## Ode to E Pluribus Unum for Sunday March 16 2025



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# **Light Pillar over Erupting Etna**



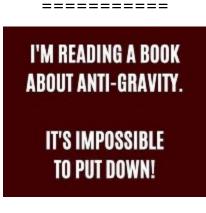
Image Credit & Copyright: Davide Caliò

Can a lava flow extend into the sky? No, but light from the lava flow can. One effect is something quite unusual -- a volcanic light pillar.

More typically, light pillars are caused by sunlight and so appear as a bright column that extends upward above a rising or setting Sun. Alternatively, other light pillars -- some quite colorful -- have been recorded above street and house lights.

This light pillar, though, was illuminated by the red light emitted by the glowing magma of an erupting volcano. The volcano is Italy's Mount Etna, and the featured image was captured with a single shot during an early morning in mid-February.

Freezing temperatures above the volcano's lava flow created ice-crystals either in the air above the volcano or in condensed water vapor expelled by Mount Etna. These ice crystals -- mostly flat toward the ground but fluttering -- then reflected away light from the volcano's caldera.



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**Chords & Riffs** 

**Meridian Odyssey** 



meridianodyssey.com

Meridian Odyssey is a band comprised of five musicians who are committed to creating a multi genre experience rooted in the history of jazz, rock, funk, and R&B in a forward thinking context. All of the members of the group have worked together in various situations previously, but the first time they have performed and recorded as a group was for their debut record.

Throughout the coronavirus lockdown, drummer Xavier Lecouturier and guitarist Martin Budde went back to Big Lake Alaska, where Martin grew up. Over the months, they assembled a studio in his fathers aircraft hangar and invited the three other musicians to rehearse new music to livestream and record. The product is an album that reflects a multitude of sentiments regarding the year it was recorded. Each member of the band contributed original music to the record, leading to a diverse approach in composition and genre mediums throughout.

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Bullitt <a href="https://youtu.be/KneRHEv5Zy4">https://youtu.be/KneRHEv5Zy4</a>

Second Wave <a href="https://youtu.be/9-ANdH\_QJ8M">https://youtu.be/9-ANdH\_QJ8M</a>

Hangar Sessions <u>https://youtu.be/EMbQpdJeLxI?t=4</u>

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# **FLASHMOB CENTRAL**

## Flash Mob at the Ohio Union Ohio State University



onejive.com

Approximately 100 dancers from Community-Minded Dance (cmDance) performed a Lindy Hop to a medley of Swing classics in the airport's Great Hall in Denver, Colorado.

https://youtu.be/P99p6l8v0FQ

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#### **Generation Xanax: The Dark Side of America's Wonder Drug**

Amid rising concerns about benzodiazepines, some patients who try to quit are suffering extreme anxiety, memory loss and intense physical pain



SIDE EFFECTS OF XANAX

epiphany wellness centers

Over the past six decades, hundreds of millions of people have taken Xanax (the brand name for alprazolam) or one of its cousins in the benzodiazepine family—Klonopin (clonazepam); Ativan (lorazepam); and Valium (diazepam)—to lull them to sleep or deliver instant calm in an age of abiding anxiety.

Psychiatrists and primary-care doctors regularly prescribe the drugs for everything from mild anxiety to insomnia, making benzodiazepines some of the most commonly prescribed psychiatric medications in America. The pills' omnipresence has left a mark on pop culture, turning up in Lil Wayne songs and HBO's "The White Lotus" as bearers of chemical tranquility.

But as concerns increase about potential adverse effects of these drugs, some patients who try to quit are suffering what amounts to a hangover they can't escape.

Two years after she started taking Xanax, Dana Bare began having panic attacks like never before.

Her memory started slipping. Her husband had to remind her how to make a sandwich. Bare's ailments cycled her through emergency rooms and puzzled specialists, some of whom thought she was mentally ill or had cancer. No one knew what to do other than up her Xanax dose, to 2 milligrams a day at one point.

The popular pills had been a blessing at first when her general practitioner prescribed them for mild insomnia more than a decade ago. Bare was a busy mother of five running a charity based in Smith County, Tenn. Xanax helped sleep come easy.

Over time, though, her nervous system developed a debilitating physical dependence on the drug. When she tried to quit after five years, crippling symptoms consumed her. "Brain zaps" hit her like electric shocks. Shower water jolted her so badly that she would suffer hourslong panic attacks and at times writhe in pain until she passed out.



