

Ode to E Pluribus Unum for Sunday August 31 2025



The Night Sky from the Surface of Mars



NASA

The thin atmosphere causes minimal light scattering, making the stars appear brighter and more numerous than on Earth

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Is the Platypus the World's Strangest Mammal? Yes Indeedly

Ancient, egg-laying, poisonous, web-footed, beaver-tailed and duck-billed.



illustration from the first scientific description in 1799

The Platypus has got to be one of the strangest animals on earth. Here's a bit of a closer look. Native only to Eastern Australia, this endemic species checks all sorts of boxes for oddities.

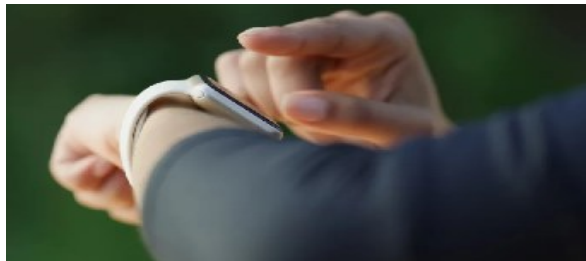
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Counting Steps for Health? Here's How Many You Really Need

There's a growing consensus among researchers on how many daily steps are needed to improve health.

Marco VDM/iStockphoto/Getty Images



From pricey wearable devices to your phone, it has never been easier to track your daily physical activity, or lack of it. And if you're like many Americans and spend [nine-plus hours sitting](#) every day, chances are you could probably stand to take a [few more steps](#).

But just how many should you aim for if you want to live a longer and healthier life? New research suggests 7,000 is a good target.

Among their findings: Taking 7,000 steps per day was associated with nearly a 50% lower risk of dying compared with the bare minimum of 2,000 steps.

The study, published in The Lancet Public Health, also showed that the chance of developing Type 2 diabetes fell by 14%, cardiovascular disease 25%, symptoms of depression 22% and dementia 38%.

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Every Building Frank Lloyd Wright Designed

Wright designed over a thousand structures and realized 532, including houses, religious spaces, commercial spaces, and even a gas station.

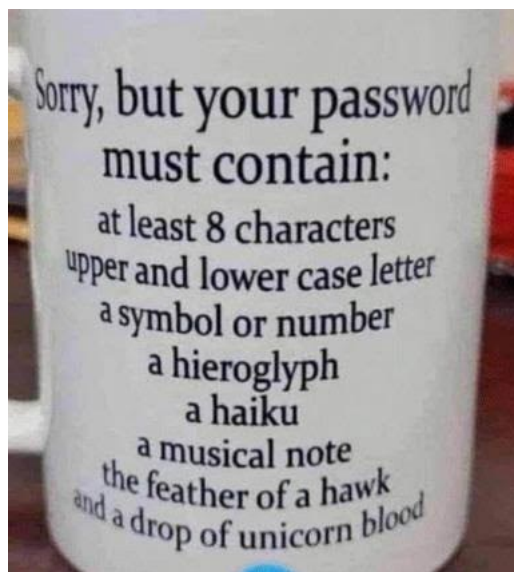


visitmarin.org

Eight of Wright's buildings have been listed as UNESCO Heritage sites (see them [here](#)), and a number of his historic homes are listed on the market, but are oddly hard to sell due to their difficult maintenance and upkeep.

<https://bit.ly/47wfDIM>

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Frank Lloyd Wright's Unrealized Buildings

Madrid-based designer, David Romero, has created nearly two dozen digital renderings of Wright's unrealized concepts.



*Lea House
David Romero*

For architect and 3D designer David Romero, Wright's work has been a source of inspiration since his earliest explorations within the field. "From the very beginning, I was drawn to his ability to bridge two seemingly opposite worlds: the rational and intellectual side of architecture, and the emotional—almost spiritual—experience of space," Romero tells Colossal. "To me, that union is the essence of what makes architecture truly powerful—and no one embodies it quite like Wright."

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America's Last WWII Ace Pilot Dies at 103



nationalww2museum.org

Donald McPherson served aboard the USS Essex as a Navy fighter pilot where he flew missions against Japanese forces during the later years of the war. McPherson enlisted in the Navy in 1942 when he was 18 years old. After completing the 18-month training program, he began flying in a F6F Hellcat as part of fighter squadron VF-83.

