

Welcome to the January 25th, 2017 Edition of THE REVENGE HUMP DAY!

Chattacon was held at the Chattanooga Choo Choo last weekend and I was told that around 500 fans attended the festivities. I am sorry to say that I was not one of them. I have been having some health problems and my cardiologist is in the process of switching me over to a new heart medication called Entresto. I told SHE WHO MUST BE OBEYED that I was hallucinating after the first day on Entresto. She asked me what I was talking about and I told her that I thought I was feeling better. ;^) Only time will tell, but I have high hopes.

Karen Boyd, a wonderful huckster of trinkets at Chattacon, was staying with us at Casa Bolgeo and I would pump her for gossip every night she came home. That's how I found out about the passing of Larry Smith who I have known for over 20 years or more. That one came as a blow to me. I know that the older you get, the more of this type of news you should expect. But, it doesn't soften the blow or make it easier to accept when it comes. Anyway, Karen would go down the line of who was there and what was happening for me. She even said that a number of people sent me their best when they found out that I wasn't there.

I also kept up with what was going on through Facebook. There were a number of pictures from the LibertyCon party that Brandy, Empress of the Know Universe, and her merry crew through at Chattacon on Friday night. Evidently they used the Southern Room in Hotel 1 as the Party Room and it worked out pretty good for them.

Mike Wilmoth, one of my old friends from Phoenix, Arizona also attended Chattacon this year. On Sunday night, Mike came out to the house and we ordered pizza and a great time discussing what when on at the convention and sharing old stories about our trips to New Zealand and Australia with Linda and Karen. Great times!

On a totally different thing, I have to tell all of you about the funniest commercial I have seen in years and this is not a joke and it's the truth. There is a local commercial running on TV for a ladies hair saloon called 'Bushwackers'. The lady in charge of it is Kathy Bates and she is listed on the air as 'The Master Stylist'. Now come on guys, I have as sick and twisted a mind as the next guy but you can't tell me that someone else didn't come of with the following. "Bushwacker's" Master Bates! OMG!

So on that "Brilliant Observation", why don't y'all sit back and relax because here's the best in gossip, jokes and science for your reading pleasure!

Uncle Timmy

<G>~<O>~<S>~<S>~<I>~<P>~<S>~<T>~<A>~<R>~<T>~<S>~<H>~<E>~<R>~<E>~<I>

LibertyCon Con Report: ChattaCon

From: "Kevin Fritz Fotovich" Fritz@LibertyCon.org

Chattacon 42 at the Chattanooga Choo Choo has now come and gone, and LibertyCon was there to experience the whole thing.

We helped to kick off the Friday Night festivities with a LibertyCon Party held in the Southern Room as opposed to a hotel room. This worked out GREAT for a number of reasons:

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1) There we PLENTY of room for the large number of folks that came and enjoyed the party. For quite a while throughout the night the room was packed! There was ample room to set up a few tables and chairs, a bar, and food table.

2) Due to limited hotel room accommodations, not everyone at the Con was staying at the hotel. This would have made access to the party problematic had it been in a hotel room. But Southern, being on the ground floor, had a dock and back door that folks could walk up to and into the party. We put up plenty of lights on the outside of the party and that drew in con folks like moths.

3) Did I mention that there was a whole lot of room?

Around 5pm on Friday evening we started transforming and decorating the daytime gaming room into a party room that was to start at 9pm that night. There were LibertyCon posters, stars, streamers, and a decorated Fritz walking around as Colonel Secretary Liberty. There was little doubt as to which party folks were walking into as they entered the room.



As noted earlier, this party was heavily attended. Adding to the revelry, The LC 30 Anniversary Guest of Honor, John Ringo, made an appearance, as well as a number of other past GoHs and lots of LC friends. Of special note, LC Director Mathew Fanny, to the enjoyment of everyone, made a surprise visit all the way from Washington DC (well, close enough).

The party could have lasted well into the night, but the Southern Room did have a shutdown time, so we started closing up shop and had everything cleaned up and transformed back into a gaming room by 1am.

The party couldn't have happened without all the help of the fine LibertyCon Staff that volunteered to help set up and run the party. We've said it before and we'll say it again: LibertyCon has one of the best staffs that a con could possibly hope for. Without your help, dedication, and enthusiasm, LibertyCon wouldn't exist, let alone the kick ass party that we held at ChattaCon.

The LibertyCon Party was on Friday Night. That freed up the rest of the weekend to simply enjoy the Con. There were plenty of events, games, programs, dealers, and festivities to choose from throughout the entire weekend. If anyone found themselves bored throughout the weekend at any time then that would have to be on them.

The ChattaCon staff did an outstanding job on all accounts on all levels of this convention. Super Kudo's to them for putting on a damned fine show!!!

Also, super kudo's to the Hotel Staff. They were absolutely on top of their game this weekend.

Only one thing came to mind on Sunday as I was leaving Chattacon 42 to head back home:

So long ChattaCon 42, and thanks for all the fish!

Colonel Kevin Fritz Fotovich
LibertyCon Secretary

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MELISSA GAY WON PEOPLES CHOICE FOR
"COSMIC DREAMS" AT CHATTACON

From Melissa Gay's Facebook Page
shared [Chattacon's photo](#).

[January 22 at 11:59pm](#) ·

I am immensely grateful to the fans of Chattacon, who voted my painting "Cosmic Dreams" as the People's Choice award winner! Also to the Art Show jury for selecting that same painting as the First Place Professional Science Fiction winner! I am blown away!!! Chattacon was this painting's maiden voyage out into the world. I *just* finished it, and except for work-in-progress shots, it has not yet been seen online, either. Thank you all for giving it such a warm reception!



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LARRY SMITH BOOKSELLER PASSED AWAY ON JANUARY 20TH

From: Curt Phillips, Sue Phillips, Jim Woosley and a number of other sources

Atlanta fan Sue Phillips has just posted on Facebook that Larry Smith has died...

"Larry Smith died today. If you've bought new books at cons, you could have bought them from him. I've known him for years and it is a great loss to the SF lit community. RIP."

we have lost our good friend Larry Smith this morning. He collapsed and died on the way to surgery, reportedly from an Aortic Aneurisym.

Evidently Larry was at home in Ohio while his wife Sally had gone to this weekend's Chattacon in Chattanooga Tennessee. It's said that Sally is looking for "a fast way to get home" at this hour.

Larry Smith was a well known SF specialty bookseller who was very well known at conventions throughout the American South and Midwest. A great many SF readers - including me - bought from his wonderful tables at conventions for many years. He bought the bookselling business started and operated by another fine bookman, Dick Spellman a few decades ago.