# Delta And Airbus on Flight Technique Inspired by Migrating Geese

"The novelty, the simplicity, and the relative ease developing the technology is very appealing," Jonathan Beck, an Airbus exec, explains.





The idea behind fello'fly is to pair two aircraft together on long-haul flights, in a formation inspired by the V-shaped flight pattern geese use when they're migrating. The technique has been shown to reduce fuel consumption and emissions by at least 5%.

"With this flying technique, the first aircraft creates an uplift that drives fuel efficiency for the following aircraft, called wake energy retrieval, which can reduce fuel consumption," according to a news release.

#### https://bit.ly/4gs74Q2

Why not treat trans-oceanic 'geese' to some airshow-grade whifferdills?

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# What Data-Driven Science Reveals About the Twisted Saga of Western Water Rights



Courtesy of Laura Taylor.

In the American West, water is a sacred and scarce resource plagued by pollution, shortages, and contentious fights over legal rights, often between Indigenous peoples and business groups. At Caltech, Laura Taylor, a postdoctoral instructor in the Division of the Humanities and Social Sciences, conducts data-driven research that combines satellite imagery with historical and economic analysis to point to policy solutions for fairer resource allocation and cleaner water.

Taylor analyzed decades of data on water use and policy across the western United States, focusing her research on the impact of policy negotiations for Indigenous water rights on water quality. Her findings reveal a surprising and foreboding trend: Pollution increases during negotiations. Levels of dissolved oxygen—an essential indicator of water health—drop significantly near reservations as legal battles drag on. Pollution worsens upstream of Native American reservations, specifically, where industrial or agricultural runoff can have devastating effects on downstream water users.

#### https://bit.ly/42SwtiQ

Today's battleground in Mark Twain's water dictum is muddled by lawyers.

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# **10-Mile, Vegas-Style Underground Loop in Dubai for Driverless** Cars

Dubai, renowned for its rapid urban development, faces unique space and environmental sustainability challenges. Musk's Boring Company intends to handle them.



BlackJack3D/iStoc

The Boring Company, known for its ambitious tunneling projects, including one in Las Vegas, is set to construct a 10.5-mile (17-kilometer) underground tunnel system to accommodate driverless vehicles throughout the city.

The proposed network, the Dubai Loop, is intended to transport up to 20,000 passengers per hour, connecting more than 100 stations to major transport hubs and landmarks across the city.

https://bit.ly/40STgZg



## KEA's Massive Sleep Study Reveals Unique Truths About the World

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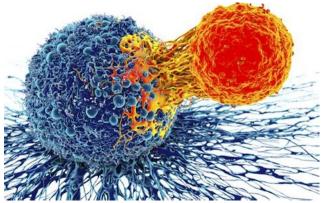
NRAS.org.uk

IKEA's latest global sleep study, surveying over 55,000 people from 57 countries, offers a fascinating snapshot of how the world rests—and struggles to. From endless scrolling to sleepless stress, the results reveal a universal battle for better shut-eye.

https://bit.ly/3QIV87S

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## What is CAR T Cell Therapy?



CAR-T therapy: Genetically-engineered cells that fight blood cancer utswmed.org

A woman has remained in remission for more than 18 years after being diagnosed with advanced pediatric nerve cancer, doctors reported yesterday. Her remission is the longest observed success from an immunotherapy treatment known as CAR-T.

The patient first arrived at a Houston hospital in 2006 at just 4 years old, where doctors diagnosed her with neuroblastoma—a condition in which immature nerve cells become cancerous as they develop. After traditional treatments failed, she enrolled in an experimental trial to receive chimeric antigen receptor (CAR)-T cell therapy. The approach takes a person's own immune system T cells (see overview), equips them with a gene that helps target cancer cells, and reinjects them into the body.

While CAR-T has seen success in treating blood cancers like leukemia, the approach has been less effective in solid tumors like neuroblastoma. Of the 10 others enrolled in the original trial, nine passed away, while one survived for nine years before losing contact with researchers.

https://youtu.be/IH926-FeAOI

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# Elephant Seals as Ecosystem Sentinels for the Northeast Pacific Ocean Twilight Zone



This delightfully chunky elephant seal serves as a valuable ecosystem sentinel, allowing scientists to assess fish populations in the ocean's mysterious twilight zone. D. Costa

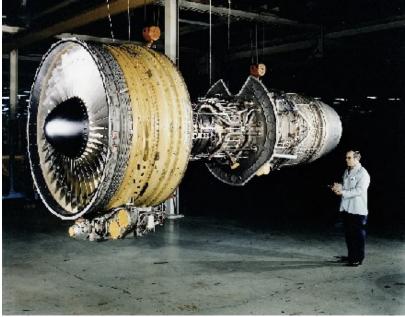
The ocean's twilight zone, which spans from just 200 meters below the sunlit surface to 1000 meters deep, is one of Earth's most mysterious ecosystems. The region is home to the world's largest and least exploited fish stocks, but it's unclear whether deep-sea wildlife populations experience the kind of dramatic, boom-and-bust fluctuations seen on land. Now, scientists can rely on an adorable helper—the elephant seal—to keep them up to date on what's happening down below.