Born in Adams, Nebraska, McPherson returned to the Cornhusker state after the war where he worked as a rural letter carrier and farmer for over 20 years.

<https://bit.ly/4IK3dAG>

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FLASHMOB CENTRAL

"Viva la Vida" con Alice Paba



pinterest

<https://youtu.be/Utexhp-xyOw?list=RDUtexhp-xyOw>

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Burning Man 2025

Taking place now, the austere event in Nevada's Black Rock Desert revolves around burning a massive wooden effigy known as the Man. Over nine days, the inhabited space is called Black Rock City and is intended to completely disappear when it ends.



msn.com

Burning man started in 1986 as a gathering for 20 people. In 2023, over 74,000 attendees became a part of Black Rock City and got caught in the rain.

This year's theme is "Tomorrow Today," with the venue showcasing tech-forward art installations. More than 70,000 people are estimated to attend, with participants paying a sliding scale of \$550 to \$3,000 per ticket. The festival did not sell out this year and operated at a loss last year, raising concerns about its financial outlook.

<https://bit.ly/465o2BQ>

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Chords & Riffs

Dave Brubeck Lives On



creator.nightcafe.studio/

I'm not going to do any sort of biographical sketch on the man who defined and then redefined progressive jazz. Instead I'm going to ask you look at what he did over the

years with Over the Rainbow, and how he allowed differently that familiar melody to soar to impossible heights and return to earth with unbelievable simplicity.

1982 <https://youtu.be/9zDhtEPIFg0?list=RD9zDhtEPIFg0>

2000 https://youtu.be/6P_AEJGLcbU?list=RD6P_AEJGLcbU

2004 https://youtu.be/eLYi547vp_4?list=RDDeLYi547vp_4

2007 <https://youtu.be/scRRnSIP400?list=RDscRRnSIP400>

2010 <https://youtu.be/tVUgSfNSsZY?list=RDtVUgSfNSsZY>

2020 <https://youtu.be/2egzcjZxCTY?list=RD2egzcjZxCTY>

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Shorebirds Are Starting Their Long Fall Migrations.



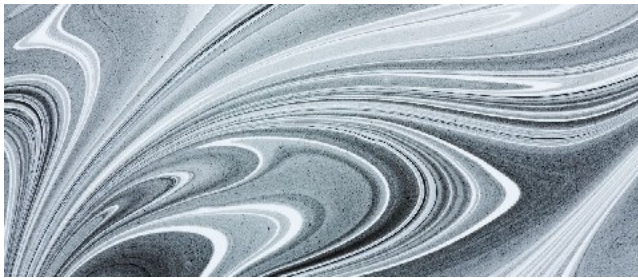
Marbled Godwit on Dauphin Island, Alabama
Andrew Haffenden / Macaulay Library.

During migration, the right location can yield a shorebird bonanza. How do a dozen or more species stay out of each other's way when they're at a sandy beach buffet? Watch this [video](#) to see a plethora of feeding styles in action.

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The Elusive Math of Rushing Rivers and Turbulent Jet Streams

Today's scientists and engineers are pretty good at predicting the trajectory of hurricanes or calculating how much water will be delivered to your faucet. But the equations for how fluids move continue to flummox mathematicians.



Quanta

Mathematicians have found creative ways to navigate the tempest of mathematical difficulty at the heart of fluid dynamics. While they remain far from achieving a complete understanding of fluids (if such a thing is possible at all), they continue to make intriguing and important progress toward that distant goal.

Even the most straightforward aspects of fluids are hard to prove mathematically. Depending on what you want to know about a fluid, you might model it in different ways. At the microscopic level, for instance, a fluid is made up of individual molecules that move around like billiard balls. But at a macroscopic level, the fluid acts as a single entity.

