adsbh0>

Rehearsal (2) <https://youtu.be/WcJjYhFXYYM>

Rehearsal (3) <https://youtu.be/WltbrbnwusM>

Here's the piece in its 16-minute entirety.

Lincolshire Posy (all, just let it play through the list)

<https://youtu.be/IwR5ScrrreP4?list=PLA7no0L9zTk7tKHJjBQdK5QmhHvIcqrD1&t=2>

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Poetry Corner

In The Bounty Present Now



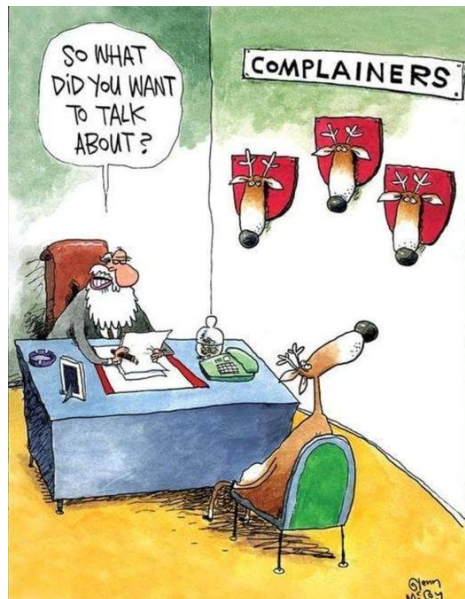
dreamstime.com

Spring so full
oat grass
thick as shoe mud
bending forward from
seed heads
too heavy for
grass stems
to hold aloft
those stems already
wafting softest yellow
like cream just turning
into butter
then the days and weeks
of bleaching
green to color wheat
I feel pain watching
wild grass

receding
knowing how fast
it comes and goes
these days
age speeds up the train
and whistles the next stop
before it leaves
the depot where I stand
fingering my travel plans.
I'm not saying this is
wrong
but grass turning away
from green
seems to rush the lushness
I want to linger in
which is already moving on
and I want it all to
stay here somehow.
I don't want to wait
for the coming spring.
Lay me in the bounty
present now.

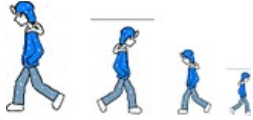
Katherine Holden April 2024

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My Walking Thoughts



For Sunday April 14 2024

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First Solo Flight of Colonel Charles Block, USMC (Ret)

The date was September 16, 1953 (Gosh – that’s a long time ago). The location was Mile Square field. The aircraft was a SNJ-4 27444 (yes, I kept my old logbooks. My loving wife of nearly 79 years had them leather bound for me)

Mile square, as its name indicates was a grass field approximately one mile square. As I recall my instructor pilot had me fly to the field and do a touch and go landing. Apparently, I didn’t scare him too badly and he told me to taxi away from the landing area and he would get out. He did just that and I was told to do a touch and go. I did and taxied back to where he was and he told me to do one more. We then returned to Whiting Field, hence we started from, landed and debriefed.

That evening, I went to the NavCad club and dutifully had my necktie cut in half and proceeded to enjoy several adult beverages. That is one of those days in life when you share pride, joy, wonderment, and awe of what you had accomplished. It’s right up there with marriage, birth of children and first squadron command.

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My Own First Solo



My own first solo in the T-34 was surprisingly routine. As I recall it typically came as part of A-9, the ninth flight of the first flight stage at Saufley Field, so I was not surprised after a couple of touch-and-goes at Barin Field--an outlying strip near Foley, AL--that the good Captain Fentress had me taxi to the parking ramp where he made a

production out of securing the rear cockpit of the bird before hopping down to the deck.

There he pointed to his watch and mimed a 'three-zero followed by a series of hand gestures indicating the aerobatic maneuvers I should accomplish. He concluded his performance pantomiming a couple of landings after which he turned on his heels and headed for the row of seedy seats in front of an abandoned admin building.

The field's control tower was no longer in operation meaning that see-and-be-seen rules were in effect, so after completing my preflight checklist and checking that no aircraft were in the pattern, I radioed in the blind that "Two Sierra umpty-ump" was about to claw its way into the air...which it did with me nominally in control.

Gear and flaps up, throttle and prop set to 24 inches of manifold pressure and 2400 rpm, I climbed westward into the practice area near Magnolia Springs wondering what emergency Captain Fentress was about to spring on me. Then with a start I remembered he was back at Barin taking a nap.

I was alone. If the engine quit or a wing fell off there was no one there to take care of things and in the next five or so minutes my excited imagination explored the Pantheon of catastrophes awaiting to smite me. Somewhere in the middle of such reveries I became aware that I was approaching 10,000 feet and passing feet wet at Mobile Bay. Yikes.

"Get your mind in gear, you dufus," I reminded myself in the best Fentress chiding voice I could muster and got to work.

A quick wingover put me on the heading back into the practice area and without conscious thought I lowered the nose to gain airspeed to perform a loop followed by a Cuban Eight then a pair of barrel rolls left and right at the conclusion of which I found myself fully attuned to the situation...a genuine first.

The rest of the hop was pretty much pro forma other than my first touch-and-go in which I floated nearly to midfield before touching down, but after that all went well.

Captain Fentress climbed aboard and told me to relax. He then ferried us back to Saufley, managing the field's impossible entry procedure as if he knew what he was doing. Next day we were back at it, grinding away at the multitude of carbuncles that remained in my airwork.

At the moment I was focused on achieving my wing, so the epiphany of this first solo wouldn't arrive until one evening nearly a year later...an event that I will describe in a future episode.

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