This is a great loss for the SF community nationwide. Larry was a good fan and a good man.

~~~~~

From Naomi Fisher and Dean Sweatman via the Southern Fandom Classic Yahoo Users Group

Larry was a classic curmudgeon; a sourpuss who wielded sarcasm as focused as a laser drill; a grouchy old fan, and proud of it. But he was also incredibly kind at unexpected times and in odd ways, like slipping the first two of Le Guin's CATWINGS series (which he'd seen seven year-old Grace longing for) into my <sup>3</sup>Already Paid<sup>2</sup> stack, when he knew I had to watch my pennies, then roaring, "you think I made a MISTAKEŠ?!!?", with his most ferocious glare, when I foolishly tried to pay for them. He was a truly fascinating man to chat with, and one of the sharpest, best-read, and knowledgeable fen around. We rarely agreed on politics, but we always agreed on the value of great books! He also congratulated us, every time he saw us or Grace, for successfully instilling the love of reading in her – I DON'T think that was just for providing him a terrific future customer. For well over a decade, most Worldcon Dealers<sup>1</sup> Rooms in the US were run by either him or Steve Francis, as they all but alternated years. I have no idea how future concons will find anyone willing, or able, to give the unstinting effort and expertise that he brought to that thankless job, year after year.

Larry and his wife, Sally Kobee, were a huge influence on my reading for the last quarter-century, introducing me to all sorts of books I might never have found on my own, everything from classic James Schmitz SF tales, to a collection of non-fiction science essays on octopi, to snarky urban fantasy by Tanya Huff. They welcomed me into their home when I found myself stranded by a snowstorm in Columbus, and drove me to the airport when even taxi drivers refused to brave the icy roads (<sup>3</sup>They'll have runways cleared and salted, even if our road crews are gutless wonders!<sup>2</sup>, he proclaimedŠ and he was RIGHT!), and waited at the curb (it was too cold for the TSA's goons to bother running them off) till I'd made sure my new flight was on schedule. And for all of Larry's temper and his (in)famous intolerance of fools, he was a GOOD human being, and a surprisingly sweet guy under the huff and bluster. I'm privileged to have had him as a friend.

Our sympathies and prayers go out to his family, especially to Sally how horribly hard it must be, to be so far away at such a devastating time! - as well as our fervent hope for her safe travel home.

Naomi

Updates: Sally has arrived home safely a friend drove her home from Chattacon and funeral arrangements are being made for next weekend. Will post those when I know them. And Ralph (Larry and Sally's son) and Sally's mother were with Larry at the hospital, and were, undoubtedly, the only reason he was even there! Larry was almost as stubborn about avoiding hospitals as Khen Moore, and Khen had to quite literally be hauled out picked up and physically carried to the car, protesting every step of the way (<sup>3</sup>Awww, it's just a stomachache I'll lie down a while, and it'll go awayŠ<sup>2</sup>) to get him to go at all.

I HAVE KNOWN LARRY FOR SO MANY YEARS THAT I CAN'T COUNT THAT HIGH. HE WAS AN OLD GRUMP THAT I REALLY ENJOYED. WE WERE ALWAYS CORDIAL AND I ALWAYS

RESPECTED HIS TALENT AS A BOOKSELLER AND A MANAGER OF HUCKSTER ROOMS. FROM SOMEONE WHO RAN CONVENTIONS FOR 30 YEARS I CAN TELL YOU THAT I HIGH PRAISE. LARRY AND SALLY WERE ALWAYS THE FIRST PEOPLE I ASKED IF THEY WANTED TABLES IN ANY CONVENTION I RAN. SOME OF YOU MIGHT THINK THAT IS SHALLOW PRAISE FOR LARRY, BUT I HAD A PROFESSIONAL RELATIONSHIP WITH HIM THAT I HIGHLY CHERISHED. I WILL MISS HIM. REST WELL MY FRIEND IN THE ARMS OF THE LORD. YOU WILL BE MISSED BY YOUR LOVING WIFE, SON AND A LEGION OF FRIENDS. TIM

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## CBS, PARAMOUNT SETTLE LAWSUIT OVER 'STAR TREK' FAN FILM

From: "Tim Bolgeo" [tbolgeo@epbf.com](mailto:tbolgeo@epbf.com)

JANUARY 20, 2017 11:43am PT by Eriq Gardner

<http://www.hollywoodreporter.com/thr-esq/cbs-paramount-settle-lawsuit-star-trek-fan-film-966433>



A deal comes as the the studios were prepared to head to an unexplored copyright galaxy at trial on Jan. 31.

Stand down from battle stations. Star Trek rights holders CBS and Paramount have seen the logic of settling a copyright suit against Alec Peters, who solicited money on crowdfunding sites and hired professionals to make a YouTube short and a script of a planned feature film focused on a fictional event — a Starfleet captain's victory in a war with the Klingon Empire — referenced in the original 1960s Gene Roddenberry television series. Thanks to the settlement, CBS and Paramount won't be going to trial on Stardate 47634.44, known to most as Jan. 31, 2017.

According to a joint statement, "Paramount Pictures Corporation, CBS Studios Inc., Axanar Productions, Inc. and Alec Peters are pleased to announce that the litigation regarding Axanar's film Prelude to Axanar and its proposed film Axanar has been resolved. Axanar and Mr. Peters acknowledge that both films were not approved by Paramount or CBS, and that both works crossed boundaries acceptable to CBS and Paramount relating to copyright law."

Peters' Axanar video and script, which feature such arguably copyrighted elements as Vulcan ears, the Klingon language and an obscure character from a 1969 episode, sparked a lawsuit in December 2015. The litigation then proceeded at warp speed with the case almost making it to trial in just 13 months, an amazingly brisk pace by typical standards. Before R. Gary Klausner, the same federal judge in Los Angeles who presided over the copyright trial in 2016 concerning Led Zeppelin's "Stairway to Heaven," the case charted an unexplored copyright galaxy. Although there have been past legal disputes over such fare as Harry Potter and Seinfeld encyclopedias, as well as a closely watched battle a few years back over an unauthorized sequel to J.D. Salinger's *Catcher in the Rye*, this one has boldly gone places. "There's never really been a trial over fan fiction before," says David Kluff, a partner at Foley Hoag who has written about Star Trek litigation.

News of the lawsuit brought mixed emotions on the part of the famously hard-core aficionados of Star Trek.

Some were astounded when CBS and Paramount sued after decades of turning a blind eye to fan-made works. But in taking action over Peters' video, the studios aimed to convey the message that professional-quality "derivatives" of its films and series wouldn't be tolerated (Paramount released a Star Trek film last summer and CBS has a new Trek series coming to its All Access streaming service in March). Upon widespread concern caused by the lawsuit, the companies put out "guidelines" so fans can stay legally in bounds with amateur productions.

The case is now ending, which probably means no one will ever get to see the several-hour-long highlight reel of episodes and movies being prepared by attorneys for CBS and Paramount for the purpose of introducing jurors to the franchise's intricate universe.

Instead, when Axanar comes out, it will look different.

"Axanar and Mr. Peters have agreed to make substantial changes to Axanar to resolve this litigation, and have also assured the copyright holders that any future Star Trek fan films produced by Axanar or Mr. Peters will be in accordance with the 'Guidelines for Fan Films' distributed by CBS and Paramount in June 2016," states the parties' joint announcement of a settlement.

Creators of parodies or homages often argue they qualify as "fair use." But a summary judgment ruling in January from Klausner took away fair use as a defense, which for Peters was the equivalent of going into battle with a starship's shields down. What's more, the judge found under an objective analysis that the YouTube video, dubbed *Prelude to Axanar*, was too congruent to Star Trek, leaving a jury to decide whether a reasonable person would find the total concept and feel of the works to be substantially similar. In other words, Peters' best hope to avoid an adverse verdict was for jurors to look at Axanar and conclude it doesn't feel authentically Star Trek.

"It was first presented to me as something very raw and unformed," recalls Christian Gossett, the director hired to take Axanar, he says, from nerd-horrible to Trek-worthy. "Once it became clear that Prelude was not a Star Trek spec for CBS but a fundraising tool that generated over \$1 million [in crowdfunding], I suspected that a lawsuit might follow."

Kluft can't recall any instance when a jury has found insubstantial similarity after a judge has concluded otherwise. The fact that CBS and Paramount have looked the other way, maybe even encouraging past Trek fan fiction, probably wouldn't have mattered much on the issue of liability. (It may have factored more had CBS and Paramount brought a separate claim of trademark infringement. Failing to police a mark holds consequences, and the studios' decision to give the defendant a pass here deserves at least some notice.)

"You got sued because you are too good," says Kluft, referring to Peters. "It's a compliment."

The trial that would have been is somewhat of a moot point now, but it might help to explain what the parties were thinking by striking a deal. At a pretrial conference two weeks ago, Klausner told the parties there would have been three big issues. Besides similarity, a jury would also entertain whether Peters — a lawyer by training who runs a merchandising website — acted willfully in committing infringements, and also, what damages to assess. These latter aspects could have become the most important at trial and may have factored as the parties negotiated a settlement months after premature talk of a deal, spurred by comments by Star Trek Beyond executive producer J.J. Abrams at a promotional event.

For the prospective trial, CBS and Paramount had a big decision to make. They could have either gone after profits — which they estimated to be about \$1.4 million in income from Axanar (possibly from the crowdfunding campaign and ad revenue from YouTube) — or elect statutory damages, which can be up to \$150,000 per infringed work. That might not sound like much, but adding up the hundreds of copyrighted materials used in Axanar — TV episodes, more than a dozen movies and all those elements like Starfleet uniforms — it could have theoretically computed to damages surpassing \$100 million. The complexity of figuring out what copyrights were at issue was one of the things that made a case covering a five-decade-old entertainment franchise somewhat unique.

David Grossman, the plaintiffs' attorney, had told the judge he'd indicate his choice of actual damages or statutory damages on the first day of trial. Meanwhile, Peters' attorney Erin Ranahan (working pro bono) was preparing to use the studios' lack of pre-litigation warnings to knock the allegation of willfulness and had hoped her damages expert would tell jurors that fan-made fiction hardly makes a dent in CBS/Paramount's Star Trek earnings and represents free promotion.

The choice also represented the difficulty for CBS and Paramount in figuring out what constituted a true victory here. Whatever the result of the trial, the dispute could have dragged onto an appeals court where Peters may have challenged the judge's decision not to let him argue before a jury that Axanar is a transformative fair use of copyrighted material. Meanwhile, a humongous verdict could have driven Peters into bankruptcy with the studios having little hope of collecting. More importantly, CBS and Paramount could have suffered bad publicity from being a bullying Borg at a time when a new Star Trek is about to launch on CBS All Access, something Star Trek fans — and even Abrams and Star Trek Beyond director Justin Lin might not have tolerated.

Instead, the parties have made arrangements to move on. Maybe, to quote one famous Vulcan, they discovered that "the needs of the many outweigh the needs of the few."

The joint statement from the parties linked to the guidelines and added, "Paramount and CBS would like Star Trek fans, with their boundless creativity and passion, to 'Live Long and Prosper.'"

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THE OFFICIAL TITLE FOR STAR WARS: EPISODE VIII REVEALED

From: "Stephanie Osborn"



FILMS // JANUARY 23, 2017

<http://www.starwars.com/news/the-official-title-for-star-wars-episode-viii-revealed?cmp=smc%7C785924754>

ANNOUNCING THE NAME OF THE NEXT FILM IN THE SKYWALKER SAGA.

We have the greatest fans in this or any other galaxy. In appreciation of the fans, we wanted them to be the first to know the title of the next chapter in the Skywalker saga: STAR WARS: THE LAST JEDI.

THE LAST JEDI is written and directed by Rian Johnson and produced by Kathleen Kennedy and Ram Bergman and executive produced by J.J. Abrams, Jason McGatlin, and Tom Karnowski.

STAR WARS: THE LAST JEDI is scheduled for release December 15, 2017.

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CÉLINE DION - MY HEART WILL GO ON

From: "Jim Woosley" [Jimwoosley@aol.com](mailto:Jimwoosley@aol.com)

I know everyone is probably tired of the song, but the effects in this live stage version are exquisite...

<https://www.youtube.com/watch?v=WNIPqafd4As>

GREAT SONG, GREAT PRODUCTION. UT

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BUY MILK IN THESE 15 STATES? A REFUND MAY BE OWED TO YOU

From: "Chris Cowan" [cowanc1028@earthlink.net](mailto:cowanc1028@earthlink.net)

Scripps National Desk, January 18, 2017

<http://www.newsnet5.com/news/national/class-action-lawsuit-settlement-means-anyone-who-bought-milk-in-michigan-since-2003-is-due-a-refund>

Consumers who bought milk in the last 14 years could be due a refund after a \$52 million settlement was reached over dairy price-fixing.

According to a news release from Hagens Berman, the class counsel in the case, anyone who purchased milk or fresh milk products in 15 states may be eligible for reimbursement. States include Arizona, California, the District of Columbia, Kansas, Massachusetts, Michigan, Missouri, Nebraska, Nevada, New Hampshire, Oregon, South Dakota, Tennessee, Vermont, West Virginia, and Wisconsin.

No proof of purchase is needed to get a refund, which will be between \$45 and \$70 per person.

Milk consumers have until Jan. 31 to file a claim, according to the class action form website, <http://www.boughtmilk.com/>. It says anyone with questions may call (877) 417-4561.

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I WENT TO THE WEBSITE AND SIGNED UP TO SEE IF IT WAS KOSHER. IT LOOKED OK TO ME AND WHO KNOW, I COULD USE \$70. UT

From Christina: "You forgot to mention the 10% "finder's fee" to be sent to me in small unmarked bills.

Hope you and Brandy can collect!"