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New Clues Into Deadly Aortic Aneurysms and Hypertension

Study offers insights for new ways to treat and prevent both conditions

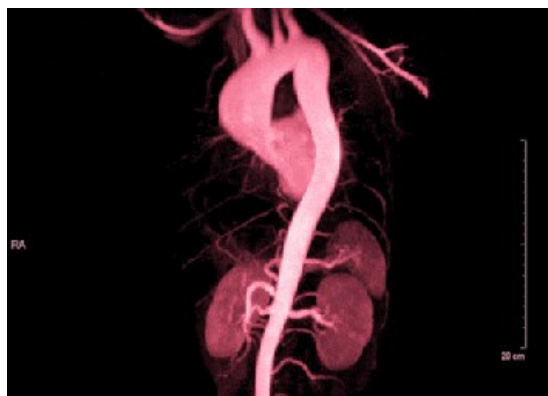


Image: Mr.Suphachai Praserdumrongchai/Istock/Getty Images Plus

Now a study led by Harvard Medical School researchers at Mass General Brigham and funded in part by the National Institutes of Health has uncovered a new pathway that fuels the rise of aortic aneurysms. The research offers clues for treatment and prevention of these aneurysms that could also address another common condition: hypertension, which affects nearly half of all US adults.

Scientists have long suspected that oxidative stress — chemical damage that occurs in cells from the buildup of toxic molecules called free radicals — plays a role in both disorders. Yet whether and how oxidative stress causes either disease has remained unclear.

The findings, described May 1 in [The Journal of Clinical Investigation](https://doi.org/10.1093/ajh/hpaa001), could inform the design of new treatments for these dangerous and often-silent killers.

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3D-Printed Steel Capsules Endure Nuclear Reactor Testing

The Department of Energy's Oak Ridge National Laboratory set a new milestone in nuclear component innovation, successfully testing two 3D-printed stainless steel experimental capsules at the lab's High Flux Isotope Reactor, or HFIR.



ORNL researchers used a laser powder-bed system at the lab's Manufacturing Demonstration Facility to 3D print 316H stainless steel capsules for use in irradiation experiments. The capsule provides a pressure and containment barrier for the experiment, which is a critical safety feature.

ORNL

An ORNL team used a laser powder-bed system at the lab's Manufacturing Demonstration Facility, or MDF, to 3D print the 316H stainless steel capsules. This type of steel is being evaluated because it offers high-temperature strength, corrosion and radiation resistance, proven nuclear-grade performance and weldability needed for safe, durable use in reactor environments. [Watch video](#)

This achievement marks an important step in demonstrating that additively manufactured components can meet the rigorous safety standards required in nuclear applications.

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Glow-in-the-Dark Animal Neon Fur Captured on Camera

The glow-in-the-dark phenomenon occurs when the mammal's fur is exposed to specific wavelengths of light



A glowing quoll in the Tasmanian wilderness.

Credit : Ben Alldridge / SWNS

As part of the 2025 [Beaker Street Science Photography Prize](#), photographer Ben Alldridge submitted a photo of a wild Eastern quoll, a carnivorous marsupial native to Tasmania, exhibiting biofluorescence.

Using invisible ultraviolet light, Alldridge was able to capture the mammal glowing in the dark, and his photo is considered the first photographic evidence of a quoll exhibiting biofluorescence in its natural habitat.

[Smithsonian Magazine](#) reported that a number of mammals around the world, many of them nocturnal, are known to exhibit this phenomenon, including polar bears, moles, zebras, wombats, armadillo and more — as well as non-mammals such as corals, insects, spiders, fish, amphibians, reptiles and birds — although the exact biological purpose of biofluorescence is still unknown.

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Next Generation Helmet Tested By F-22 Raptor Pilots



Maj. Brett Gedman, 301st Fighter Squadron, readies for a mission wearing the Next Generation Fixed Wing Helmet March 24 at Eglin Air Force Base, Fla. These tests mark the second round of developmental testing since the Air Force announced the new LIFT-manufactured helmet last year.

U.S. Air Force photo/Samuel King Jr.)

Select F-22 pilots are testing a new helmet, which is lighter and more versatile than today's HGU 55 helmets worn by most aircrews. Check out how Raptor pilots are testing these helmets, what that means for the Air Force, and future aircraft.