By harnessing smart sensor data from thousands of these blubbery marine mammals, which primarily munch on twilight zone fish and squid during their long migration across the Pacific Ocean, researchers gained insight into long-term trends in ocean conditions.

#### https://bit.ly/434FIwr

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# Why It's So Hard to Build a Jet Engine



GE CF6 turbofan, via Wikipedia.

With jet engines, performance and economy are closely bound together. To be attractive to airlines an engine needs to be as efficient as possible, minimizing fuel consumption and the amount of maintenance it requires.

High fuel efficiency requires high compression ratios and engine temperatures, which in turn require extremely efficient compressors, components that are both incredibly strong and incredibly lightweight, and materials that can withstand extreme temperatures. And a commercial jet engine must successfully operate hour after hour, day after day, for tens of thousands of hours before being overhauled.

Only a handful of companies produce them: GE (both independently and via CFM, its partnership with France's Safran), Pratt and Whitney, and Rolls-Royce.

Developing a new engine is a multi-billion dollar undertaking. Pratt and Whitney spent an estimated \$10 billion (in ~2016 dollars) to develop its geared turbofan and CFM almost certainly spent billions developing its LEAP series of engines. (As with leading edge fabs and commercial aircraft, the technical and economic difficulty of building a commercial jet makes it one area of technology where China still lags. China is working on an engine for its C919, but hasn't yet succeeded.)

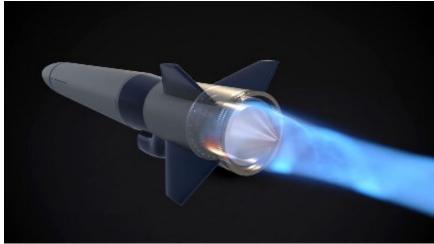
https://bit.ly/3DwjOrv

This is a fascinating study of the 90 year road to today's multi million dollar champions.

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# **Pratt & Whitney Successfully Tests Rotating Detonation Engine**

The Rotating Detonation Engine being developed by Pratt & Whitney has no moving parts, which reduces complexity and costs, and could help enable high-speed, long-range flight with increased efficiency.



A rendering released by Pratt & Whitney of a notional Rotating Detonation Engine. (Image credit: Pratt & Whitney)

RDE is a novel, disruptive engine technology being developed by both DoD and industry for affordable, highly supersonic, mass effect weapons. This technology has no moving parts, compared to conventional engines such as turbofans, so it is less complex, and could help enable high-speed, long-range flight with increased efficiency.

hese engines utilize a different thermodynamic cycle with high thermal efficiency and performance, which allows for a small, compact and cost-effective engine. This technology is getting increasingly more attention as the military is looking at better ways to reach highly supersonic and hypersonic speeds.

https://bit.ly/41w6iwh

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### **10 Little-Known Food Facts**

There are some common beliefs about food that, despite their popularity, are actually fake. While science has already done its job and debunked them, many of these myths have an explanation! If you want to know the story behind these myths and the truth revealed by nutritionists, don't miss this article!



No zits from the chocolate, but the sugar in these candies might not be so kind. Credit: Jessica Loaiza

https://bit.ly/3EPfxQr

Saved from the BS monster again... ten times in fact.

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## Meet the Shop Cats of Hong Kong's Sheung Wan District

Traditionally adopted to keep away rats from expensive produce, the feline guardians have become part of the central neighborhood's fabric.



A few years ago, after moving back to her home city of Hong Kong from New York, Erica was walking around her new neighborhood of Sheung Wan. The residential area, set close to the finance district Central on Hong Kong Island, is known for its array of dried seafood shops, with dried scallops, prawns and much more lining jars and trays in shop fronts.