YEA, SURE, WHEN I GET PAID. UT

<L>~<I>~<B>~<E>~<R>~<T>~<Y>~<C>~<O>~<N>

Re: Baen Books list of publications available for awards

From: "Rick Boatright" [rboatright@gmail.com](mailto:rboatright@gmail.com)

Sadly, my first 1632 book with my name on the FRONT, and myself, aren't listed in the author's alley listing with all the cool covers...

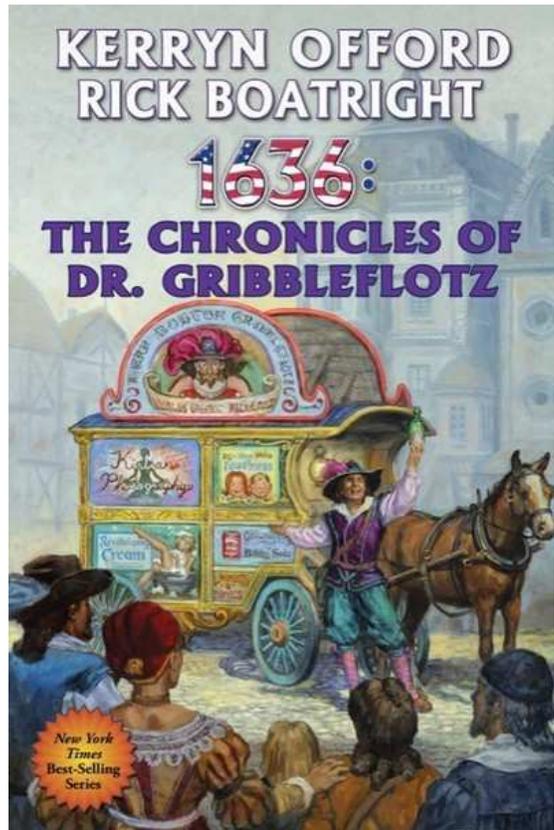
Could you possibly, please, add Rick Boatright and "The Chronicles of Dr. Gribbleflotz" to author's alley?

<http://www.baen.com/1636-the-chronicles-of-dr-gribbleflotz.html>

<https://www.amazon.com/1636-Chronicles-Gribbleflotz-Ring-Fire-ebook/dp/B01II4MSZE/>

Thanks so much. Rick

SORRY FOR MISSING IT RICK BECAUSE I PERSONALLY THOUGHT IT WAS ONE OF THE BEST OF THE YEAR. TIM



<T>~<H>~<E>~<J>~<O>~<K>~<E>~<S>~<S>~<T>~<A>~<R>~<T>~<H>~<E>~<R>~<E>

From: "Mike Waldrip" [waldripk@gmail.com](mailto:waldripk@gmail.com)

PUNS - FORGIVE ME

I tried to catch some fog. But I mist.

When chemists die, they barium.

Jokes about German sausage are the wurst.

The soldier that survived mustard gas and pepper spray is now a seasoned veteran.

I know a guy who's addicted to brake fluid. But he says he can stop anytime.

How does Moses make his tea? Hebrews it.

I stayed up all night to see where the sun went. Then it dawned on me.

This girl said she recognized me from the vegetarian club, but I'd never met herbivore.

I'm reading a book about anti-gravity. I just can't put it down.

I did a theatrical performance about puns. It was a play on words.

They told me I had type A blood, but it was a typo.

A dyslexic man walked into a bra.

When you get a bladder infection, urine trouble.

I didn't like my mustache at first. Then it grew on me.

A cross-eyed teacher lost her job because she couldn't control her pupils.

What does a clock do when it's hungry? It goes back four seconds.

I wondered why the ball was getting bigger. Then it hit me!

What do you call a dinosaur with an extensive vocabulary? A thesaurus.

England has no kidney bank, but it does have a Liverpool.

I used to be a banker, but then I lost interest.

I dropped out of communism class because of lousy Marx.

All the toilets in London police stations have been stolen. Police say they have nothing to go on.

I took the job at a bakery because I kneaded dough.

Broken pencils are pointless.

Cartoonist found dead in home. Details are sketchy.

Velcro -- what a rip off!

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**BE STRONG**

A man escapes from prison where he has been for 15 years. He breaks into a house to look for money and guns and finds a young couple in bed. He orders the guy out of bed and ties him to a chair while tying the girl to the bed. He gets on top of her, kisses her neck, then gets up and goes into the bathroom.

While he's in there, the husband tells his wife: "Listen, this guy's an escaped convict, look at his clothes! He's probably spent lots of time in jail and hasn't seen a woman in years. I saw how he kissed your neck. If he wants to sleep with you, don't resist, don't complain, do whatever he tells you. Satisfy him no matter how much he nauseates you. This guy is probably very dangerous. If he gets angry, he'll kill us. Be strong, honey. I love you."

To which his wife responds: "He wasn't kissing my neck. He was whispering in my ear. He told me he was gay, thought you were cute, and asked me if we had any Vaseline. I told him it was in the bathroom. Be strong honey. I love you too!"

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#### **DIFFERENCE BETWEEN AN OFFICER AND AN NCO.**

A young Naval officer was severely wounded in the head by a flight deck accident, but the only visible, permanent injury was that both of his ears were amputated. Since his remaining hearing was sufficient, he remained in the Navy. Many years later he eventually rose to the rank of Rear Admiral. He was, however, very sensitive about his appearance.

One day the Admiral was interviewing three servicemen who were candidates for his headquarters staff.

The first was a Marine Major, a helicopter pilot, and it was a great interview. At the end of the interview the Admiral asked him, 'Do you notice anything different about me?'

The young officer answered, 'Why, yes, Sir, I couldn't help but notice that you have no ears.'

The Admiral was displeased with his lack of tact and threw him out.

The second was with a Navy Lieutenant, and he was even better. The Admiral then asked him the same question, 'Do you notice anything different about me?'

He replied sheepishly, 'Well, sir, you have no ears.'

The Admiral also threw him out.

The third interview was with an old Master Chief, an Airdale and staff-trained NCO. He was smart, articulate, fit, looked sharp, and seemed to know more than the two officers combined.

The Admiral liked this guy, and went ahead with the same question, 'Do you notice anything different about me?'

To his surprise the Master Chief said, 'Yes, sir, you wear contact lenses.'

The Admiral was very impressed and thought, 'What an incredibly observant NCO, and he didn't mention my ears.' He asked, Master Chief, how do you know I wear contacts?'

"Well, sir,' the salty old Master Chief replied, "it's pretty hard to wear glasses with no freak'n' ears!"

<J>~<O>~<K>~<E>~<S>

#### **CONFUSED**

I'm worried about crime, so I asked a friend from Texas what I needed to defend my home. He said a 9mm, a couple clips, and a box of shells. I put it together pretty quickly. Still not sure how it's suppose to work, though...



<J>~<O>~<K>~<E>~<S>

### **INFORMING THE WIFE**

Six retired Floridians were playing poker in the condo clubhouse when Meyerwitz loses \$500 on a single hand, clutches his chest, and drops dead at the table. Showing respect for their fallen comrade, the other five continue playing standing up.

Finkelstein looks around and asks, "So, who's gonna tell his wife?" They cut cards. Goldberg picks the two of clubs and has to carry the news. They tell him to be discreet, be gentle, don't make a bad situation any worse.

"Discreet? I'm the most discreet person you'll ever meet. Discretion is my middle name. Leave it to me."

Goldberg goes over to the dead man's apartment and knocks on the door. His wife answers through the door and asks what he wants? Goldberg declares: "Your husband just lost \$500 in a Poker game and is afraid to come home."

"Tell him to drop dead!" yells the wife.

"No problem - I'll let him know," says Goldberg.

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**AN OLDIE BUT A GOODIE**

**HOW THE INTERNET STARTED, according TO THE BIBLE...**

**PLEASE DO NOT GOOGLE THIS ONE OR CHECK WITH SNOPE.**

**THEY WILL LIE TO YOU. TRUST ME!**

In ancient Israel, it came to pass that a trader by the name of Abraham Com did take unto himself a healthy young wife by the name of Dorothy (Dot for short). Dot Com was a comely woman, large of breast, broad of shoulder and long of leg. Indeed, she was often called Amazon Dot Com.

And she said unto Abraham, her husband, "Why dost thou travel so far from town to town with thy goods when thou canst trade without ever leaving thy tent?"

And Abraham did look at her as though she were several saddle bags short of a camel load, but simply said, "How, dear?"

And Dot replied, "I will place drums in all the towns and drums in between to send messages saying what you have for sale, and they will reply buying from you who hath the best price. The sale can be made on the drums and delivery made by Uriah's Pony Stable (UPS)."

Abraham thought long and decided he would let Dot have her way with the drums. And the drums rang out and were an immediate success. Abraham sold all the goods he had at the top price, without ever having to move from his tent.

To prevent neighboring countries from overhearing what the drums were saying, Dot devised a system that only she and the drummers knew. It was known as Must Send Drum Over Sound (MSDOS), and she also developed a language to transmit ideas and pictures - Hebrew to The People (HTTP).

And the young men did take to Dot Com's trading as doth the greedy horsefly take to camel dung. They were called Nomadic Ecclesiastical Rich Dominican Sybarites, or NERDS. And lo, the land was so feverish with joy at the new riches and the deafening sound of drums that no one noticed that the real riches were going to that enterprising drum dealer, Brother William of Gates, who bought off every drum maker in the land. Indeed he did insist on drums to be made that would work only with Brother Gates' drumheads and drumsticks.

And Dot did say, "Oh, Abraham, what we have started is being taken over by others." And Abraham looked out over the Bay of Ezekiel, or eBay as it came to be known. He said, "We need a name that reflects what we are."

And Dot replied, "Young Ambitious Hebrew Owner Operators."

"YAHOO," said Abraham. And because it was Dot's idea, they named it YAHOO Dot Com.

Abraham's cousin, Joshua, being the young Gregarious Energetic Educated Kid (GEEK) that he was, soon started using Dot's drums to locate things around the countryside.

It soon became known as God's Own Official Guide to Locating Everything (GOOGLE).

That is how it all began. And that's the truth. I would not make up this stuff!

<J>~<O>~<K>~<E>~<S>



<J>~<O>~<K>~<E>~<S>~<of>~<the>~<W>~<E>~<E>~<K>

From: "Jim Woosley" [Jimwoosley@aol.com](mailto:Jimwoosley@aol.com)

I wish this were a joke... ;)

My get up and go has got up and left.

Now, it's filed a restraining order and is seeking a divorce.

<J>~<O>~<K>~<E>~<S>

Our Golden Years



<J>~<O>~<K>~<E>~<S>

Choices, choices, choices

You will spend eternity here

The devil meets him at the gate and says, "Alright, you have died and ben sent to hell. You will spend eternity here, but you get to choose how to spend it. You may choose one of these three doorways. Once you choose a door, you may not change it. So let's get started."

The devil opens Door One. The guy looks in and sees several people standing on their heads on a Concrete floor. The guy says, "No way, let's move on."

The devil opens Door Two. The guy sees a few more people standing on their heads on a Wood floor. The guy says, "No way, let's move on."

The devil opens Door Three. The guy sees a bunch of people standing knee-deep in cow manure drinking coffee. The guy says, "Great, this is the one I will chose." The devil says, "OK, g in and someone will get you some coffee."

The guy settles in with his coffee thinking that this isn't really so bad. He wonders, "What's the big deal?"

After about 10 minutes a voice comes over the loud speaker saying, "Coffee break's over. Back on your heads!"

<J>~<O>~<K>~<E>~<S>~<of>~<the>~<W>~<E>~<E>~<K>

From: "Ray Beloate" [beerman@rittermail.com](mailto:beerman@rittermail.com)

### AN FARMER'S WORDS OF WISDOM

"Your fences need to be horse-high, pig-tight and bull-strong."

"Keep skunks and bankers at a distance."

"Life is simpler when you plow around the stump."

"A bumble bee is considerably faster than a John Deere tractor."

"Words that soak into your ears are whispered.....not yelled."

"Meanness don't just happen overnight."

"Forgive your enemies; it messes up their heads."

"Do not corner something that you know is meaner than you."

"It don't take a very big person to carry a grudge."

"You cannot unsay a cruel word."

"Every path has a few puddles."

"When you wallow with pigs, expect to get dirty."

"The best sermons are lived, not preached."

"Most of the stuff people worry about, ain't never gonna happen anyway."

"Don't judge folks by their relatives."

"Remember that silence is sometimes the best answer."

"Live a good and honorable life, then when you get older and think back, you'll enjoy it a second time."



*The January 25th, 2017 Edition of THE REVENGE HUMPH DAY!*

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“Don't interfere with somethin' that ain't bothering you none.”

“Time'n has a lot to do with the outcome of a rain dance.”

“If you find yourself in a hole, the first thing to do is stop diggin'.”

“Sometimes you get, and sometimes you get got.

“The biggest troublemaker you'll probably ever have to deal with, watches you from the mirror every mornin'.”

“Always drink upstream from the herd.”

“Good judgment comes from experience, and a lotta that comes from bad judgment.”

“Lettin' the cat outta the bag is a whole lot easier than puttin' it back in.”

“If you get to thinkin' you're a person of some influence, try orderin' somebody else's dog around.”

“Live simply, love generously , care deeply, speak kindly, and leave the rest to God.”

“Don't pick a fight with an old man. If he is too old to fight, he'll just kill you.”

<J>~<O>~<K>~<E>~<S>

Winner: Wet Tee-Shirt Contest



What were you expecting...?

<YOU>~<>~<JUST>~<>~<CAN'T>~<>~<MAKE>~<>~<THIS>~<>~<STUFF>~<>~<UP!>

YOU JUST CAN'T MAKE THIS STUFF UP!

From: "Chris Cowan" [cowanc1028@earthlink.net](mailto:cowanc1028@earthlink.net)

Maps: Where You Can Drink Tap Water and the Prices of Beer and of Bottled Water

This is just fun

<http://www.justtheflight.co.uk/fun-stuff/tap-water/>

<YOU>~<>~<JUST>~<>~<CAN'T>~<>~<MAKE>~<>~<THIS>~<>~<STUFF>~<>~<UP!>

YOU JUST CAN'T MAKE THIS STUFF UP!

From: "Jerry Tollett" [haleja@epbfi.com](mailto:haleja@epbfi.com)

A MUST SEE! – Enjoy

In Oregon, at a Walmart parking lot, a woman yelled that a thief was stealing her bike.

Robert, a real-life cowboy, happened to be nearby and here's the rest of the story.

[https://www.youtube.com/embed/dsq\\_jZiB1\\_U](https://www.youtube.com/embed/dsq_jZiB1_U)

<?>~<YOU JUST CAN'T MAKE THIS STUFF UP!>~<?>





<S>~<C>~<I>~<E>~<N>~<C>~<E>~<S>~<T>~<A>~<R>~<T>~<S>~<H>~<E>~<R>~<E>

From: "Tim Bolgeo" [tbolgeo@epbf.com](mailto:tbolgeo@epbf.com)

## LOW-COST ANDROID ONE PHONES REPORTEDLY COMING TO THE US

by Dieter Bohn@backlon Jan 17, 2017, 8:18pm EST

<http://www.theverge.com/2017/1/17/14305288/google-android-one-us-low-cost-report>

Google's Android One platform was originally designed to provide low-cost Android devices to developing markets without the stuff that usually comes with low-cost Android devices: bloatware, competing services, and a crippling lack of software and security updates. Now, according to a report from The Information, the program is about to make its way to the US market to help solve those problems.

Android One phones have historically been produced by companies you probably haven't heard of, like Micromax, Cherry, and QMobile. Originally Google had a direct hand in detailing what components would go into the phone, but apparently became more flexible over time and eventually expanded the program beyond India to parts of Africa, Spain, and Portugal.

Android One may not have been the rousing worldwide success Google was hoping for, but it's still an important initiative for the company. Especially at the low end, there's a lot of incentive for manufacturers to pile on extra software in a bid to make those devices more profitable — but that could cut against Google's efforts to make its own services more