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Stealth Genetic Switch in Mosquitoes Halts Malaria Spread

Novel system uses CRISPR to replace one molecule and block parasites that cause malaria infection



Mosquitoes that readily transmit malarial parasites carry the FREP1 amino acid known as L224 (red dots inside mosquitoes and marked with "L"). The newly developed system uses an allelic gene drive system (scissors) to convert mosquitoes into a population that now carries the malaria-suppressing Q224 allele (highlighted in green and marked with "Q").

Credit: Audrey Yeun, Bier Lab, UC San Diego

Mosquitoes kill more people each year than any other animal. In 2023, the blood-sucking insects infected a reported 263 million people with malaria, leading to nearly 600,000 deaths, 80% of which were children.

Now, researchers at the University of California San Diego, Johns Hopkins University, UC Berkeley and the University of São Paulo have developed a new method that genetically blocks mosquitoes from transmitting malaria. The [study](#) was published July 23, 2025 in the journal Nature.

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The Air and Space Museum About to Open 5 New Galleries



Kevin Carter/Getty Images

The Smithsonian's National Air and Space Museum is in its second-to-last year of a renovation celebrating its 50th anniversary in 2026 — and Monday, it'll open five new exhibitions displaying thousands of artifacts. Among the [new galleries](#) are Futures in Space, featuring advances in space exploration technology, and the Allan and Shelley Holt Innovations Gallery, focusing on how aerospace innovations contribute to combating climate change.

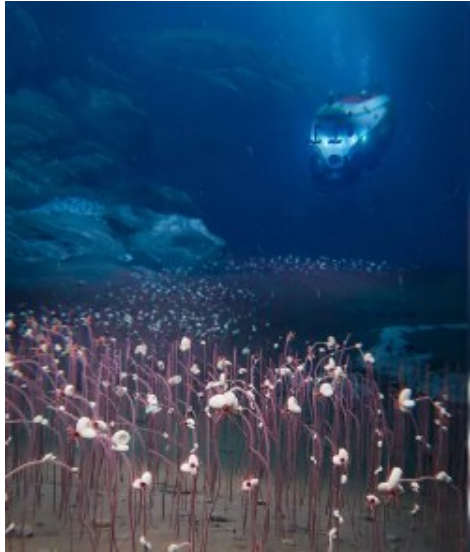
Visitors will also have the chance to learn about the origins of military aviation in an exhibit spotlighting World War I, and view some of the museum's most iconic items — including the first aircraft to break the sound barrier and John Glenn's Mercury Friendship 7 — in the Boeing Milestones of Flight Hall. "Everything in this museum, with the exception of our lunar rock, is a consequence of human ingenuity," Museum Director Chris Browne told CBS Evening News.

Also opening Monday are the Lockheed Martin IMAX Theater and a revamped entrance on Jefferson Drive. The museum is set to round out its renovation with [seven more galleries](#) debuting July 1, 2026, which will complete the redesign of all 20 galleries that began in 2018.

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Deepest Complex Ecosystem Found 9,000 Meters Down Below



The record-breaking ecosystem spans a distance of 2,500 kilometers.

It all gets a bit Avatar down in the hadal zone.

Image credit: Institute of Deep-sea Science and Engineering, CAS (IDSSE, CAS)

Life can thrive in some seriously extreme environments, from the salty to the cold, and now the surprisingly deep, as scientists have found the deepest complex ecosystem ever discovered. The hadal trenches these animals call home can be as deep as 9,533 meters (31,276 feet) and play host to species that get their energy from chemical reactions. Handy, given there's no sunlight in the hadal zone.

Getting your energy from chemical reactions is what's known as [chemosynthesis](#). We've found animals that live this way in places like hydrothermal vents and cold seeps, but rarely at depths beyond 7,000 meters (22,966 feet). That said, we hadn't really tried looking any deeper than that for this kind of life, until now.

This new study sought to take a deeper look at life in the hadal zone and discover whether chemosynthetic communities could be lurking here. It would seem they have been rewarded, as what they discovered in Kuril–Kamchatka and western Aleutian Trenches pushes the known limits of chemosynthetic life deeper than ever before.

