

Ode to E Pluribus Unum for Sunday February 25 2024

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Odie Gets it Right



*From Lunar orbit
Intuitive Machines*

Image Credit: Intuitive Machines

The object you see here is Odysseus, a spacecraft built by the Houston-based company Intuitive Machines that touched down on the moon this past Thursday and became the first private spacecraft to complete a successful lunar landing.

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

Intuitive Machines' robotic lander Odysseus has accomplished the first U.S. landing on the Moon since the Apollo 17 mission in 1972.

Launched on a SpaceX rocket on February 15, the phone booth sized lander reached lunar orbit on the 21st and touched down on the lunar surface at 6:23 pm ET on February 22nd.

Its landing region is about 300 kilometers north of the Moon's south pole, near a crater designated Malapert A.

Resting on its side, the lander is presently collecting solar power and transmitting data back to the Intuitive Machines' mission control center in Houston. The mission marks the first commercial uncrewed landing on the Moon.

Prior to landing, Odysseus' camera captured this extreme wide angle image (landing legs visible at right) as it flew over Schomberger crater some 200 kilometers from its landing site. Odysseus was still about 10 kilometers above the lunar surface.

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Nicknamed Odie, the lander also recently sent back some images of Earth as it made its way to its destination — [click here](#) to see the views and [here](#) to watch the landing.

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The Problem with Your Cashmere Sweater

Cashmere clothing is cheaper than it used to be, and that's not a good thing.



Good growth

Cheap cashmere has become ubiquitous—available at stores like H&M and Costco, in the form of turtlenecks and dresses and sweatpants and even underwear. Fast fashion democratized a product that used to be a luxury, but the quality, unsurprisingly, isn't good.

<https://bit.ly/478GMhX>

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Local Beaches Are Glowing Blue Again



*The blue waves at Huntington Beach.
Courtesy Peter Nguyen*

The iridescent blue is caused by a planktonic organism — dinoflagellates — that are invisible to the eye, said David Caron, a professor of biological sciences at the University of Southern California. When agitated, they flash light through a chemical reaction.

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

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Researchers Urge Caution with New Mixed Reality Headsets



*Stanford VHIL researchers developing the protocol for how to safely use headsets in public.
(Image credit: Virtual Human Interaction Lab)*

A new study finds that headsets merging the external world with digital content via passthrough video technology can offer amazing experiences, but visual distortions, feelings of social absence, and motion sickness can undercut the vibe, dissuading prolonged usage.

In the headset, peripheral vision is lost and users can only take in around half of what humans normally see. And the gadgets still cannot quite match the sharpness of natural vision. Distortion occurs as well – a sort of “funhouse mirror” effect with objects’ shapes

and dimensions appearing unnatural or morphing – and there was a just-noticeable lag in the display changing when users move their heads to a new view.

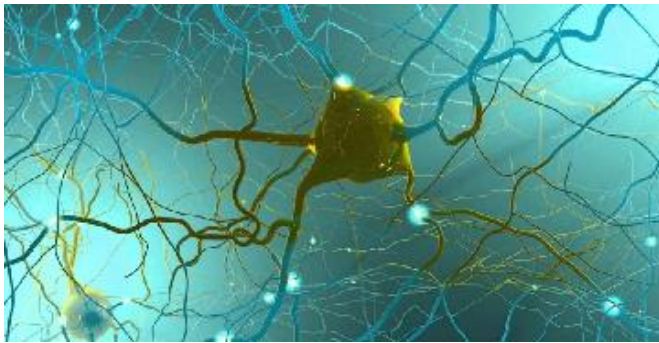
<https://bit.ly/48W62sP>

I can hardly wait to not use one of these things...but then I'm just a curmudgeon.

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Functional Human Brain Tissue Produced Through 3D Printing

A team of researchers has created the first functional 3D-printed brain tissue to examine the brain's function and study various neurological disorders.



*Representational image of signal transmitting neurons.
Christoph Burgstedt/iStock*

Neurons produced from induced pluripotent stem cells were carefully put in layers utilizing a softer bio-ink gel, creating a more favorable environment for growth.