pervasive and popular. As Efrati points out in his report, Huawei recently opted for Amazon's Alexa assistant instead of Google's on its phones (The Google Assistant isn't yet available for non-Google phones), which apparently caused some tension between the companies.



Photo by Stephen Lam/Getty Images

### **CHEAP PHONES NEED UPDATES, TOO**

Google also has a stake in ensuring that as many Android devices as possible are upgraded on a regular basis, not just for features but also for security updates.

If Google really does put some real effort behind Android One, it could make its plans for Android a little clearer. Google itself has taken a stand that it wants to make its own hardware at the high-end of the smartphone market with the Pixel, and if The Information's report is accurate, it wants to ensure that its services are not cut out from the low end. Whether that leaves enough breathing room for partners like Samsung is another question — but it doesn't seem especially likely that Google's Pixel is going to out-sell the Galaxy lineup anytime soon.

Google should be so lucky as to have that kind of problem right now — the more urgent issue is ensuring a consistent experience in the low and midrange of Android products, where software quality varies wildly and software updates are all too rare.

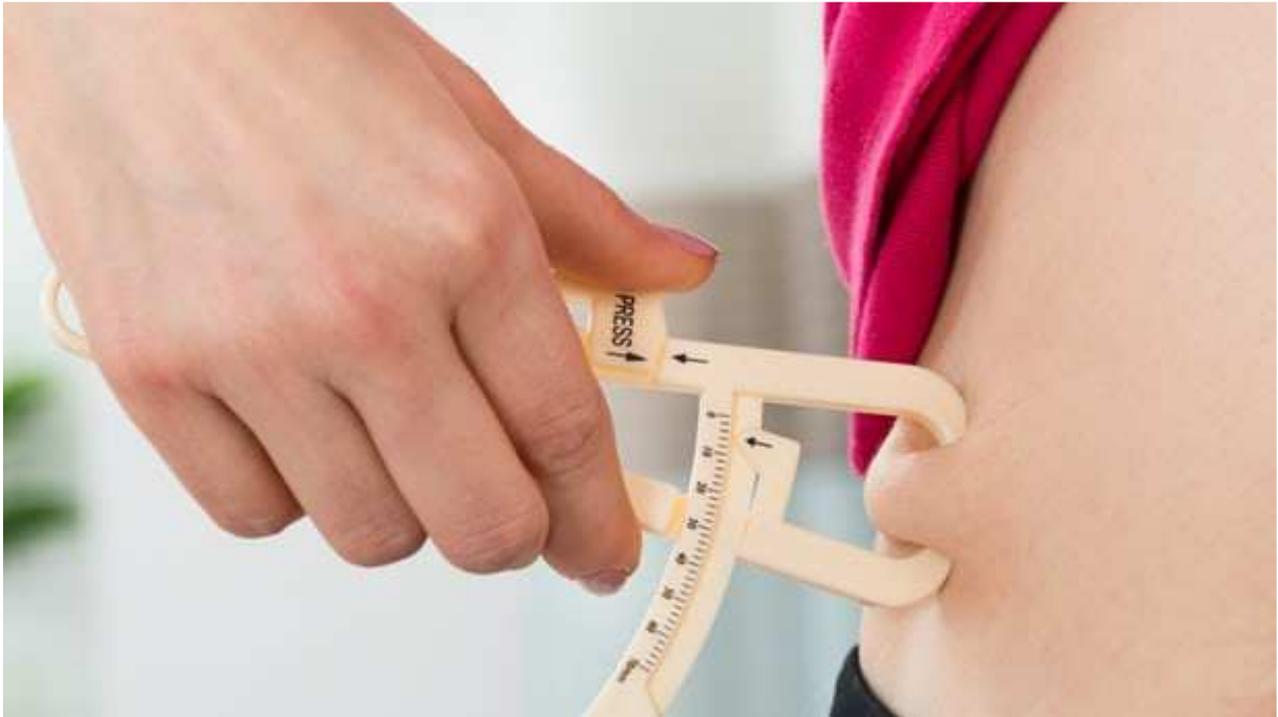
Although Google itself probably won't produce Android One phones for the US, we don't yet know what manufacturers will make them — but apparently LG is one possibility. The phones are reportedly due “before the middle of the year” and will be backed by lots of marketing money from Google.

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## CANCER RESEARCHERS STUMBLE ONTO DRUGS' FAT-BLASTING POWERS

Michael Franco, January 18, 2017

<http://newatlas.com/cancer-drugs-combat-obesity/47440/>



The real test will be if the mouse study can be reproduced in humans (Credit: Andrey Popov/ Deposit photos)

While the scientific inquiry process is generally linear and highly regimented, every once in awhile, happenstance works its way in. That's just what happened when researchers at the Mayo Clinic were studying the influence obesity has over cancer treatments and found, instead, that two popular cancer-fighting drugs melted fat off the bodies of morbidly obese mice.

When the researchers gave the rotund rodents the chemotherapy drugs methotrexate and cyclophosphamide they witnessed dramatic weight loss in the mice – even though they kept their whiskers deep in the grub.

"We were surprised to observe that when morbidly obese mice were treated with certain cancer-fighting drugs, the drugs not only targeted their cancers, but also tended to

spontaneously resolve their obesity – even with undiminished gorging on a high-fat diet," said Mayo Clinic cancer immunotherapist Peter Cohen who co-led the study.

Perhaps most impressively, the drugs seemed to do all the hard work on their own, without affecting the appetites or caloric intake of the mice at all, or causing any toxic effects. The researchers believe that the drugs worked by depleting fat cell precursors in the mice, which means that the rodents simply couldn't store fat.

"The ease with which this weight loss was achieved in mice – even with continued caloric binging – is in stark contrast to the Herculean difficulties morbidly obese patients experience trying to preserve weight loss through dietary restraint," said Mayo Clinic immunologist Sandra Gendler, who also participated in the study.

At this point there's no telling if the fat loss in mice will translate to human candidates, but being that the drugs are already approved for human use – even being employed to fight other conditions like rheumatoid arthritis and psoriasis – further research shouldn't be too difficult to conduct.

The findings of the team, which also includes the efforts of Mayo Clinic postdoctoral fellow Cheryl Myers, were just published in the journal *Oncotarget*.

Source: Mayo Clinic

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## DISCOVERY COULD LEAD TO JET ENGINES THAT RUN HOTTER - AND CLEANER

by Staff Writers, Columbus OH (SPX) Jan 18, 2017

[http://www.spacedaily.com/reports/Discovery\\_could\\_lead\\_to\\_jet\\_engines\\_that\\_run\\_hotter\\_and\\_cleaner\\_999.html](http://www.spacedaily.com/reports/Discovery_could_lead_to_jet_engines_that_run_hotter_and_cleaner_999.html)

Strong, heat-resistant alloys enable turbine engines to run cleanly and efficiently.

Researchers here have made a discovery in materials science that sounds like something from the old Saturday morning cartoon *Super Friends*: They've found a way to deactivate "nano twins" to improve the high-temperature properties of superalloys that are used in jet engines.

The advance could speed the development of powerful and environmentally friendly turbine engines of all sorts, including those used for transportation and power generation.



The "nano twins" in question are microscopic defects that grow inside alloys and weaken them, allowing them to deform under heat and pressure. In the journal *Nature Communications*, engineers at The Ohio State University describe how tailoring an alloy's composition and then exposing it to high heat and pressure can not only prevent nano twins from forming, it can actually make the alloy stronger.

In tests, the technique, which they've dubbed "phase transformation strengthening," eliminated the formation of nano twins and decreased alloy deformation by half.

Strong, heat-resistant alloys enable turbine engines to run cleanly and efficiently, explained Michael Mills, professor of materials science and engineering and leader of the project at Ohio State. When an engine can run at very high temperatures, it consumes its fuel more thoroughly and produces lower emissions.

"We found that increasing the concentrations of certain elements in super-alloys inhibits the formation of high-temperature deformation twins, thereby significantly improving the alloys' high temperature capabilities," Mills said.

These days, the most advanced alloys are designed on computer - practically atom by atom - and Mills' team set out to address what he called a deficit in the "quantitative, comprehensive understanding" of how these exotic metal-based materials deform under high stress.

The researchers made the discovery when they were studying nano twin formation in two different commercial superalloys. They compressed samples of the alloys with thousands of pounds of pressure at around 1,400 degrees Fahrenheit - a temperature comparable to a running jet engine - and afterward examined the alloys' crystal structures with electron microscopes and modeled the quantum mechanical behavior of the atoms on a computer.

In both alloys, the temperature and pressure caused nano twin faults to develop within the superalloy crystals. And, in both alloys, the material composition in and around the faults changed, but in different ways.

Through a sequence of atomic-scale jumps, some elements - such as atoms of nickel and aluminum - diffused away from the faults, while others diffused into the faults. The researchers were able to detect these fine-scale movements using the advanced electron microscopes at the Ohio State's Center for Electron Microscopy and Analysis (CEMAS), which offers one of the largest concentrations of electron and ion beam analytical microscopy instruments in any North American institution.

"In the first alloy, which was not as strong at high temperature, atoms of cobalt and chromium filled the fault," said Timothy Smith, former student at Ohio State and lead author of the study. "That weakened the area around the fault and allowed it to thicken and become a nano twin."

But in the second alloy - the one that didn't form nano twins - the elements titanium, tantalum and niobium tended to diffuse into the faults instead. As a result, a new and very stable phase of material formed right at the faults. The new phase was so stable that it resisted the formation of nano twins.

The tendency for particular atoms to diffuse into the nano twin faults depends on the overall composition of the alloy, the researchers found. "We discovered that when the amount of titanium, tantalum, and niobium in the alloy was increased, while decreasing cobalt and chromium, we could actually strengthen the region around the faults and prevent the fault from widening into a nano twin," Smith said.

The researchers' innovative combination of atomic-level imaging and high-end computing is a unique feature of research done at CEMAS, said David McComb, study co-author and director of CEMAS.

"Research such as this perfectly illustrates the power of CEMAS to help drive discovery in new materials and processes," he added.

The team is continuing to study phase transformation strengthening, to see if tailoring the alloy compositions in different ways might enhance the effect.

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### LIFE-SAVING DEVICE COULD TRANSFORM THE MEDICAL MARKET IN 2017

By. James Burgess of Oilprice.com , January 18, 2017

<http://www.nextbigfuture.com/2017/01/life-saving-device-could-transform.html>

A little-known biotech company is poised to potentially earn millions in revenue with the planned upcoming release of a breakthrough technology that could prevent massive numbers of strokes with a simple test that is affordable and accessible to the average American.

### A MULTI-BILLION- DOLLAR PROBLEM WITH A \$49,000 ANSWER

Stroke statistics are shocking: Globally, every year 15 million people suffer a stroke. Of these, some 6 million are killed, while 5 million are rendered permanently disabled. In the U.S. alone, nearly 800,000 people suffer from strokes annually—and someone dies of a stroke every 4 minutes.

Until now, there has been no cost-effective way to screen for Ischemia, the leading indicator of a stroke, which cost the U.S. government alone tens of billions of dollars a year. That could be about to change, thanks to a breakthrough technology from CVR Medical (TSX:CVM.V ; OTC:CRRVF. The company's debut, game-changing medical device has been quietly in development for 10 years, and now it's about to charge out of the gate, hoping to take the market by storm upon FDA market clearance.



What 3D seismic imagery did for super quick discoveries in the oil and gas industry, CVR's sensory system could do for the medical

industry.

**CVR's Carotid Stenotic Scan (CSS) is a tool to detect stenosis within the Carotid Arteries, potentially offering patients and caregivers a device for early detection in a quick and repeatable manner. Unlike other comparative modalities, the CSS was designed to function without the assistance of a certified technician. These three facts combine to create one of the potentially biggest—and most lucrative-- phenomena in recent medical equipment market history.**

**The CSS makes a connection between fluid and sub-sonic frequencies to detect arterial disease or blockage. Blood flowing through the carotid arteries produces wave patterns which are shaped and sub-sonic frequencies to detect arterial disease or blockage. Blood flowing through the carotid arteries produces wave patterns which are shaped and altered by the presence of irregularities on the inner artery walls. CVR's advanced technology captures these wave patterns and analyzes them mathematically with patented algorithms. After a brief test, the analysis is complete, offering a way to potentially identify those at risk of a stroke and arming the healthcare provider with the information necessary to prevent the deadly event. For investors, medical providers, insurers, and the public at large, the secondary benefit is that this new innovation has a price tag that renders testing up to 50 times cheaper than many tools on the market today.**

**Coming in at \$49,000 per unit, compared to up to a whopping US\$2.5 million for existing technology.**

**Additionally, some existing technologies are invasive and, due to cost, not accessible to many. CVR's CSS is positioned to potentially fill this current gap. Once available, the CSS technology stands to save the U.S. government up to US\$34 billion a year, the current cost of strokes annually in the U.S. according to the CDC.**

**With strokes coming in as the second leading cause of death globally for people over the age of 60, and the fifth leading cause of death for people aged 15-59, a new technology that can deliver early detection is beyond critical.**

**According to the CDC, early action is urgent for survival, and only 38 percent of stroke sufferers even recognize they are having a stroke in time to receive effective emergency intervention.**

## **2017: THE DEFINITIVE YEAR OF BIOTECH**

**This is where the new barons are being made, with medical breakthroughs turning countless billions in new profits—and 2017 is set to be the strongest ever.**

**Biotech companies pivoting to microbiome to develop new diagnostics, new therapies and probiotic products to prevent dangerous microbe imbalances are set to cement themselves as one of the industry's most promising and lucrative "frontiers" this year.**

**Cellular immunotherapies reporting 90 percent remission rates for acute lymphoblastic leukemia (ALL) is expected to be presented to the FDA in 2017 and could trigger a wave of approvals for other blood cancers and lymphomas, and could eventually replace chemotherapy.**

Liquid biopsies, or blood tests that uncover signs of actual DNA or cell-free circulating tumor DNA (ctDNA), could prove to be a revolutionary cancer test with annual sales forecast to be \$10 billion.

Bioabsorbable stents, approved in the U.S. in July for the first time, has a market potential approaching \$2 billion in six years, with this year the critical juncture.

CVR invested \$23 million in its breakthrough technology, with early stage clinical trials complete and now headed toward pivotal trials, eyeing the potential for immediate profitability, with possible U.S. sales alone up to 400,000 devices annually at \$49,000 each. When you talk globally, the numbers are staggering.

There's nothing more gratifying than getting in on the ground floor of a medical equipment breakthrough that can save millions of lives and turn a fantastic profit while doing it.

Here are 3 reasons to keep a close eye on CVR Medical right now:

### **1. URGENT NEED, GUARANTEED MARKET**

Few things are more urgent than an early detection system for a medical condition that kills 6 million people a year. In the U.S. alone, one American dies from stroke every 4 minutes, and right now the U.S. death toll from strokes stands at upwards of 130,000 each year. Annually, more than 795,000 Americans suffer a stroke.