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Cockatoos Have 30 Unique Dance Moves—including Headbanging

Researchers now know why the caged bird dances: a form of mentally enriching play



science.org

The next time you go dancing, borrow some moves from a cockatoo. A new study, published today in PLOS ONE, identifies and describes 30 dance moves in captive cockatoos and suggests dancing can be a form of mentally enriching play for caged birds.

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Quick Animal Facts



The vast majority of frogs
aren't forklift certified

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The \$5.6T Pharmaceutical Industry

Pharma giants don't just make medicine—they shape the future of healthcare. From determining which treatments reach patients to setting costs and driving innovation, their influence extends across both health outcomes and financial markets.



machinewiz.in

Eli Lilly dominates the industry with a staggering market cap of \$686 billion, nearly double that of Johnson & Johnson, the second largest company, at \$359 billion. Eli Lilly's value has skyrocketed since 2020, climbing from roughly \$130 billion, largely fueled by the runaway success of its weight-loss drugs, Mounjaro and Zepbound.

Doctors prescribe and patients decide, but pharma giants ultimately control which drugs they develop, who gets access, and what price they charge. Understanding who dominates this \$5.6 trillion industry provides critical insight into the future of healthcare.

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Alas, the Bulwer Lytton Fiction Contest is No More

Founded in 1983, the contest was to compose the most atrocious opening sentence to the worst novel never written.



writers digest

The most complete list of opening sentences there ever was. An example in memory of this great tradition:

"Space Fleet Commander Brad Brad sat in silence, surrounded by a slowly dissipating cloud of smoke, maintaining the same forlorn frown that had been fixed upon his face since he'd accidentally destroyed the phenomenon known as time, thirteen inches ago."

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

I've tried but I don't think I can match much less beat any of the winners.

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Xfinity Presents "The Aviators"/ The Making of The Aviators"

Go behind the scenes of "The Aviators," directed by Oscar winner Kathryn Bigelow. Watch as real veteran pilots reunite and return to the cockpit after 50 years in this powerful story of connection, friendship and a flight they will never forget, brought to life by Xfinity.



A group of veterans reunite and take flight once again with the help of a crafty granddaughter and the power of Xfinity Internet. Directed by Oscar winner Kathryn Bigelow (The Hurt Locker, Zero Dark Thirty, Point Break and more).

<https://youtu.be/PpvLye7fOT4>

<https://youtu.be/7XwBGpaIMH8>

I received these from Roger Conley, with whom I worked at HDR Sciences 45 years ago, though it as so many other things feel as if they happened only yesterday. Along with the videos he sent this piece on his family history.

My dad was an aviator at the tail end of WWII.

He was a junior at Nebraska City High School when Pearl Harbor was attacked. As soon as school was out for Christmas Break he and his buddies drove to Kansas City to volunteer

The recruiters sent them home to join up after graduation 18 months later, fall 1943. He joined the V-12 program that combined college with military training for posting as a Naval aviator.

He trained in old Stearman bi-planes and in Douglas Dauntless dive bombers - before reliable bomb sights - but didn't get his wings until the war was ending.

He opted to finish his flight training but there were very few flying slots available so he became an insurance guy and stayed in the reserves for a decade or so training aerial reconnaissance during Korea.

I had this white silk scarf for several years - cut from a gunnery practice target sleeve - awarded for achieving some level of aerial shooting proficiency.

He and his officer training classmates held periodic reunions like this one for decades - the last one when they were all in their eighties.

For the last one, was checking him into a nice hotel in suburban Chicago when we were informed that his roommate, Wally, was already checked in. They were both widowers so sharing a room.

I asked if they were roommates during training. They weren't just roommates, they were bunkmates!

One of the guys there that evening had a photo of their barracks - a double line of triple decker bunks lining both sides of the room.

The F-4's you flew were much closer to those in the Aviators ad - but the spirit and camaraderie were shared and honored.