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

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Mia Ruhman - Delusion



Hollywoodbowl.com

The official music video for "Delusion" was written and performed by Mia Ruhman and directed by Chelsea Trotti.

<https://youtu.be/8E5a0hLf45Q>

Mia Ruhman is my granddaughter Chelsea's best friend who've worked together on a variety of projects. Pretty sure we'll be hearing more from both in the future.

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Kilometer Long Museum Emerging from a Lake in China



gomuisweb

Designed by Japanese architect Junya Ishigami, the Zaishui Art Museum features a thin concrete roof and large, repeated windows that give impressive views of the lake.

<https://mossandfog.com/kilometer-long-museum-emerging-from-a-lake-in-china/>

Kilometer long museums? Maybe next they'll make acre sized microchips.

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Leroy Anderson

The Typewriter



classicfm

"The Typewriter" is a short composition of light music by American composer Leroy Anderson, which features an actual typewriter as a percussion instrument using three basic typewriter sounds: the sound of typing, the "ring" of the carriage return indicating

an approaching end-of-line (a standard desk bell is used for it), and the sound of the typewriter's carriage returning. In some cases the sound of the typewriter's carriage returning is made by a musical gourd, flute, string or other instrument.

The typewriter was modified so that only two keys work to prevent the keys from jamming. According to the composer himself, as well as other musicians, the typewriter part is difficult because of how fast the typing speed is: even professional stenographers do it, and only professional drummers have the necessary wrist flexibility

<https://youtu.be/1upTPepErTY?t=3>

The Waltzing Cat

Anderson was very precise in scoring his music and in performing it as he wrote it. That the printed music later included both of these notations explains why Anderson included them in his 1959 recording.

Whether it was the effect of the dog bark in terms of the audience reaction or the composer's own pleasure in achieving this musical joke, both "cat snarl" and "dog bark" have been part of the Conductor's score since 1959.

<https://youtu.be/iNFibL9c1eE>

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Jester's Cap



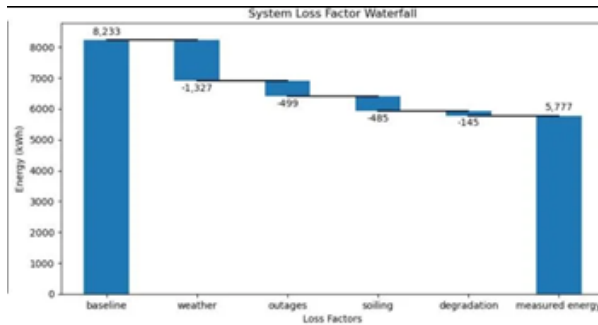
Jester looks at last week's Ode

Greenhouse primer...everyone shows the same idea, namely that sunlight enters the atmosphere, strikes the ground, and then, instead of escaping the way it entered, bounces up and gets reflected back to earth. If CO2 does this, why doesn't it bounce most of the heat back before it enters the atmosphere? Asking for a friend.

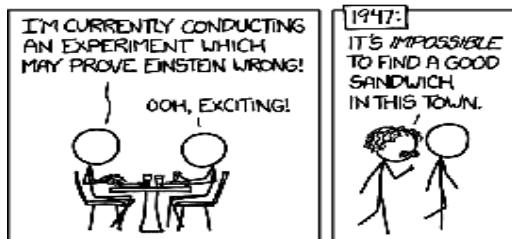
As for the size of Mr. T. Rex, entire skeletons have been found. The one I know most intimately is at the Carnegie Museum of Natural History in Pittsburgh--I lived about two blocks from it for maybe 5 years. We know pretty exactly how big that one was. Not sure I get what's new about this.

I don't recall whether I've mentioned Edward Tufte to you before (or, for that matter, whether you already know about him independently of me). But his magnum opus,

The Visual Display Of Quantitative Information is one of the best books I've ever seen on the subject. He would like this graph.



Multiverse ... So, back in 2018, I attended the commencement exercises at my old high school. The speaker was Rainer "Rai" Weiss. He had won the Nobel in physics for LIGO in October of 2017. Our then librarian's husband, also a physicist, had worked with Rai in the past and invited him to deliver the address. Which he accepted. Rai made a big deal about Einstein having both predicted gravitational waves and the idea that they're so minuscule, they'd never be detected. Everyone wants to find a mistake in Einstein's work....