“Strokes will absolutely strain the healthcare system,” said Bruce Ovbiagele, M.D., M.Sc., professor and chairman of the Department of Neurology at the Medical University of South Carolina, Charleston. Caring for survivors is expensive because stroke can cause long-term disability, he said. “Ninety percent of stroke patients have residual disability and only 10 percent recover completely after a stroke,” Ovbiagele said. “Policy makers at all levels of governance should be aware of this looming crisis so that we can consider practical ways to avert it.”

Against the backdrop of these devastating statistics, CVR is poised to make a dramatic impact upon an industry starved for innovation and advancement.

The CSS is a groundbreaking tool that can assess Carotid Arterial health in a way that has never been available to a patient, healthcare provider, or the payor in our current healthcare system. Existing early detection systems cost anywhere between US\$250,000 and US\$2.5 million—and they aren't economically feasible to use, so the indicators for a stroke go undetected and the concomitant medical bills continue to drown patients and government alike, while people suffering when it could be prevented.

From the 234,615 primary care offices, specialist offices and hospitals and clinics just in the U.S., the CSS has already identified a total U.S. market opportunity of \$11.5 billion, assuming only one device is sold to each office. The global market, then, is gargantuan—and CVR expects to fully penetrate it.

### **2. THE DREAM TEAM BEHIND THE MEDICAL MIRACLE**

The first thing that comes to mind when you meet the team behind CVR and the development of this breakthrough technology is an unheard-of modesty and

professionalism. This team has demonstrated the strategic vision of a supergiant by leveraging intellectual property, market and industry know-how and key strategic relationships.

Led by Chairman, CEO and President Peter Bakema—with an impressive 30-year track record in business development, since its inception, CVR has brought on some of the most respected medical professionals in the industry

Tony Robinson, COO and Executive Vice-President has been with CVR for 8 years and has extensive domestic and global healthcare experience.

Michael Rhodes, VP of Quality Systems, is a former VP for Quality for HSBC and Motorola. He has 20 years of experience in multiple markets.

Dr. W. Douglas Weaver, a member of the BOD Scientific Advisory Board, is the former president of the American College of Cardiology and the former VP and System Medical Director of Heart and Vascular Services at Henry Ford Health System. His over 330 publications related to drug and device discovery have been some of the most influential in our time.

Together, they are on a trajectory which will revolutionize healthcare by offering easily accessible, affordable early detection for a potentially massive market share at a very critical time in our healthcare story.

### **3. CASHED UP, BUT STILL CHEAP AND READY TO BURST THROUGH THE GATES**

CVR has already invested US\$23 million into the research and development of their breakthrough CSS technology, and right now they're at that critical juncture where investment turns into profit, so shares are still cheap—while they last, and that isn't likely to be for long.

CVR is just coming out of early stage clinical trials, and is about to enter pivotal trials, which limits the window of opportunity between market and profitability. They've been in business for a decade, and now at the last stage before profitability.

The critical timeframe to watch is the release of a preliminary clinical report in the near future followed by a full clinical report roughly 4-8 weeks later. Once that happens, the next step is FDA submission to prove safety and efficacy, and if successful, market clearance and delivery to the market.

Because the all-in costs are less than half the sale costs, the company is expecting a very quick and lucrative head start. The team has already lined up manufacturing and components, so once the clinical reports are in, and the FDA hurdle is cleared, it's breakout time.

But it won't stop here. This isn't a one trick pony. CVR's CSS is only the first in the application of the technology.

Soon enough, you could see these Carotid Stenotic Scan (CSS) in every doctor's office, lab, hospital you visit...

With a potential market of some 235,000 medical offices, we're looking at an immense market opportunity.

And this company is at the center of it all.

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**SOUTH KOREA MAKING A 1000 KILOMETER PER HOUR LOW PRESSURE TUBE HIGH SPEED TRAIN THAT WILL GO FROM SEOUL TO BUSAN IN 30 MINUTES**

January 18, 2017

<http://www.nextbigfuture.com/2017/01/south-korea-making-1000-kilometer-per.html>



South Korea is seeking to develop a train-like public transport concept that is almost as fast as the speed of sound up 1,000 km / h, the Korea Railroad Research Institute (KRRRI) said Tuesday.

The state-run institute will join forces with other research groups and Hanyang University to build the near-supersonic "train", which would be able to travel from Seoul to Busan in half an hour.

"We hope to create an ultra-fast train, which will travel inside a state-of-the-art low-pressure tube at lightning speeds, in the not-too-distant future," said a KRRRI official.

"To that end, we will cope with associated institutes as well as Hanyang University to check the viability of various related technologies called the hyper-tube format over the next three years."

Currently, the fastest ground transport in the world is magnetic levitation (maglev) trains, which can travel at around 500km / h.

This does not sound like hyperloop technology but a low pressure version of the ET3 vacuum tube high speed train.

China has looked at low pressure tube high speed trains. Vacuum tube trains can theoretically travel at deep hypersonic speeds. The lower the pressure in the tube then the less resistance there is. Thus higher speeds can be achieved.

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## GROWING NEW HUMAN EYES AND REVERSING PARALYSIS IN THE PAST TWELVE MONTHS ARE JUST THE START OF A STEM CELL REVOLUTION

January 18, 2017

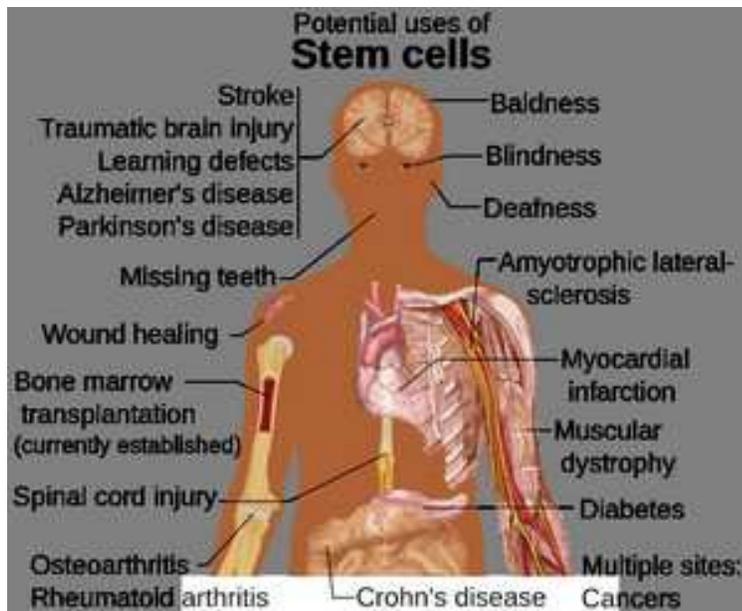
<http://www.nextbigfuture.com/2017/01/growing-new-human-eyes-and-reversing.html>

Peter Diamandis, Xprize and Singularity University, indicates that we are at the cusp of a stem cell revolution. Understanding and harnessing these unique cells may unlock breakthroughs in longevity and therapeutic solutions to all kinds of chronic diseases and regenerative opportunities.

### RECENT STEM CELL SUCCESS STORIES

Here are the top three stories over the past 12 months which demonstrate the potential stem cells :

a) **Stem Cells Able to Grow New Human Eyes:** Biologists led by Kohji Nishida at Osaka University in Japan have discovered a new way to nurture and grow the tissues that make up the human eyeball. The scientists are able to grow retinas, corneas, the eye's lens, and more using only a small sample of adult skin.



b) **Stem Cell Injections Help Stroke Victims Walk Again:** In a study out of Stanford, of 18 stroke victims who agreed to stem cells treatments, seven of them showed remarkable motor function improvements. This treatment could work for other neurodegenerative conditions such as Alzheimer's disease, Parkinson's and Lou Gehrig's Disease.

c) **Stem Cells Help Paralyzed Victim Gain Use of Arms:** Doctors from the USC Neurorestoration Center and Keck Medicine of USC injected stem cells into the damaged cervical spine of a recently paralyzed 21-year-old man. Three months later, he showed dramatic improvement in sensation and movement of both arms.

## **Stem Cell Background**

**Stem cells are undifferentiated cells that can transform into specialized cells such as heart, neurons, liver, lung, skin and so on, and can also divide to produce more stem cells.**

**In a child or young adult, these stem cells are in large supply, acting as a built-in repair system.**

**They are often summoned to the site of damage or inflammation to repair and restore normal function.**

**But as we age, our supply of stem cells begins to diminish as much as 100- to 10,000-fold in different tissues and organs.**

## **FUTURE OF STEM CELL THERAPEUTICS**

**Over the last decade, the number of publications per year on stem cell-related research has increased 40x. The size of the stem cell market size is expected to reach \$170 billion by 2020.**

**Here are the top four areas in the space to watch out for:**

**1. Tissue engineering: Tissue engineering using the body's own stem cells to repair, replace or augment diseased tissue is a rapidly evolving field. Patients with a variety of diseases may be treated with transplanted tissues and organs. However, we face a shortage of donor tissues and organs, which is worsening yearly because of the aging population. Scientists in the field of tissue engineering are applying the principles of cell transplantation, material science, and bioengineering to construct biological substitutes that will restore and maintain normal function in diseased and injured tissues. The stem cell field is also advancing rapidly, opening new options for cellular therapy and tissue engineering. Use of postnatal stem cells has the potential to significantly alter the perspective of tissue engineering.**

**2. Stem cell banking: "At your moment of birth, you are probably at the point of biological perfection," says Dr. Bob Hariri. "Your system hasn't been exposed to all of those injurious stimuli, like electromagnetic radiation, chemicals, etc., and your biological software is uncorrupted." Stem cell banking allows us to capture stem cells with your original, uncorrupted DNA at birth, replicate them into a large number of future dosages and then freeze those doses. Hariri discovered that in addition to cord blood (the blood found in the umbilical cord of a newborn), the placenta of a newborn is an organ very rich in stem cells. Rather than discard the leftovers of birth, placentas, if saved, may hold the key to a longer and healthier life. Hariri created a business called LifebankUSA, which provides private cell banking (FYI, this is where we banked our children's stem cells). Lifebank isolates, processes and cryopreserves cells (putting them into a deep freeze, about minus 180 degrees Celsius), keeping them in suspended animation at the most pristine state of their existence.**

**3. Clinical applications of MSCs: Mesenchymal stem cells, the major stem cells for cell therapy, have been used in the clinic for approximately 10 years. Currently, 344 registered clinical trials in different clinical trial phases are aimed at evaluating the potential of MSC-**

based cell therapy worldwide. From animal models to clinical trials, MSCs have afforded promise in the treatment of numerous diseases. The ability of MSCs to differentiate into osteoblasts, tenocytes and chondrocytes has attracted interest for their use in orthopedic settings. First, MSCs have been shown to be beneficial in treating bone disorders, such as osteogenesis imperfecta (OI) and hypophosphatasia. Other promising therapeutic avenues for MSCs include the treatment of autoimmune disease, cardiovascular disease, liver disease and cancer.

4. Parabiosis: A San Francisco-based startup called Ambrosia recently commenced one of the trials on parabiosis. Their protocol is simple: Healthy participants aged 35 and older get a transfusion of blood plasma from donors under 25, and researchers monitor their blood over the next two years for molecular indicators of health and aging. The study is patient-funded; participants, who range in age from late 30s through 80s, must pay \$8,000 to take part, and live in or travel to Monterey for treatments and follow-up assessments. Ambrosia's founder Jesse Karmazin became interested in launching a company around parabiosis after seeing impressive data from animals and studies conducted abroad in humans: In one trial after another, subjects experience a reversal of aging symptoms across every major organ system. "The effects seem to be almost permanent," he says. "It's almost like there's a resetting of gene expression." This company has recently received funding from Peter Thiel. Infusing your own cord blood stem cells as you age may have tremendous longevity benefits.

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#### HARVESTING ENERGY FROM RF SOURCES

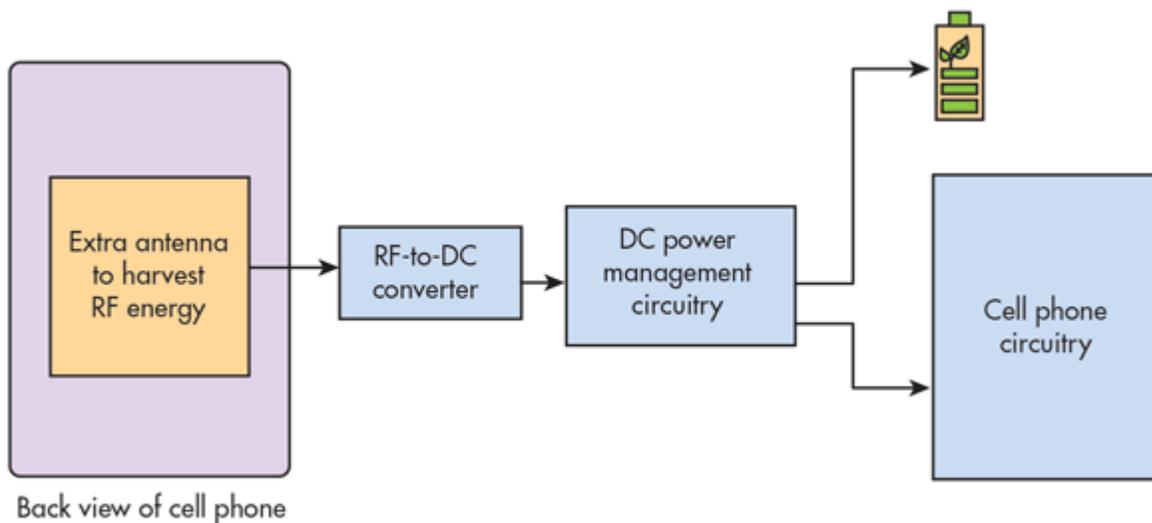
Excess energy from transmitted communications signals can be captured and transformed to dc power, perfect for a wide range of low-power electronic devices.

Dec 30, 2016, Jack Browne, Microwaves and RF

<http://mwrf.com/systems/harvesting-energy-rf-sources?code=UM UM7DE>

Conservation of energy starts by reusing energy that has already been expended. That energy is readily available in electromagnetic (EM) form, from broadcast AM and FM radio waves to the many wireless devices that transmit signals around us, such as cellular base stations and short-distance wireless local area networks (WLANs). The key to harvesting or scavenging this "used" energy starts with a dedicated receiver capable of receiving the available wireless signals, along with some means of converting the received signal power into a supply of electrical power.

Many leading suppliers of wireless communications products are well aware of the eventual need to conserve battery power as users became more dependent upon those devices. The evolution of the cellular telephone into a personal messaging and entertainment center has meant that these portable radios can do more, but it also means that they require more power to do so. If limited to batteries as power sources, the increased current drain from the added functionality will result in less operating time per battery charge (and less billable hours for service providers).



This is a simplified functional diagram of how RF energy can be harnessed from the environment and converted into dc power for another application. The diagram is based on a patented concept of using a cellular telephone’s surface as an energy-harvesting antenna, thus reusing the electromagnetic (EM) energy from the very same cellular phone. (Courtesy of Radiant micro-tech Corp.)

For a while now, developers of mobile communications devices have sought to ease the load on the batteries in those devices via some form of energy recovery system. With the growing popularity of Internet of Things (IoT) and machine-to-machine (M2M) devices for automated remote control of electronic devices, IoT applications are being envisioned—for homes and factories alike—that could potentially remain powered for years awaiting a trigger. With energy harvesting capability, such devices can literally pull energy out of the air to recharge their own batteries or harvest enough energy from the environment so that a battery may not even be required for power.