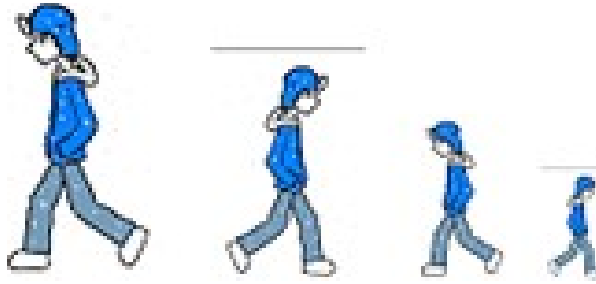
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Not sure which is more funny; the church name, the city or the message. 😂



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My Walking Thoughts



For Sunday August 31 2025

Welcome to the Squadron

VMA 533s workday for the enlisted troops began at 0700 – two hours earlier for those involved in preparing for the early launch. The first event for the officers was the 0800 All Pilots Meeting (APM) at which it was the habit of the Commanding Officer to bring the group to some semblance of order, issue the plan of the day, share some piece of wisdom, then turn the festivities over to whoever was next in the squadron hierarchy.

Thus it was the XO to whom fell the duty of introducing me to the assemblage. “Second Lieutenant John H. Trotti from California,” he announced in a way that made it sound that my place of origin left some sort of stain, a sentiment I found strange since in fact he was a native of Vista, CA.

Someone in the peanut gallery said, “Well it was bound to happen,” in response to which another voice asked, “What was?” leaving to the initiator to observe, “Sooner or later they were bound to send us a wop.” This launched a fusillade of what would today be considered politically inappropriate comments. But back then, in that location, and under circumstances that were designed to separate sheep from the goats – read that “Does this newbie have what it takes to be part of us?” –the opening gambit in the bonding process.

The Magic in Numbers and Names

It’s here that I need to stop the narrative and take you into the bowels of what is the heart of military aviation... the squadron.

It’s tempting to equate a squadron to a sports team and there are some obvious similarities, but while the members of your favorite football team bond to do damage to their foes, the purpose of their warfare is a trophy, not dealing out death while working to avoid it.

Because of this, one’s squadron leaves a stamp more indelible than that of an Alabama, USC, or the Broncos. It is the repository of all knowledge, lore, fable, rumor, and

misinformation relating not merely to the aircraft and mission at hand, but to the world of military aviation in general.

It is the culture bearer in a world that leaves few tracks, the leaven that makes each outfit a discrete entity. You might look at a squadron and say "Those people are what make VMA-533 what it is," but you'd have it backwards. The truth is that VMA-533 makes those people what they are... in the mold of what VMA-533 has always been.

When I arrived in 1961 Naval Aviation's accident fatality rate stood at a whopping 6.5 per 1000 flight hours, a statistic that neither in terms of aircraft or pilots was sustainable (Compare that with today's <1 per 10000 hours.) so the push was on to find ways to stem the retro tide.

Traditionally, aviation safety was delivered from on high by means of signs and publications from the Safety Center (duffers will remember Grandpa Pettibone's rants in reviewing the misdeeds of hapless aviators), but basically it was left to squadrons to deal with the issue directly... and this clearly was not working

So are you ready for a little treason?

Dating from their birth in WWI, squadrons had been boys clubs, marching and chowder societies where aviators took to the air to perform their missions, returned to talk about their exploits (in and out of the sky) and to justify their existence by managing some necessary paperwork. It was not theirs to worry overly much about statistics and big pictures... and this was essentially the world I found myself stepping into in 1961.

Also it's here I'm going to jump ahead to early 1962 and presage the implementation of the Naval Aviation Training and Operations Procedures System (NATOPS), that landed on Naval Aviation with Godzilla-like force, saying "Ok you bunch of Smilin' Jacks, there'll be no more of this 'kick the tires, light the fires, and first one airborne has the lead hogwash,' we're going to confront the safety issue head on by the simple expedient of *standardization*." Of course we nuggets groaned sensing that the program would rob us of all the fun, but we obeyed once it was explained, "Get with NATOPS or we'll send you to where you spend your life digging foxholes."

In future Walking Thoughts I'll put NATOPS' role and accomplishments into scene, but just for starters consider that in fewer than three years standardization drove the accident rate down to less than 1 per 1000 hours... with us nuggets in the amen corner singing its praises as if it had been our idea in the first place.

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Tune in next week to see more on the bonding process.

Ps. I'd really like feedback on this, particularly by those who find my vision objectionable. Have at me guns blazing if that's your view.

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