Well, as we know, LIGO works and Einstein was only half right: Rai's group found the first ones.

Anyway, I had asked Pat Widhalm, then principal of the school, what plans had been made to entertain him. He said that they'd just decided to maybe take him to lunch. I told him to forget that. I'd be there and we'd have a catered event at Françoise's [librarian's] house. On me, which meant that I got to invite who I wanted and not invite who I didn't.

Sitting next to me was Betsy Widhalm with Pat on her right. Across from me was Rai. At some point, she asked him about the possibility of multiple universes. Rai allowed as how physicists ought not to talk about things like that since they can't be verified. I pointed out that no less a light than Albert himself thought the same about gravity waves. Touché. It was a magical evening. To my credit, I did not monopolize Rai, but when he wasn't talking with anyone else, he was mine.

Saw him last April when Carda and I were in Boston. He moves slower now--he's ~ 90--but he remains tack sharp. Great guy. Vallejo—close, but no banana: he died on a Friday.

Where are the navaid spoofing sites? (*The Blackl Sea Region I presume, but anywhere when you think about it.*)

“Glenn might have been first, but it’s in Michael Collins’ book, [Carrying the Fire](#).

Pen/pencil to boost brain connectivity...follows reference to an article about “Major few found in thousands of neuroscience experiments.” Coincidence? I think not.

Infinities and Kantor sets ... ever read Bill Dunham's charming little book, [Journey Through Genius](#)? It's quite excellent. If you get it, keep a pad of paper and pen nearby. You'll want that to follow the proofs. He describes Kantor's infinite sets and shows how aleph 1 > aleph null. And shows that there are more irrational numbers than rational ones. Kinda brain-bending stuff.

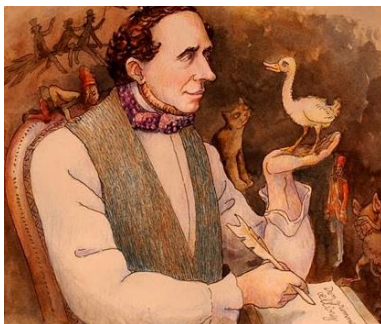
Accents...I was born and raised in New Orleans. Never had an accent. First time I lived anywhere else, it was in college. Got there and it was an endless "where ya from?" New Orleans. "You don't sound like you're from New Orleans." What do people from NOLA sound like? I honestly didn't know.

Until Christmas break 1965 when I went home for the holidays. Everyone talked funny. I was sure my family was putting me on, so I didn't rise to the bait. And then I went out to get a hamburger. And everyone there sounded like my family. Common denominator was...me. I hadn't heard it. It was obviously there, but who knew? Since then, I've discovered that I have a fairly keen ear for accents--at least American ones, and especially Southern ones. The accent map was interesting: there were regions, a couple of states, and one city: New Orleans. Figures.

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Poetry Corner

Hans Christian Andersen [1805-1875]



Liberia el kiosko blogspot.com

Hans Christian Andersen was born in Odense, Denmark, the son of a poor shoemaker and a washerwoman. As a young teenager, he became quite well known in Odense as a reciter of drama, and as a singer. but it is a writer of moral and uplifting tales that he is best remembered.

In 1829 his first book - an account of a walking trip - was published. After that, books came out at regular intervals. At first, he considered his adult books more important than his fantasies. In later life, however, he began to see that these apparently trivial stories could vividly portray constant features of human life and character, in a charming manner. He once said that ideas for stories 'lie in my mind like seeds and only need the kiss of a sunbeam or a drop of malice to flower'. He would often thinly disguise people he liked or disliked as characters in his stories: a woman who failed to return his love becomes the foolish prince in 'The Little Mermaid'; his own ugliness and humiliation, or his father's daydream of being descended from a rich and powerful family, are reflected in 'The Ugly Duckling'.

From The Philosopher's Stone

Now she heard the following words sadly sung,—

“Life is a shadow that flits away
In a night of darkness and woe.”