Such devices are now typically referred to as “zero-power” wireless sensors for their capability of providing sensor data directly on a wireless channel or by means of the internet, using a wireless gateway with no apparent source of energy. The “batteryless” approach has been commonly used with radio-frequency-identification (RFID) tags that transmit an identifying signal based on received power from an RFID reader’s transmitted signals (as the source of power).

By harvesting power from available RF energy sources, a new generation of ultra-low-power (ULP) wireless devices, such as IoT sensors, can be developed for low-maintenance applications like remote monitoring. Energy harvesting is considered very much a “companion” technology to wireless communications, since it can enable extended battery lifetime for mobile devices and possibly battery-free operation for some electronic devices.

## CREATING ENERGY

Energy can be harvested from a number of different sources, including light, heat, vibration, motion, pressure, magnetic fields, and RF/microwave signals. Some methods of producing energy are quite creative but practical. Enocean, for example, makes wireless

light-emitting-diode (LED) lamp switches that use the pressure of a user's hand on the switch as the source of energy. Pressing on the switch generates the dc power needed to transmit wireless on/off signals to an LED lamp within line of sight of the switch.

The basic concept for harvesting energy from an RF source typically involves an extra antenna to receive the desired wireless signals via a wireless product's primary receiver. Alternately, a secondary receiver may be dedicated to energy harvesting that covers the frequency range of interest (see figure). Received signals are applied to some form of rectifying circuitry to convert the wireless energy to dc power.

In some cases, an antenna that incorporates the rectifying circuitry, known as a rectenna, may be used to save space. The antenna portion of a rectenna can be almost any form of antenna suitable for the frequency band of interest. Options include a monopole, dipole, or microstrip patch fabricated on printed-circuit board (PCB), along with rectifying circuitry based on nonlinear rectifying devices (such as Schottky or IMPATT diodes). The antenna will be joined to the rectifying circuitry by means of impedance-matching circuitry and filters, such as lowpass filters, to block any harmonics generated by the diodes.

Conversion efficiency is critical to any energy-harvesting solution. The antenna and receiver will determine the amount of RF signal power available for rectification, while the diodes and diode rectifying circuitry will determine the RF-to-dc conversion efficiency. Energy-harvesting circuits have historically taken advantage of plentiful sources of RF energy, such as FM radio signals, which can be collected with simple stick antennas and basic diode rectifying circuits.

Voltage regulation is an important part of any energy-harvesting solution, as it ensures that a stable supply of electricity is being provided to the load. For that purpose, a number of IC suppliers offer various forms of voltage converters with built-in regulation to maintain consistent voltage and current for the intended load. Linear Technology, for example, has developed a family of energy-harvesting power supplies with capabilities that target different forms of initial energy sources.

The ICs, which integrate a full-wave bridge rectifier with a buck converter, are designed for lower current operation with lower-energy sources (like thermos-electric generators and piezoelectric sources) and higher currents with higher-power sources (e.g., solar and RF energy). In fact, many IC suppliers with energy-harvesting power supplies, including Silicon Labs and Texas Instruments, offer reference designs to show their ICs in typical circuit applications.

These ICs are not simple power-supply circuits, but sophisticated means of (in some cases) controlling trickle charges to a battery from a low-power energy supply. A device such as the LTC3588-1 from Linear Technology is a nanopower energy harvesting power supply for use with high-output-impedance energy sources such as piezoelectric, solar, or magnetic transducers. It allows charge to accumulate on an input capacitor until the IC's buck converter can efficiently transfer a portion of the stored charge to a load (like a battery) at the output.

It provides four pin-selectable output voltages of 1.8, 2.5, 3.3, and 3.6 V with as much as 100 mA continuous output current to accommodate many different load or battery requirements. A larger output capacitor can be used with the IC when higher output current bursts are needed. This IC, with an input voltage range of 2.7 to 20.0 V dc, is part of a total

energy-harvesting solution, along with an antenna, receiver, and rectifying element. Depending upon the amount of energy available from a source, the designer of an energy-harvesting solution would select the power-supply circuitry according to the expected voltage and current range to be fed to the load.

Energy sources are all around, and RF/microwave signals are just one type of those sources. Military equipment suppliers, for example, have already experimented with circuits that extract energy from motion, such as using a soldier's walking motion to generate the power supply for recharging a portable radio system. In the medical world, where implantable devices must be powered by external power supplies, ICs are being developed with on-chip antennas and the capability to draw power from radio waves in a patient's environment. The rapid growth of IoT devices and applications will be creating increasing demand for energy-harvesting solutions that can free many future wireless devices from their dependences on batteries.

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## CHINA'S LUCKY KNOT BRIDGE STRETCHES OVER A HIGHWAY AND THE DRAGON KING HARBOR RIVER

By: Marshall Smith | January 18th, 2017

[http://www.industrytap.com/chinas-lucky-knot-bridge-stretches-highway-dragon-king-harbor-river/40358?utm\\_source=Industry+Tap&utm\\_campaign=73a75d2eab-Industry+Tap+Volume+3831+19+2017&utm\\_medium=email&utm\\_term=0\\_05d6224fe0-73a75d2eab-44103165](http://www.industrytap.com/chinas-lucky-knot-bridge-stretches-highway-dragon-king-harbor-river/40358?utm_source=Industry+Tap&utm_campaign=73a75d2eab-Industry+Tap+Volume+3831+19+2017&utm_medium=email&utm_term=0_05d6224fe0-73a75d2eab-44103165)



Next Architects

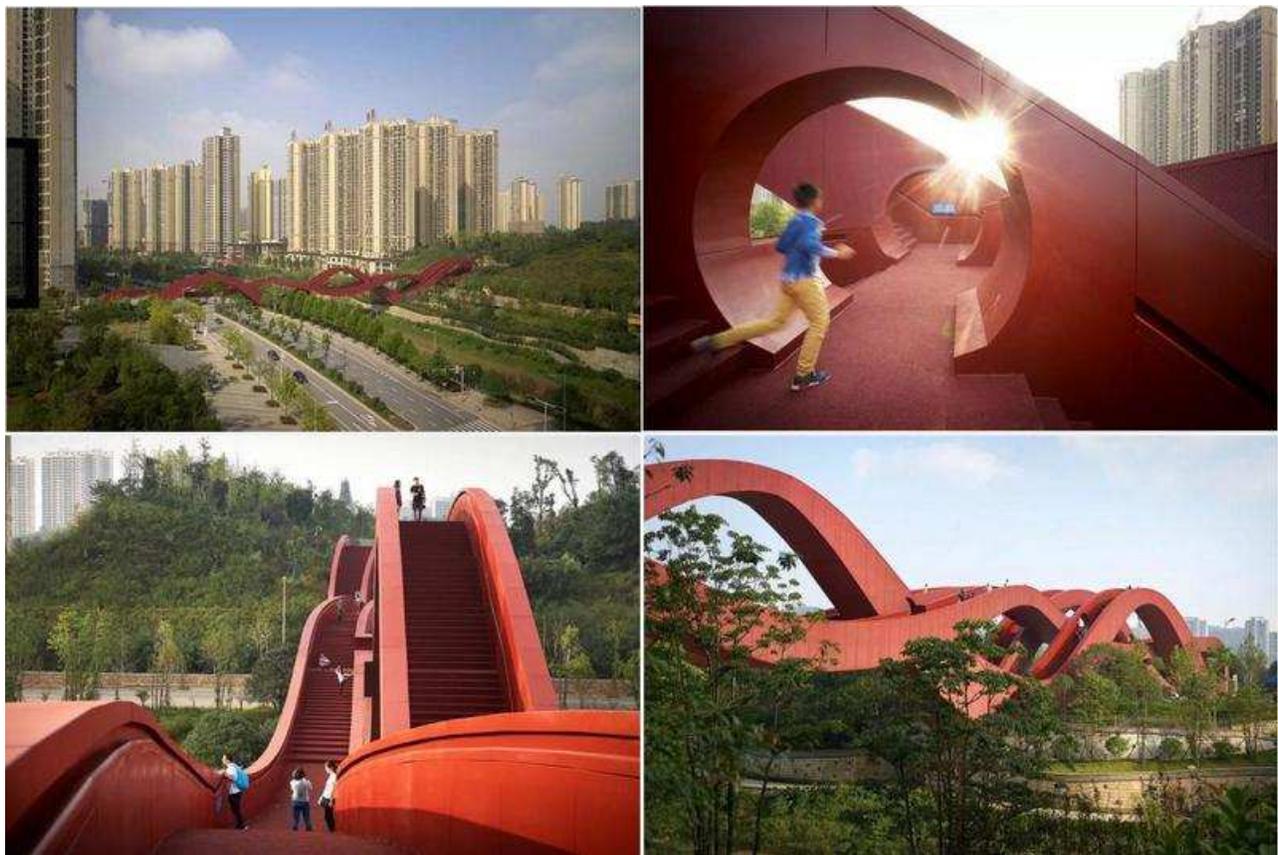
Next Architects are known for their outlandish designs, the latest being the Lucky Knot Bridge in Changsha, China.

Featuring three bridges woven into one, the steel bridge was recently completed at the end of last year.

Incredibly, the Lucky Knot Bridge spans over a highway and sits 78 feet above the Dragon King Harbor River so that boats can cruise under it with ease.

The 600-foot bridge has eight available street entrances, in addition to 5 places where the 3 intertwined bridges overlap called “moon gates.”

The Lucky Knot Bridge looks more like a roller coaster than a bridge, but there’s a reason it isn’t flat as the knot stands for luck and prosperity in ancient Chinese folk art.



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## ARMY PICKS SIG SAUER'S P320 HANDGUN TO REPLACE M9 SERVICE PISTOL

By Matthew Cox and Hope Hodge Seck, Military.com, Published January 20, 2017  
<http://www.foxnews.com/tech/2017/01/20/army-picks-sig-sauers-p320-handgun-to-replace-m9-service-pistol.html>



(Sig Sauer)

The U.S. Army on Thursday awarded Sig Sauer a contract worth \$580 million to make the next service pistol based on the company's P320 handgun.

Sig Sauer beat out Glock Inc., FN America and Beretta USA, the maker of the current M9 9mm service pistol, in the competition for the Modular Handgun System, or MHS, program.

"We are both humbled and proud that the P320 was selected by the U.S. Army as its weapon of choice," Ron Cohen, chief executive officer of Sig Sauer, said in a statement to Military.com here at SHOT Show, the world's largest gun show, taking place this week in the city.

"Securing this contract is a testimony to Sig Sauer employees, their commitment to innovation, quality and manufacturing the most reliable firearms in the world," Cohen added.

The Army launched its long-awaited XM17 MHS competition in late August 2015 to replace its Cold War-era M9 9mm pistol.

"By maximizing full and open competition across our industry partners, we have optimized private sector advancements in handguns, ammunition and magazines, and the end result will ensure a decidedly superior weapon system for our warfighters," Army Acquisition Executive Steffanie Easter said in a press release.

One of the major goals of the effort was to adopt a pistol chambered for a more potent round than the current 9mm. The U.S. military replaced the .45 caliber 1911 pistol with the M9 in 1985 and began using the 9mm NATO round at that time.

In their statements, Army and Sig officials didn't specify what caliber the new Sig Sauer pistol will be.

Sig touts the P320 model product as "modular" and "adaptable," with interchangeable grips, multiple sizes and calibers that can be converted between 9mm, .357SIG and .40SGW. "From calibers, to pistol size, to the grip fit best suited for the shooter, the P320 is the most adaptable pistol available today," the company says in promotional materials.

Two sources confirmed to Military.com that Sig submitted to the Army .40-caliber and 9mm pistols for consideration. One source said the Army ultimately selected the 9mm version.

Shortly after the contract announcement, Sig officials celebrated here at the show. Staff at the Sig Sauer booth set out champagne flutes for a celebratory toast.

The Army in December down-selected to two finalists for the competition: Sig and Glock, which had submitted its Glock 17 and Glock 19 models for consideration. Given the size of the contract, Glock is widely expected to protest the decision.

Brandie Collins, communications manager for Glock, said she had not been briefed on the contract award but wished the winners well.

Army officials informed Beretta USA and FN America at the show that they had been dropped from the competition in the recent down-select decision, according to a service source who is not authorized to speak to the press. But confusion reigned as reporters informed company officials of the Army's announcement.

The decision formally ends the Beretta's 30-year hold on the Army's sidearm market.

Gabrielle de Plano, vice president of Beretta Defense Technologies marketing and operations, said staff were still reading through the contract announcement to fully understand it.

"It's going to have to be a no comment from us for now," he said.

Beretta has fought hard to remain to remain the Army's pistol maker. In December 2014, Beretta USA submitted its modernized M9A3 as a possible alternative to the Army's Modular Handgun System program.

But the Army rejected the improved M9A3, which featured new sights, a rail for mounting lights and accessories, better ergonomics and improved reliability. The company, however, wasn't finished yet. It developed a new striker-fired pistol, the APX, and entered it into the competition.

Kristina DeMilt, public relations for FN, said officials at the show hadn't been informed of the award and were not immediately prepared to comment.

The Army began working with the small arms industry on Modular Handgun System in early 2013, but the joint effort has been in the works for more than five years. It could result in the Defense Department buying nearly 500,000 new pistols.

Current plans call for the Army to purchase more than 280,000 handguns, according to Program Executive Office Soldier officials. The Army also plans to buy approximately 7,000 sub-compact versions of the handgun.

The other military services participating in the program may order an additional 212,000 systems above the Army quantity.

"As MHS moves forward into operational testing, the due diligence taken by all of the stakeholders will ensure a program that remains on-budget and on-schedule," Easter said.

Lawmakers may be eager to hear such an assessment.

During last week's confirmation hearing for retired Marine Gen. James Mattis to become defense secretary in the Trump administration, Republican Sens. Joni Ernst of Iowa and Thom Tillis of North Carolina took turns criticizing what they described as an overly bureaucratic effort, with technical requirements totaling several hundred pages.

This article originally appeared on Military.com.

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## **BIGELOW AEROSPACE SEEKING ADDITIONAL USE OF EXPERIMENTAL ISS MODULE**

by Jeff Foust — January 19, 2017

<http://spacenews.com/bigelow-aerospace-seeking-additional-use-of-experimental-iss-module/#sthash.dRRC673C.dpuf>



**BEAM, the Bigelow Expandable Activity Module, is highlighted in its expanded configuration in this computer rendering. Credit: NASA/Bigelow**

**WASHINGTON — Bigelow Aerospace is in discussions with NASA about extended use of an experimental module added to the International Space Station last year, but both the company and the space agency say no agreement has been reached yet.**

**In a Jan. 18 tweet, the company said that the performance of its Bigelow Expandable Activity Module (BEAM) “continues to outperform expectations.” The module, built under a NASA contract and flown to the station on a SpaceX Dragon cargo spacecraft in April 2016, was installed on the station and expanded to its full size in late May.**

**In the same tweet, the company said it and NASA “are in agreement to evolve BEAM into becoming an everyday asset aboard the ISS.” The company did not elaborate on what that would involve.**

**In a statement to SpaceNews Jan. 18, company founder Robert Bigelow said more details about any agreement with NASA about extended use of BEAM would be released at a later date. “We are excited that BEAM may serve multiple uses that could extend its time attached to station well beyond the original two-year expected period,” he said. “We will be happy to provide more specifics as this process develops shortly.”**

**NASA spokeswoman Cheryl Warner said Jan. 18 that the agency was still in discussions with Bigelow about “next steps” for BEAM. “The BEAM demonstration is providing valuable data regarding how the materials and an expandable structure perform in the space environment,” she said. “We are in discussions with Bigelow Aerospace to evaluate the next steps for the module.”**

**BEAM’s principal mission is to demonstrate the company’s expandable module technology and its suitability for use on crewed spacecraft. Although the company previously demonstrated that technology on two uncrewed spacecraft, Genesis 1 and 2, launched in 2006 and 2007, respectively, BEAM is the first time an expandable module has had people inside while in space.**

**BEAM is designed for a two-year mission on the ISS. The module is closed off from the rest of the station most of the time, with astronauts periodically entering BEAM to check the status of the module and instruments mounted inside.**

**NASA has previously indicated that it would dispose of BEAM at the end of its two-year mission, using the station’s robotic arm to detach the module and allow it to burn up in the atmosphere. There are no immediate plans, though, for use of the docking port where BEAM is installed after that two-year mission ends, opening the possibility for an extended mission.**

**Robert Bigelow has previously suggested there was commercial interest in the module. As a NASA press conference in April 2016 prior to the launch of BEAM, he said there were four different groups, both countries and companies, interested in flying experiments in BEAM. “We’re hoping that, maybe in half a year or something, we can get permission from NASA to accommodate these people in some way,” he said then.**

**NASA has identified the ISS port currently used by BEAM as a location that could eventually host larger commercial modules, intended as a stepping-stone to full-fledged commercial space stations. NASA issued a request for information (RFI) last July that**

several companies, including Bigelow Aerospace, responded to regarding use of that port and other station resources to host a commercial module.