"You might think that there are hygiene problems with having animals in shops, but they really have a function," she explains. "Dried seafood is really attractive to rats, but the dried seafood is actually a

delicacy [in Hong Kong] – they're very expensive. So if rats are all over them, it's big losses for the shops, so the cats come out at night to catch them

https://bit.ly/4irTa27

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#### **Avantgardey Thrilling Dance**



youtube

After becoming a Wildcard and receiving the Instant Save, Japanese dance group Avantgardey returns with another stunning dance! Avantgardey performs to "Money, Money, Money" by ABBA.

https://youtu.be/zX743cxdMgc

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# To Sleep, Perchance to Dream

Sleep is far more than just a period of rest—it's a complex, active process during which the brain cycles through distinct stages, each marked by unique patterns of brain activity.



xcode.life

While scientists still debate sleep's true purpose, research has proven it to be essential for survival. Both humans and animals suffer severe consequences without sleep, including cognitive decline, emotional instability, and eventual death. More than a third of adults regularly experience poor sleep, leading to increased risks of heart attack, Alzheimer's disease, and motor vehicle accidents.

#### **Brainwaves**

During both wake and sleep states, the brain generates electrical rhythms called <u>brainwaves</u>, which represent oscillating patterns of brain cells (known as neurons) working together. Different brainwaves are associated with specific states of consciousness. For example, high-frequency beta waves dominate during alertness, while sleep features primarily theta and delta waves.

#### Stages

The drive to sleep is regulated by our circadian rhythm, a sort of body clock mediated by a brain region called the hypothalamus. Once asleep, the human sleep cycle proceeds through <u>four stages</u>, each characterized by unique brainwave patterns and physiological changes.

Light sleep (stages 1-2) begins as our heartbeat and breathing slow, muscles relax, and brainwaves transition from wakeful alpha waves to relaxed theta waves. Brief bursts of

electrical activity called sleep spindles are especially prevalent during Stage 2 and play a critical role in memory consolidation and learning.

Deep sleep (stage 3) is characterized by further decreased heart rates and slow delta brainwaves. This stage is most prevalent in the first half of the night and provides the majority of sleep's restorative benefits.

Rapid eye movement sleep occurs in stage 4, about 90 minutes after falling asleep. During this stage, brain activity surges to near-waking levels, eyes move rapidly behind closed eyelids, and major muscles are temporarily paralyzed to prevent us from acting out our vivid dreams (how dreams work). After REM, the cycle begins again, with adults typically completing four to five cycles per night.

#### Mechanisms

During sleep, the brain performs several critical functions: <u>consolidating short-term</u> <u>memories</u> into long-term storage, preparing neurons for learning the following day, repairing tissues, and boosting the immune system.

Recent science has even shed light on a specialized "<u>cleaning system</u>" where cerebrospinal fluid is pumped through the brain to carry away toxic compounds that accumulate during wakefulness.

#### Disorders

Sleep disorders are exceedingly common and highlight the importance of a functioning sleep cycle. As an example, narcolepsy occurs when patients lack hypocretin, a brain chemical essential for regulating the sleep cycle. Patients with narcolepsy experience sudden, irresistible sleep episodes and can fall directly into REM sleep rather than progressing through the normal stages.

Other common disorders include insomnia (difficulty falling or staying asleep), sleep apnea (interrupted breathing during sleep), and REM behavior disorder (muscle paralysis fails during REM sleep).

#### Future

Scientists continue to explore promising avenues for improving our sleep and treating sleep disorders. Advanced brain imaging may soon allow us to visualize sleep's cleaning mechanisms in real-time.

Meanwhile, the rise of wearable sleep trackers is generating unprecedented amounts of sleep data—though researchers caution that current technology may not accurately measure sleep stages. Future developments in wearable sensors will likely bridge this gap, enabling earlier detection and better management of altered sleep.

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# 9 Things To Know About Holi, India's Most Colorful Festival

Here's the meaning behind the Hindu celebration.



Every Indian state celebrates Holi differently. Here in Uttar Pradesh, the women of Nandgaon (home of Hindu god Krishna) attack the men from Barsana (hometown of Radha) with wooden sticks, reenacting legend. Photograph by Ajay Aggarwal Hindustan Times/Getty Images

A kaleidoscopic cloud hangs over India, where revellers mark the arrival of spring by throwing powdered dye with abandon, spraying water, and flooding the streets for raucous fun. Holi may be traditionally Hindu, but everyone is equal during this holiday. This year on March 14, color will hide all class lines, the caste system will disappear, and foreigners will join the locals. Underneath the dancing and colorful chaos lies unique culture and deeply rooted tradition. Here's what you need to know about Holi.

https://bit.ly/43FowxM

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# Japan's 3rd Generation E10 Shinkansen Bullet Train



Moss&Fog

While places like the United States and Canada lag behind in high speed rail, other countries race ahead–literally.