But then would follow brighter thoughts:

“Life has the rose's sweet perfume
With sunshine, light, and joy.”

And if one stanza sounded painfully—

“Each mortal thinks of himself alone,
Is a truth, alas, too clearly known;”

Then, on the other hand, came the answer—

“Love, like a mighty flowing stream,
Fills every heart with its radiant gleam.”

She heard, indeed, such words as these—

“In the pretty turmoil here below,
All is a vain and paltry show.”

Then came also words of comfort—

“Great and good are the actions done
By many whose worth is never known.”

And if sometimes the mocking strain reached her—

“Why not join in the jesting cry
That contemns all gifts from the throne on high?”

In the blind girl’s heart a stronger voice repeated—

“To trust in thyself and God is best,
In His holy will forever to rest.”

But the evil spirit could not see this and remain contented.

That ancient tree, don’t let it fall

That ancient tree, don’t let it fall
Until old age is knelling;
So many things it can recall,
What tales it could be telling.
We once did see its blossom-haul
Each branch with fruit was swelling.
That ancient tree, don’t let it fall,
You must not think of felling!

Now to be journeying I yearn
But yet the truth in part is
One does but travel to return,
For home is where one’s heart is.
When this old tree stands blossom-tall,
I’m nearly home it’s telling;
That ancient tree, don’t let it fall,
You must not think of felling!

Walking Life

The farm dog barks - its teeth are so sharp.
A woman enters the hall,
Alas, poverty sits on dress and cheek,
She sings and plays the harp.

A wretched horse behind the fence seeks its fodder;
Here is the wagon with quilt and shed,
There sits the Man in God's Nature
With the child screaming at the mother.

He kisses a little and pines for Change;
Soon the woman will come with money and bread,
Then she nurses the child on her lap,
While the Man prepares for Hiking.

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How Does a Baby Begin to Breathe Air and Use Its Own Lungs?



An intricate choreography of physiological and molecular events quickly unfolds to help the newborn babies to draw their very first breath, generally within about 10 seconds after delivery.
pinterest

The fetus begins to make some breathing movements as early as about 10 or 12 weeks. These increase during development so by the full 40 weeks of gestation the baby is prepared to breathe outside of the womb.

"But the fetus does not yet actually breathe anything at that time," says neonatologist Caraciolo Fernandes. Instead, fetal breathing movements train the fetus to use the respiratory muscles, develop the lungs and neural circuits of respiratory control, to be ready at the birth.

As the baby travels through the birth canal, the compression squeezes some of the fluid from the lung. The pressure changes during birth and hormonal shifts in the baby also initiate absorption of the lung fluid. Once the baby is delivered, the abrupt drop in temperature—from inside the womb to the outside world— the physical stimulus of cold

air on the skin, and the glare of bright light within seconds after birth triggers a gasp of air as the baby takes its first breath.

"The fetal lungs act like a big sponge that suddenly fill-up with little air spaces," says Tingay. "That's what babies do in their very first breath."

The pressure caused by the influx of air at the first breath pushes the remaining fluid out of lungs.

"Birth is one time when you actually want your baby to cry," says Fernandes, from Baylor College of Medicine and Texas Children's Hospital. "You want them to cry as much as they can, because it helps open the lungs really well."

When the lungs open, the air fills the spaces and help the organs to displace and absorb the last bit of fluid, says Fernandes. Any residual fluid that remains is either expelled through coughing or gradually absorbed into the bloodstream and lymphatic system.

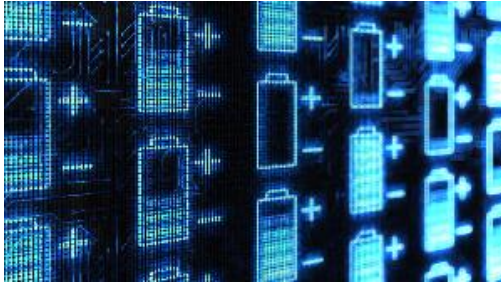
Along with the neural stimuli that activate the breathing in a newborn, some specific genes also get turned on at birth. As mice are born, neurons release a neurotransmitter called PACAP that regulates breathing. Another study in mice reveals that a gene called *Foxa2* is required for transition to breathing air at birth.