In a blog post published on the NASA web site Oct. 11, NASA Administrator Charles Bolden and John Holdren, director of the White House's Office of Science and Technology Policy, said that the responses to the RFI led NASA to decide to move ahead with plans to offer that port to commercial users. The agency is yet to release additional details on those plans.

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## RASH OF GALILEO CLOCK FAILURES CAST DOUBT ON TIMING OF UPCOMING LAUNCHES

by Rob Coppinger — January 19, 2017

<http://spacenews.com/rash-of-galileo-clock-failures-cast-doubt-on-timing-of-upcoming-launches/>



Galileo 7 and Galileo 8 being moved to the launch pad in 2015. Credit: ESA-CNES-ARIANESPACE/Optique Vidéo du CSG

PARIS – Ten atomic clocks have failed onboard the European Union's Galileo navigation satellites, casting doubt on when the unfinished constellation's next batch of spacecraft will be orbited.

European Space Agency Director-General Jan Woerner told reporters Jan. 18 that the agency has not decided whether to go ahead as planned with an Ariane 5 launch in August of the next batch of four Galileo spacecraft. The launch is one of two scheduled over the next two years to complete the constellation of 26 needed to give Europe's GPS alternative global coverage.

“We have to find some systematic root cause, or go on [launching] and say, ‘OK, there might be some failures’,” Woerner, said during the agency’s annual briefing at its headquarters here. “Should we not launch until [we have] solved the problem? We are right now in this discussion as to what to do.”

In a statement released after the briefing, ESA said that it was committed to launching the next four satellites before the end of the year. Galileo’s launch service provider, Arianespace of Evry, France, has said it expects to conduct eight Ariane 5 campaigns this year — one more than it squeezed into 2016.

Galileo’s rash of atomic clock failures have involved both types of clocks aboard the 18 Galileo satellites launched to date. Three of the clocks that failed were rubidium atomic frequency clocks and seven were newer, more-precise passive hydrogen maser clocks, one of which has since restarted. Swiss firm Spectratime produces both clocks, but the company declined to comment.

ESA Director-General Jan Woerner during the European Space Agency’s Jan. 18 annual press briefing. Credit: ESA



ESA said in its statement that while investigations continue, the 22-nation space agency and its industrial partners have agreed “that some refurbishment is required on the remaining [rubidium] clocks still to be launched on the eight Galileo satellites currently being constructed or tested.

“A plan to refurbish the remaining [hydrogen maser] clocks still to be launched is currently being finalised,” the statement said.

So far, the clock failures have yet to sideline any of the in-orbit Galileo satellites, which are equipped with two of each kind of clock for redundancy.

ESA’s post-briefing statement said that, “in recent months a total of three [rubidium] clocks have undergone unexpected failure on Galileo satellites — all on Full Operational Capability (FOC) satellites, the latest Galileo model.” The agency thinks short circuits caused the failures. One FOC satellite suffered a hydrogen maser clock failure. The 14 operational FOC satellites launched since August 2014 were built by OHB System AG of Bremen, Germany, which referred all questions about the failures to ESA.

While the four Galileo In Orbit Validation (IOV) satellites that Airbus Defence and Space built and launched between 2011 and 2012 have not suffered any rubidium clock failures, five hydrogen maser clocks aboard the IOV satellites have failed within the past two years. ESA said in its post-briefing statement that it thinks those failures can be attributed to the clocks being switched off for long periods.

China and India use the same Spectratime-built atomic clocks for their satellite navigation systems. Woerner said that ESA had contacted India about the problems.

Despite having only 18 of the planned 26 satellites in orbit, ESA's customer, the EU's European Commission, announced Dec. 14 that Galileo was now offering its initial services. Galileo was originally planned to be operational in 2008 with 30 spacecraft. During the briefing, Woerner defended program, saying Galileo was about technology leadership, independence and competitiveness. The most recent Galileo launch was Nov. 17, when an Arianespace Ariane 5 rocket lifted off from Europe's Guiana Space Centre in Kourou, French Guiana, carrying Galileo 15 through 18. All previous Galileo launches were by Soyuz-Fregat rockets.

ExoMars, etc.

Another failure Woerner addressed in the briefing was the ExoMars mission's 300-kilogram Schiaparelli lander which crashed into the red planet in October. "The lander engine stopped after 3 seconds, the on-board [computer's] understanding of the data [was that it was] already below the surface of Mars and so the parachute was separated and computer stopped the [retro] engine," he said. "It looks like the root cause came from some [data] saturation of the gyros[scopes]. Information coming to the computer was in contradiction," leading the computer to believe it was beneath the Martian surface.

The problem needs to be solved before the ESA-Russian ExoMars campaign launches its rover in 2020. "[The] wrong decision of [by the] computer has to be investigated for [the] 2020 [rover] mission because that would be a disaster [if that crashed]," Woerner said.

But that is not the only problem ExoMars has: missing funds could yet add to its woes. At the ESA member states' budget setting summit in Lucerne, Switzerland, in early December, Woerner only got 340 million euros (\$363 million) for the rover mission when the agency needed 440 million euros.

Woerner said during the Jan. 18 briefing here that the gap could be filled with an additional 113 million euros added to the agency's science, basic activities and education budgets. But, he admitted, "if [the] inflation rate increases dramatically, we [will] have to ask the member states again."

During the annual briefing, Woerner also addressed what the agency had achieved in 2016, what it planned to do in 2017, and commented on future astronaut missions; the lack of any direct impact from Brexit; his contact with U.S. President-elect Donald Trump's NASA transition team; plans for more air traffic control from space; the launch of the first SmallGEO program derived telecoms satellite, and Europe's civilian X-37B, the Space Rider.

See more at: <http://spacenews.com/rash-of-galileo-clock-failures-cast-doubt-on-timing-of-upcoming-launches/#sthash.IUxe9It.dpuf>

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SPACEX IS ABOUT TO LAUNCH ONE OF ITS FINAL EXPENDABLE ROCKETS

Company betting on its "Block 5" version of the Falcon 9 for easy reusability.

ERIC BERGER - 1/22/2017, 12:38 PM

<http://arstechnica.com/science/2017/01/spacex-may-be-about-to-launch-its-final-expendable-rocket/>



The landed Falcon 9 rocket that launched the Iridium satellites on Jan. 14, 2017. SpaceX

After successfully returning to flight on January 14, SpaceX will make its next launch from Cape Canaveral no earlier than January 30. With this mission from a new pad at Launch Complex 39A, SpaceX will loft the EchoStar 23 communications satellite to geostationary transfer orbit.

This is a heavy satellite, weighing 5.5 metric tons, and getting it out to about 40,000 kilometers from the surface of the Earth will require pretty much all of the lift capacity of SpaceX's Falcon 9 rocket. This would leave almost no propellant for the Falcon 9 rocket to fire its engines to slow down, make a controlled descent through the Earth's atmosphere, and attempt a difficult landing on a drone ship.

On Saturday, in response to a question on Twitter, SpaceX founder and chief executive Elon Musk confirmed that the upcoming EchoStar launch will therefore indeed be expendable. "Future flights will go on Falcon Heavy or the upgraded Falcon 9," he added.

In other words, in the future such heavy payloads will either be launched on the more powerful Falcon Heavy (consisting of three Falcon 9 cores, designed for return), or a slightly more powerful variant of the Falcon 9 rocket. Although SpaceX may launch one or

two more expendable rockets, Musk is saying the plan here onward is to try and launch everything on reusable boosters.

### Falcon 9, Block 5

A few minutes later, Musk elaborated on the "upgraded Falcon 9" rocket, saying the "Block 5 is the final upgrade of the Falcon architecture. Significantly improves performance & ease of reusability. Flies end of year." Within this comment there are some important tidbits in here about the final version of the company's workhorse Falcon 9 rocket.

In many ways SpaceX has acted more like a startup company than a traditional aerospace company, and as such it has constantly been tinkering with the design of the Falcon 9, seeking to improve its performance. Unofficially, there have been at least four versions of the Falcon 9 booster—the Falcon 9 v1.0, Falcon 9 v1.1, Falcon 9R v1.1, and Falcon 9 Full Thrust. First flown in December, 2015, this last variant included and updated Merlin-1D rocket engine and used chilled, densified propellant. Combined, the rocket and propellant add about 30 percent to the lift performance of the previous Falcon 9.

But now SpaceX appears to be close to maximizing performance of the Falcon 9 rocket. Musk confirmed that SpaceX will make one more major improvement to its Falcon 9 rocket, which he's calling "Block 5." In a Reddit AMA in late 2016, he provided a little bit more information about this Block 5 version, saying it will increase performance (enough, such that a launch like EchoStar 23 could attempt a landing) and be designed for easy reuse.

### Easy reuse?

The latter point is potentially significant, given that in the near term one of SpaceX's primary goals is to simplify the reuse of its rockets. With seven first-stage booster landings at sea and on land, SpaceX has now shown that it can bring rockets home. The big question remains whether it has the capacity to refurbish those rockets on a timely and cost-effective basis before flying them again.

There are ample rumors in the spaceflight community about how SpaceX has struggled to make its existing, returned rockets ready for flight. Indeed, it has now been 13 months since the first landing, and the company is still at least a month away from re-flying a booster, which it plans to do with the SES-10 communications satellite launch.

It now seems likely that SpaceX will fly the landed boosters it currently has, at most, once or twice, before retiring them, instead of multiple times. Although the company hasn't elaborated on the problems with the engines, booster structure or composite materials that has challenged their attempts to re-fly its Falcon 9 first stages, Musk seems confident that changes to the Block 5 version of the rocket will solve the problem. "I think the F9 boosters could be used almost indefinitely, so long as there is scheduled maintenance and careful inspections," he said in his AMA.

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### CHINA SCHEDULES CHANG'E-5 LUNAR PROBE LAUNCH

Source: Xinhua 2017-01-22 22:50:57

[http://news.xinhuanet.com/english/2017-01/22/c\\_136004958.htm](http://news.xinhuanet.com/english/2017-01/22/c_136004958.htm)

BEIJING, Jan. 22 (Xinhua) -- China plans to launch the Chang'e-5 lunar probe at the end of November this year, from the Wenchang Space Launch Center in southern China's Hainan Province, aboard the heavy-lift carrier rocket Long March-5.

The mission will be China's first automated moon surface sampling, first moon take-off, first unmanned docking in a lunar orbit about 380,000 km from earth, and first return flight in a speed close to second cosmic velocity, according to the China Aerospace Science and Technology Corporation (CASC).

"With a weight of 8.2 tonnes, the lunar probe is comprised of four parts: an orbiter, a returner, an ascender and a lander," said Ye Peijian, one of China's leading aerospace experts and a consultant to the program.

The lander will put moon samples in a vessel in the ascender after the moon landing. Then the ascender will take off from the moon to dock with the orbiter and the returner orbiting the moon, and transfer the samples to the returner.

The orbiter and returner then head back to the earth, separating from each other when they are several thousands kilometers from earth. Finally, the returner will reenter the earth.

The development of Chang'e-5 has entered the end of its flight model phase, and relevant work is proceeding smoothly, according to CASC.

China plans to fulfill three strategic steps with the launch of Chang'e-5, "orbiting, landing and returning."

The country also plans to launch the Chang'e-4 lunar probe around 2018 to achieve mankind's first soft landing on the far side of the moon, and to conduct an in situ and roving detection and relay communications at earth-moon L2 point, according to the China National Space Administration.