Japan has announced its third-generation E10 Shinkansen bullet train, which should enter service in 2030, and reach speeds of up to 400 kph (248 mph).

https://bit.ly/4bGhScD

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# Things You Need to Know if You Move to the South.

- 1. A possum is a flat animal that sleeps in the middle of the road.
- 2. There are 5,000 types of snakes and 4,998 of them live in the South.

3. There are 10,000 types of spiders. All 10,000 of them live in the South, plus a couple no one's seen before.

- 4. If it grows, it'll stick ya. If it crawls, it'll bite cha.
- 5. Onced and Twiced are words.
- 6. It is not a shopping cart, it is a buggy!
- 7. Jawl-P? means: Did you all go to the bathroom?
- 8. People actually grow, eat, and like okra.
- 9. Fixinto is one word. It means I'm going to do something.

10. There is no such thing as lunch. There is only dinner and then there's supper.

11. Iced tea is appropriate for all meals and you start drinking it when you're two. We do like a little tea with our sugar. It is referred to as the Wine of the South.

12. Backwards and forwards means I know everything about you.

13. The word jeet is actually a question meaning, 'Did you eat?'

14. You don't have to wear a watch, because it doesn't matter what time it is, you work until you're done or it's too dark to see.

15. You don't PUSH buttons, you MASH em.

16. Y'all is singular. All Y'all is plural.

17. All the festivals across the state are named after a fruit, vegetable, grain, insect, or animal.

18. You carry jumper cables in your car for your *own* car.

19. You only own five spices: salt, pepper, Cajun seasoning, Tabasco, and ketchup.

20. The local papers cover national and international news on one page, but require 6 pages for local high school sports, motorsports, and gossip.

21. Everyone you meet is a Honey, Sugar, Miss (first name), or Mr (first name)

22. You think that the first day of deer season is a national holiday.

23. You know what a hissy fit is..

24. Fried catfish is the other white meat.

25. We don't need no dang Driver's Ed. If our mama says we can drive, we can drive!!!

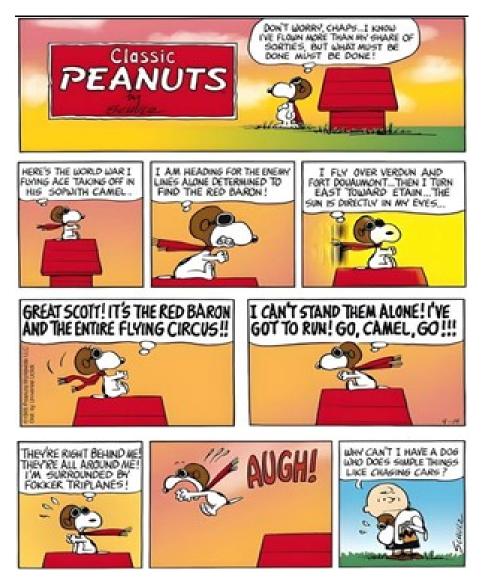
26. You understand these jokes and forward them to your Southern friends and those who just wish they were from the South.

and one more:

27. Why did the chicken cross the road? To show that stupid possum that it *can* be done!

Thanks to Charlie Block who knows whereof he speaks.





## **Postpartum Neurology**



raleighob.com

Women with postpartum depression symptoms exhibited corresponding shifts in the size of certain brain regions, according to a study this week. The study provides the first neurological evidence of the condition's impact, which affects as much as <u>one in seven</u> <u>pregnant women</u> worldwide.

Researchers analyzed a series of brain scans of 88 first-time mothers without a history of depression. They then compared the images to answers given in standard questionnaires used to diagnose postpartum depression. Nearly 30 women who showed moderate to severe symptoms of the condition saw enlargement of the amygdala and hippocampus, key regions of the brain that regulate emotion. Whether the enlarged anatomy causes the depression or vice versa remains unclear.

The condition has been studied for centuries, though data has stemmed from reported experiences rather than anatomical observations. Severe postpartum depression typically manifests as <u>extreme mood swings</u>, extended periods of sadness, and loss of sleep, and its severity distinguishes it from milder, more common "baby blues."