In Cesarean births, where the labor may not have initiated naturally, the pre-birth process of switching the absorption of fluids in the lung does not happen. Some of these babies may still have fluid remaining in their lungs, leading to breathing problems after the birth. However, it happens more often in the babies that are born prematurely, because not only do they have unabsorbed fluid in the lungs, they also may have underdeveloped lungs. For this reason, some neonatologists warn against elective Cesarean procedures, unless medically warranted.

We cannot know exactly how a mythical mermaid is able to breathe underwater. But even Arielle, the Little Mermaid, was coerced by Ursula the witch to "Take a gulp and take a breath," and sign a contract to give the witch her voice in exchange for leaving her life under the sea to live on land. Similarly, by taking their first big breath, human babies break reliance on the womb and placenta and exit their underwater world, declaring their independence and breathing air.

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Sitting Idle Boosts Performance of Lithium Metal Batteries



A new study presents possible solutions to a problem known to cause degradation and failure in lithium-metal batteries.

(Image credit: alengo/iStock)

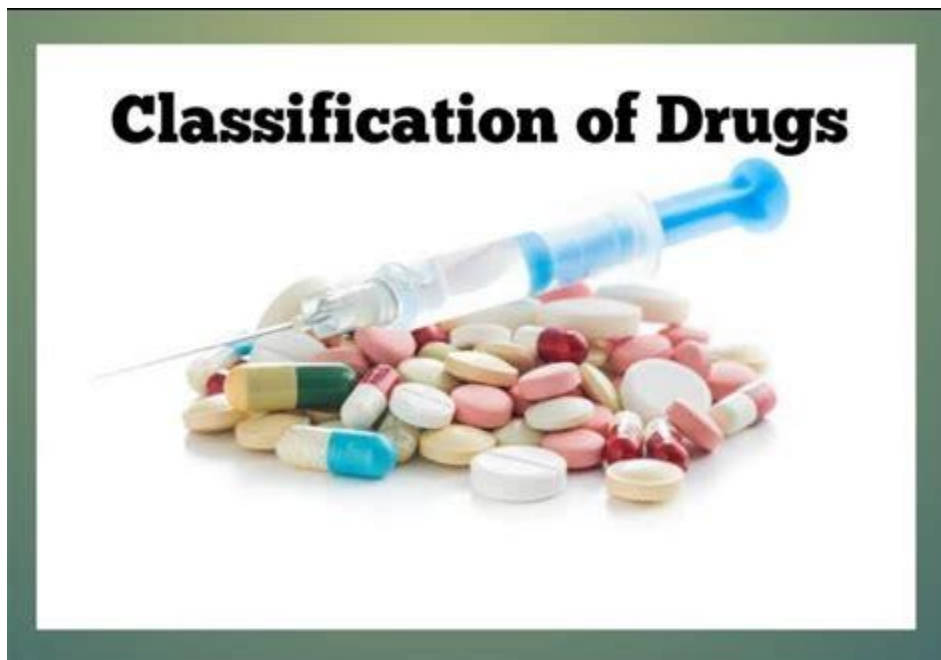
Lithium metal batteries could double the range of electric vehicles, but current batteries degrade quickly during operation. Stanford researchers have discovered that you can improve the battery's cycle life simply by letting it rest for several hours in the discharged state.

Scientists have been testing a variety of new materials and techniques to improve the battery's cycle life. Now, Stanford University researchers have discovered a low-cost solution: simply drain the battery and let it rest for several hours. This straightforward approach, described in a study published Feb. 7 in the journal [Nature](#), restored battery capacity and boosted overall performance.

<https://bit.ly/48oSIMx>

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Drugs 101: An Interactive Guide



publichealth.com.ng

What's the difference between opioids and psychedelics? This Alcohol and Drug Federation guide details specific drugs and their various associated effects. Drugs in this wheel fall into seven categories: stimulants, depressants, empathogens, psychedelics, dissociatives, cannabinoids, and opioids. Clicking on any category will reveal a related article detailing what the drug category does and how the drug is typically used.

<https://adf.org.au/drug-facts/>

Alcohol and Drug Foundation

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102-year-old British veteran flies a Spitfire for charity



worldwarwings

Jack Hemmings, an ex-squadron leader with Britain's air force, is believed to be the oldest pilot to fly the World War II plane. His 20-minute flight, from an airfield in southern England on Monday, was to raise money for a charity he co-founded nearly 80 years ago.

The veteran — who had never flown a Spitfire before — said it was “absolutely delightful” being back behind the controls, though he said the ride was “very bumpy.”

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Can Automakers Compete with CSupercharger Network?



One EV charging industry exec told Tech Brew that the collaboration in North America "makes a

ton of sense" because it will help alleviate consumers' range anxiety.
Vm/Getty Images

For one newly formed joint venture, the answer is seven: BMW, GM, Honda, Hyundai, Kia, Mercedes-Benz, and Stellantis.

This supergroup of auto industry heavyweights announced Feb. 9 that the JV they unveiled last July is now official, complete with regulatory approval, a CEO, and a name: IONNA.

IONNA will now get to work establishing a network of at least 30,000 new EV fast chargers across North America, with plans for the first batch to come online in the US this year. The venture's stated goal is to be "the leading network of reliable high-powered charging stations" on the continent. The effort, if successful, would represent a major expansion of the number of high-speed chargers available to EV drivers in the US—and will compete against other automaker-backed charging networks like VW-owned Electrify America and Tesla's Supercharger.

"It makes a ton of sense, because EV car sales are slowing and there are two fundamental things that will speed it back up: Decrease the cost of the cars...and then deal with the No. 2 issue, which is range anxiety and the ability to get charging out there," Andy Bennett, CEO of EV charging software company EVolve, told Tech Brew.

Currently, the US has just over 39,500 DC fast chargers, according to the Department of Energy. The National Renewable Energy Laboratory estimated that about 182,000 DC fast chargers will be required to support 30 million to 42 million EVs by 2030.

Auto execs have said that such an effort is needed to help support faster EV adoption.

"The fight against climate change is the greatest challenge of our time. What we need now is speed—across political, social, and corporate boundaries," Mercedes-Benz CEO Ola Källenius said in a July statement. "Charging is an inseparable part of the EV experience, and this network will be another step to make it as convenient as possible."

Initially, IONNA will establish charging stations in urban areas and "along major highways." The companies have said they'll use renewable energy to power the chargers. The network also will include amenities such as food service and restrooms.

IONNA's chargers will support both Combined Charging System and North American Charging Standard (NACS) ports. Much of the auto industry has jumped to adopt NACS, Tesla's charging standard, and Tesla has commenced opening its Supercharger network to other EVs.

By Jordyn Grzelewski for Tech Brew

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Incredible Owl Camouflage on Display



reddit

We love the ability for animals to blend into their surroundings. When you think of camouflage in the animal world, owls might not be top of mind.

Owls are masters of blending into their surroundings, waiting for their prey to be in range of a strike. They wait patiently, using their impressive vision to spot their target. They can then swoop down silently on their prey, utilizing special feathers that eliminate noise from their wings.

Here is an astounding collection of owl images, in full camo-mod

<https://mossandfog.com/incredible-owl-camouflage-on-display/>

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The Surreal Life of a Professional Bridesmaid

For the last decade, Jen Glantz has worked as a bridesmaid for hire. Her life is a romantic comedy waiting to happen.



onewed.com

She typed out an ad on Craigslist: "Professional bridesmaid - w4w - 26 (NYC). Let me be there for you, this time, if: you don't have any other girlfriends except your third cousin, twice removed, who is often found sticking her tongue down an empty bottle of red wine," she wrote. "You need someone to take control and make sure bridesmaid #4 buys her dress on time and doesn't show up 3 hours late."

The emails poured in. Hundreds of notes from brides in need. Interview requests from reporters who'd seen the ad. Marriage proposals of her own.

In the ten years since that hazy night, Glantz has parlayed what began as a Craigslist lark into a fully fledged, six-figure business as the country's most prolific professional bridesmaid.