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## **My Walking Thoughts**

IS X XI

For Sunday March 16 2025

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#### **O Beautiful for Spacious Skies and Amber Waves of Grain**



pinterest

Before I get back to formation flight, I want... no, I *need* to tell you about my wakeup thoughts this morning. How rather than creaking and groaning in response to the aches and pains of a long and active life, I found myself mouthing the words of a song left over from another age, <u>America the Beautiful</u>, and at the instant the words. "Amber waves of grain."

Why this song, why these words, why this morning? I haven't a clue what prompted this... or after a day of reflection, maybe I do.

Maybe it was a leftover of last evening's conversation regarding our nation's apparent focus on discord, its search for meaning in the halls of politics and torts, ignoring in the process the simple beauties that surround us.

Or maybe in my dotage I'm seeking a return to that state of grace that allowed us as youngsters to view the world through simpler lenses. Whatever...

O beautiful for spacious skies, For amber waves of grain, For purple mountain majesties Above the fruited plain. America! America! God shed His grace on thee And crown thy good with brotherhood From sea to shining sea

O beautiful for pilgrim feet, Whose stern, impassioned stress A thoroughfare for freedom beat Across the wilderness! America! America! God mend thine every flaw, Confirm thy soul in self-control, Thy liberty in law! O beautiful for heroes proved In liberating strife, Who more than self their country loved And mercy more than life! America! America! May God thy gold refine, Till all success be nobleness, And every gain divine!

O beautiful for patriot dream That sees beyond the years Thine alabaster cities gleam Undimmed by human tears! America! America! God shed His grace on thee And crown thy good with brotherhood From sea to shining sea!

How about absenting yourself from the cares of the world and join me in warbling a song from our youth extoling the wonders that surround us still.

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#### Four Plane Formation: Conquering the Division Gaggle

Next on the formation agenda lay the perils of rendezvousing and then maintaining precise position control with a four-plane element—yeah, a division that throughout the rest of my military flight career would be the basic here-to-there maneuvering unit. If you've watched the Blues or Thunderbirds perform, you've seen the entire range *and* 

*then some* of non-tactical division activities many of which the rest of us would be wary of doing... things such as a diamond formation in which the leader and slot (Number Four) members fly inverted past to the oohs and ahhs of the audience.

#### The general catalog of Division arrangements are:

<u>Finger four</u>—the primary and most maneuverable parade formation -- with the wingman (Two) on one side and the second section (Three and Four) on the other. It's the leader's choice how the flight is balanced

<u>Echelon</u> – all four aircraft in a stepped back line typically used when the flight is waiting to break up for landing or practice turning rendezvous.

<u>Line Abreast</u>—where the flight is aligned with the leader's nose. This is a showoff arrangement best left to the Blues since any maneuvering by the leader—particularly one into the flight, puts everyone at risk of a mid-air.

<u>Trail</u> – Fun-and-games formation that allows the leader the greatest latitude for hard maneuvering.

Put in context, here was how my first division flight went.

I was Number Three, nominally the lead of the second section, as our flight departed the runway in 10 second intervals, heading for a running rendezvous. The leader, an instructor in a single seat F9F-8, established a slow climb at 95% thrust to allow the rest of us—three students with instructors in the back seats--to catch up. The leader's wingman, Number Two, joined on the starboard wing, while I with Number Four on my wing anchored on the leader's port side, in this manner assuming the fingertip formation.

For the next half hour using hand signals to rearrange the flight's configuration the leader wove back and forth forcing the rest of us to get used to maneuvering. When Number Two backed off from a tight wing position complaining that he was blinded looking into the sun, the leader said in a disgusted voice, "the sun's there every day, junior," which scotched that excuse for the rest of us... then and for ever more

Satisfied his charges had shown about as much improvement as was likely to take place that morning, the leader established us in right echelon and signaled for a breakup with a 10-second separation. When he heard, "Four in trail," the leader rolled into a 30-degree starboard banked turn, watching to see how each of his ducklings established his closure line. As Number Three on the first shot, I had to watch both the leader and Number Two throughout the approach until we both were tucked in on the leader's outside wing. For Number Four, the process was more difficult... all the worse if either Two or Three established a 'sucked' or worse still 'acute' closure bearing.

After two attempts in our initial position, the leader moved us to a different one. Thus, in the dozen breakup-and-rendezvous situations, each of us got to see just how important it was to establish and maintain a proper bearing. For all of us it was a true workout that by the time we were back on the deck, I was more drenched in sweat than ever before.

The debrief however took longer than any I can remember, starting with a caustic overall evaluation by the leader, and then detailed comments by each of the other instructors in turn. At the conclusion of the session, I was close to the point of hating formation flying.