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

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Home with a World Class Astronomy Observatory



mass&fog

Architecturally, this modern home in California fits the bill, with a swimming pool, modern kitchen, and ample living space. But add a world-class observatory, and the picture becomes more interesting, indeed.

Known as Celestia Sonoma, the home was designed by Daryl Roberson, and sits on 37 acres of beautiful land overlooking vineyards and vistas.

<https://bit.ly/3SJ4KKG>

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We Are the World" a Puppet Tribute

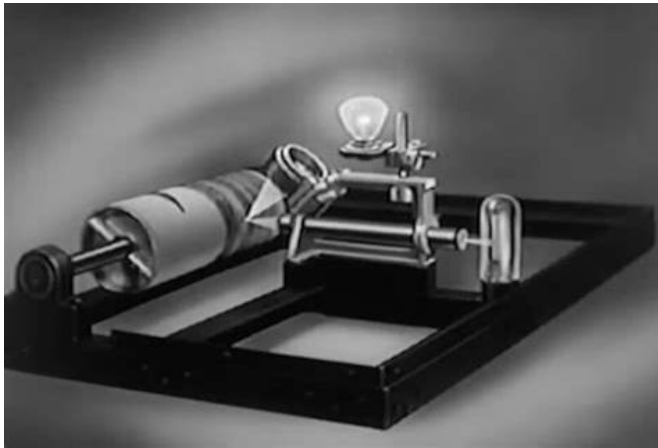


slideshare

<https://youtu.be/8ISRLOqEt6w?t=2>

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How Photos Were Transmitted by Wire in 1937



petipixel

Before smartphones, before text, before email, before fax, there was an era in which images were sent "by wire." Wired photo transmission was a revolutionary method of sending images over long distances before the advent of digital technology.

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

From Bell Labs to the birth of Xerox's zing-zing-zing machines.

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Meat-Rice: Grain with Added Muscles Beefs Up Protein

The laboratory-grown food uses rice as a scaffold for cultured meat.



The hybrid beef-rice is pink because the cell-culture medium contains phenol red, an acidity monitor.

Credit: Yonsei University

The study, published in *Matter*, uses manufacturing methods similar to those for other cultured meat products, in which animal cells are grown on a scaffold in a laboratory, bathed in a growth medium. Using rice as the scaffold has the benefit of adding nutrition to the rice, with the beef-rice having a slightly higher fat and protein content than standard rice.

<https://bit.ly/48ludj4>

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Bialbero-Powered 1959 Fiat-Abarth 750 Record Monza Zagato



bringatrailer

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



This was mine, stolen while I was in Vietnam 1969-70. A thank you for my service?

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The Global Fight Against Polio — How Far Have We Come?

A generation ago, polio paralyzed hundreds of thousands of children every year. Many countries have now eliminated polio, and our generation has the chance to eradicate it entirely.



bbc.com

<https://ourworldindata.org/global-fight-polio>

Until the arrival of Dr. Salk's vaccine, fear of polio controlled much of our lives.

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The Expressive Harp

Tocatta and Fugue in D Minor BWV 565: Amy Turk, Harp



chordify.net

Amy Turk is a harpist, arranger, composer and session artist from the UK. She is one of the most-watched solo harpists on YouTube, attracting millions of views to her ever-increasing list of video uploads. With special interests in percussion, video game music, film music and popular music of all styles, Amy has created a unique career path through her presence online, pioneering arrangements for solo harp and ensembles.

<https://youtu.be/oPmKRtWta4E>

Debussy - Clair de Lune: H lo se de Jenlis, Harp



lACLarenciere.be

H lo se de Jenlis started playing the harp when she was nine under the tutelage of Annie Lavoisier. She was first admitted as a young talent in the Royal Conservatory of Brussels. In 2017, she graduated with a Master's degree in Performance (with distinction) from the Royal Conservatory in Brussels.

She was awarded multiple prizes such as : the second prize at the Lille International Harp Competition, the first prize in the UFAM Competition in Paris, the first prize in the Rovere d'Oro - Giovanni Talenti Competition and the first prize in the French Harp Competition.

<https://youtu.be/vVTPbLhIbfI>

Jazz Harp 'Take Five' by Tamsin Dearnley: Harp



chordify

Tamsin Dearnley is a professional lever harpist, sound designer and award-winning composer and arranger. As a child, Tamsin couldn't decide if she wanted to be a harpist, a trapeze artist or an expert on Japanese art. So, she hedged her bets: six years of nagging persuaded her parents to let her have harp lessons; as a more rebellious eighteen-year-old she (politely) informed her parents she was taking up a year's place in a circus school before going to university to read Japanese.

She now divides her time between performing, teaching, composing, and creating weird and wonderful sound effects for museum installations and indie game designers.

<https://youtu.be/Y-5KTfnqTRU>

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Don't Send a Man to the Grocery Store!



71 years young Jeanne Robertson explains to us why men shouldn't be sent to the grocery store.

trendcentral

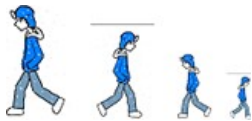
Five years ago, the now-71-year-old humorist was convinced to branch out into social media by posting one of her stories, "Don't Send a Man to the Grocery Store," on YouTube. It went viral, which worried the grandmother a bit until she learned what that meant.

What to do with a video that has now surpassed seven million views? You broaden out from the corporate world where Robertson was a fantastically successful convention speaker career and go into comedy show business.

<https://youtu.be/-YFRUSTiFU8>

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My Walking Thoughts



For Sunday February 25 2024

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Trip to Terra Incognita: Pensacola, December 1959

Preflight Coursework

Unlike college where the T/As and professors are professional educators, the Naval Aviation Training Command (NATC) is staffed with Naval Aviators or working professionals in the disciplines they teach. What distinguishes them from their learned contemporaries is their exuberance and genuine desire to pass along their hands-on knowledge and experience. Granted the subject matter might be superficial by comparison with that found in ivy covered halls, but it is designed to develop the landscape on which more esoteric knowledge will grow.

I know this for a fact when as an instructor in the Advanced Training Command several years later with ~3,000 flight hours in Skyhawks, Phantoms, and Skyrajs under my belt I was blessed with the opportunity to use this experience.

As Captain Rapp had suggested, cat & mouse games were verboten. No pussyfooting around. Instead essential information in almost painful detail was driven home by repetition and polished off with the reminder of what would be part of the course's final exam.

Take navigation for example:

It began with things we already knew as dead reckoning; time distance, airspeed, heading, atmospheric factors, magnetic anomalies, hemispheric differences, etc. etc.

After we had grown sick of such differences as true, grid, and magnetic headings; ground-, ground, calculated, true airspeeds, indicated and corrected mach numbers; great circle vs. point-to-point headings...again etc. etc., we arrived on the doorstep of celestial navigation and its handmaidens, "sights," or timed angular measurements, taken typically between a celestial body (e.g., the Sun, the Moon, a planet, or a star) and the visible horizon, or the lunar distance method, used for determining precise time when time is unknown.

It was fascinating stuff to all of us except for the ensign to whom the sacred knowledge was old hat since he had spent time in a blue water oiler taking fixes that he admitted sometimes approximated his ship's actual position. What has never become clear to me was what good this was in a tiny cockpit at 40,000 feet mired in 40,000 feet of cirrus while traveling along at 480 knots with 30 minutes of fuel left in the tanks...but on the other hand knowing how sailors used hunks of celestial matter to find their way couldn't hurt, could it?

Similar levels of exploration were part of our journeys through aerodynamics, powerplants, hydraulic systems, and even the more arcane worlds of electronics and communications, the latter including Morse Code proficiency clear up to the required standard of seven words per minute...dit-dit-dit...dah-dah-dah...dit-dit-dit.

Then there was 'nap-taking,' the weirdest class of all in which we sprawled on the 'deck' (not floor, mind you) and tried to sleep for 15 minutes. Only a quarter of an hour, I would tell myself feeling the time lost as unrecoverable, but the truth lay closer to the fact that I had found the practice disagreeable in my tadpole days and it remains so well into my dotage.

In retrospect I enjoyed the academic part of the Preflight experience as a rite of passage, with the added benefit that most of it has been of use ever since.

Next week the physical part of Preflight.

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