"The country plans to send robots to explore both lunar poles," said the administration's vice director Wu Yanhua late last year, adding that plans to send astronauts to the moon were also being discussed.

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## **AURORA REFINES DESIGN OF ULTRA-EFFICIENT D8 AIRLINER**

Jan 18, 2017 Graham Warwick | Aviation Week & Space Technology

[http://aviationweek.com/technology/aurora-refines-design-ultraefficient-d8-airliner?NL=AW-05&Issue=AW-05\\_20170124\\_AW-05\\_66&sfvc4enews=42&cl=article\\_4&utm\\_rid=CPEN1000001477803&utm\\_campaign=8342&utm\\_medium=email&elq2=4a9c5ae63b0d465ca6e2ef3cb2632df8](http://aviationweek.com/technology/aurora-refines-design-ultraefficient-d8-airliner?NL=AW-05&Issue=AW-05_20170124_AW-05_66&sfvc4enews=42&cl=article_4&utm_rid=CPEN1000001477803&utm_campaign=8342&utm_medium=email&elq2=4a9c5ae63b0d465ca6e2ef3cb2632df8)

[http://aviationweek.com/technology/aurora-refines-design-ultraefficient-d8-airliner?NL=AW-05&Issue=AW-05\\_20170124\\_AW-05\\_66&sfvc4enews=42&cl=article\\_4&utm\\_rid=CPEN1000001477803&utm\\_campaign=8342&utm\\_medium=email&elq2=4a9c5ae63b0d465ca6e2ef3cb2632df8](http://aviationweek.com/technology/aurora-refines-design-ultraefficient-d8-airliner?NL=AW-05&Issue=AW-05_20170124_AW-05_66&sfvc4enews=42&cl=article_4&utm_rid=CPEN1000001477803&utm_campaign=8342&utm_medium=email&elq2=4a9c5ae63b0d465ca6e2ef3cb2632df8)

Aurora Flight Sciences continues to flesh out the D8 fuel-efficient airliner design originally developed for NASA by Massachusetts Institute of Technology (MIT), optimizing the wing and fuselage for performance and operability in airline service.

The "double-bubble" D8 is one of five configurations being considered by NASA for a large-scale X-plane demonstrator it hopes to fly in 2021. In addition to finalizing that proposal,

the XD8, for submission to NASA in March, Aurora is refining its objective design, the OD8, for a 180-seat, 3,000-nm-range airliner that could be ready for production in 5-10 years.

Part of the effort is FAA-backed work to demonstrate a key element of the design—a composite structural concept that enables the aircraft to have a nonoval twin-aisle fuselage with acceptable weight. Dual aisles in the 180-seat class would give airlines faster boarding/deboarding times and a better passenger experience compared with today's single aisles, Aurora says.

Proposed by MIT in 2010 to meet NASA's so-called N+3 goals for an airliner that could enter service by 2035, the D8 integrated multiple technologies to reduce fuel burn by 70% and noise by 71 dB. Aurora has since taken the lead in refining the design. The N+3 study "did a good job on the OML [outer mold line], but kicked it down the road to figure out the guts," says Jeffrey Chambers, Aurora's airframe integrated product team lead for the D8 program.



Changes from MIT D8 to Aurora OD8 include new transonic wing and revised cockpit windows. Credit: Aurora Flight Sciences

Aurora has modified the design to increase the cruise speed from a fuel-miserly Mach 0.74 by fitting a more traditional Mach 0.82 transonic wing. Changes in aisle, seat and door spacing for emergency egress also

grew the fuselage by 3 in., Chambers said at the American Institute of Aeronautics and Astronautics' SciTech conference here in Grapevine, Texas. The resulting more-conservative OD8 product design is estimated to reduce fuel burn by 49% and noise by 40 EPNdB from a Boeing 737NG-class aircraft.

The D8 is less radical than competing blended wing/body concepts to ensure it could replace 737 and Airbus A320-class airliners "without modifying airport infrastructure in which billions have been invested," he says, Aurora has validated the aircraft can use existing air bridges and servicing vehicles.

Embedded engines have canted cores driving distortion-tolerant fans via shafts and gearboxes. Credit: Aurora Flight Sciences

Aircraft cross-sections are usually circular, as this is the most efficient way to carry the hoop stress resulting from cabin pressurization. A key part of the early effort has been to select and validate a structurally optimal noncircular fuselage design for the OD8.

MIT's original double-bubble concept had side-by-side cylinders that were merged, with a central keel joining the upper and lower cusps to carry the pressure loads and reduce the weight of skins and frames. Aurora has looked at different ways of turning this structural concept into reality, including a shear wall, tension rods and a combination of partial webs and tension straps.



The company also looked at a "flat double bubble" with no cusps, but this incurred too great a weight penalty. Comparing a full-height wall with cutouts for passenger egress to partial-height upper and lower webs running the length of the cabin and tied together at every other frame by tension rods showed the latter, hybrid approach was lighter, says Chambers.



Tension rods do not appear intrusive in this illustration of the double-bubble twin-aisle fuselage. Credit: Aurora Flight Sciences

The 0.1-in.-thick webs are below the floor and between the overhead bins and do not protrude into the cabin, and

0.25-in.-dia. tension rods are not intrusive, judging by a "fly-through" video of the OD8 interior produced by Aurora. "Partial webs and rods are the most weight-efficient, and 8% lighter than the flat double-bubble equivalent," he says.

To validate the structural concept, Aurora will build and test a 10 X 3-ft. section of the lower cusp region this year with funding from the FAA's Continuous Lower Energy, Emissions and Noise (CLEEN) research program. The first carbon-fiber parts are being produced using the company's automated fiber-placement machine.

A key aspect of the fuel-saving configuration is boundary-layer ingestion, in which distortion-tolerant fans embedded between the twin vertical tails ingest the slow-moving air over the upper surface of the wide fuselage and reenergize the wake, reducing drag. This has yet to be validated in flight and is a key element of Aurora's X-plane proposal to NASA.

The design places the powerplants side-by-side on the tail—an arrangement that would normally be avoided because of the risk of an uncontained failure in one engine damaging the other. Aurora avoids this with an unconventional propulsion architecture in which the small-core engines are canted relative to each other, to avoid debris from one hitting the other, and drive the fans via shafts and gearboxes.

While the proposed XD8 would be powered by one off-the-shelf engine driving both fans, Aurora CEO John Langford acknowledges the objective OD8 will require the integrated development of both new aircraft and new engine configurations—unlike the current paradigm of developing the engines separately and, in most cases, offering customers a choice of powerplant.

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From: "Chris Cowan" [cowanc1028@earthlink.net](mailto:cowanc1028@earthlink.net)

IT'S A GIRL! SPECIAL T. REX WAS AN EXPECTANT MOTHER

A follow-up study confirms the one sure way to sex a Tyrannosaurus.

NC University State News

[https://blogs.scientificamerican.com/laelaps/its-a-girl-special-t-rex-was-an-expectant-mother/?WT.mc\\_id=SA\\_DD\\_20170118](https://blogs.scientificamerican.com/laelaps/its-a-girl-special-t-rex-was-an-expectant-mother/?WT.mc_id=SA_DD_20170118)



Sexing a dinosaur isn't easy.

As far as gross skeletal anatomy is concerned, male and female dinosaurs are practically identical. The shape of saurian bones offers no help. So far as anyone has been able to tell, the skeletons of dinosaurs were not markedly sexually dimorphic (or, in other words, different between males and females). Even in highly-ornamented species of horned

dinosaurs, armored dinosaurs, and others, all the gnarly spikes, plates, and crests don't show a definitive split in form that can be taken as a marker of different sexes.

But the external anatomy of bones isn't everything. A pair of surprises provided opportunities for paleontologists to identify some female dinosaurs, at least. In 2005 paleontologist Tamaki Sato and coauthors reported on a fossil of a parrot-like oviraptorosaur that had been preserved with a pair of eggs nestled between her hip bones. This dinosaur was definitely a female.

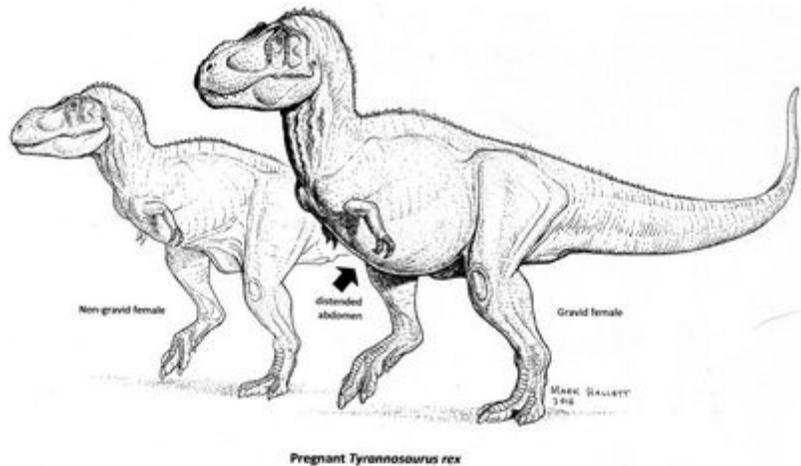
The next find came fast. Just a few months later, molecular biologist Mary Schweitzer and her colleagues reported on another way female dinosaurs could be identified through their pregnancies. A thigh bone of a *Tyrannosaurus rex*—MOR 1125 or “B. rex” to fossil fans—has a special tissue inside the main cavity called medullary bone. The same type of bone is seen in living birds, and is laid down when estrogen skyrockets following ovulation. In short, if you see medullary bone, you've found a pregnant female.

Not everyone agreed with this interpretation. Other experts suggested that the messy, rapidly-deposited bone tissue inside the T. rex was from a disease and that similar types of bone found in the jaws of male and juvenile pterosaurs—the flying relatives of dinosaurs—meant that medullary bone can't be taken as a reliable indicator of a dinosaur's sex.

But Schweitzer and a multidisciplinary team of experts have now answered these criticisms with a new study of the original T. rex clue. What did they find? That MOR 1125 truly was pregnant when she died.

Credit: Mark Hallett

Schweitzer and her colleagues approached the fossil from multiple avenues, re-examining the structure of the peculiar bone tissue with CT scans but also looking at its chemical composition. This is the key in teasing out tricky tissues, the researchers write, because medullary bone is chemically different from other bone types.



True medullary bone contains a higher proportion of mineral content and biomolecules called glycoaminoglycans than the surrounding tissue. So when the researchers used a stain to reveal the presence of biomolecules known to be abundant in medullary bone, the reaction fit with what they had suspected: the stain literally highlighted the fact that MOR 1125 had a femur infilled with the mineral-rich tissue.

The bone in MOR 1125 was not a pathology, and the superficially similar tissues in the pterosaurs must be attributable to some other condition or process. (Medullary bone is estrogen-dependent, Schweitzer and coauthors point out, so similar tissues in male and immature animals have to be something different.)

Gravid dinosaurs really did lay down true medullary bone inside themselves, and this discovery holds fantastic possibilities for investigating how dinosaurs actually lived. But there's a more subtle point that's just as important to the way we think about these animals.

In fossiliferous shorthand, it's easy to say that dinosaurs turned to rock during their long tenure in the earth. And yes, their bones and other tissues come down to us as permineralized versions of the originals. But it's not as if everything of the real creatures was obliterated.

“Original organic components are assumed to be completely destroyed during burial and fossilization processes over millions of years,” Schweitzer and colleagues write. “However, we have shown that tissues, cells, and fragments of original molecules can persist across geological time.” Dinosaurs didn't turn to stone like mythological trolls caught in sunlight. After all this time, tatters of the living creatures remain. Look at dinosaurs as once-living animals, not piles of bone-shaped rocks, and you can start to see them.

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## HENN-NA HOTEL

The world's first hotel to be run by robots.



## SASEBO, JAPAN

[http://www.atlasobscura.com/places/henn-na-hotel?utm\\_source=Atlas+Obscura+Daily+Newsletter&utm\\_campaign=e175e027b0-Newsletter+1+7+2017&utm\\_medium=email&utm\\_term=0\\_f36db9c480-e175e027b0-63378349&ct=i\(Newsletter+1+7+2017\)&mc\\_cid=e175e027b0&mc\\_eid=4c73fa18f4](http://www.atlasobscura.com/places/henn-na-hotel?utm_source=Atlas+Obscura+Daily+Newsletter&utm_campaign=e175e027b0-Newsletter+1+7+2017&utm_medium=email&utm_term=0_f36db9c480-e175e027b0-63378349&ct=i(Newsletter+1+7+2017)&mc_cid=e175e027b0&mc_eid=4c73fa18f4)

Front desk at Henn Na Hotel COURTESY OF HENN NA HOTEL

On the Kyushu Island of southwestern Japan you'll find a hotel run almost entirely by robots. At the Henn-Na Hotel, located in Japan's Dutch-themed Huis Ten Bosch Theme Park, all receptionists, bellhops, and concierges greet guests with the sweet, soothing mechanical voice of artificial intelligence.

Called “the most efficient hotel in the world,” the Henn-Na Hotel (“Henn-Na” translates to “strange” in English) is a prime example of AI replacing traditionally human-occupied jobs. Over 90% of the staff consists of autonomous robots, a total of 186 machines.



Upon entering, three front desk clerks will be waiting for you: an eerily realistic female robot and two eager velociraptors dressed as bellhops. After checking in, a mechanical arm will place your luggage in a drawer and a one-foot robotized concierge will explain breakfast times and other hotel information. The red porter robot will then escort you to your room.

To unlock the door, no key is needed—simply place your face in front of a sensor and facial-recognition technology will open the door (or at least in theory). Upon entering the room, you will meet Churi-chan, a pink and green miniature robot which offers wakeup calls, will tell you the weather, and can even control the lights. Strange indeed.



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## THE FEMALE SPACE SCULPTOR WHO DESIGNED THE EARLIEST SPACE AND AVIATION HELMETS

Alice King Chatham's name is attached to some of the world's most pivotal aviation and space experiments.

by Lauren Young, January 18, 2017

[http://www.atlasobscura.com/articles/the-female-space-sculptor-who-designed-the-earliest-space-and-aviation-helmets?utm\\_source=Atlas+Obscura+Daily+Newsletter&utm\\_campaign=ed10c00a2c-Newsletter\\_1\\_20\\_2017&utm\\_medium=email&utm\\_term=0\\_f36db9c480-ed10c00a2c-63378349&ct=t\(Newsletter\\_1\\_20\\_2017\)&mc\\_cid=ed10c00a2c&mc\\_eid=4c73fa18f4](http://www.atlasobscura.com/articles/the-female-space-sculptor-who-designed-the-earliest-space-and-aviation-helmets?utm_source=Atlas+Obscura+Daily+Newsletter&utm_campaign=ed10c00a2c-Newsletter_1_20_2017&utm_medium=email&utm_term=0_f36db9c480-ed10c00a2c-63378349&ct=t(Newsletter_1_20_2017)&mc_cid=ed10c00a2c&mc_eid=4c73fa18f4)



from the 1961 Mercury spacesuit. The space helmet wouldn't be the same had it not been for Alice King Chatham's contributions. NASA

Who is the real Alice King Chatham, sculptor of helmets worn by monkey astronauts?

That was the question posed to a panel of four celebrities—one of whom was Betty White—in the August 31, 1964 episode of the game show To Tell The Truth. The host, Bud Collyer, presented three people to the panel, all of whom

claimed to be King Chatham.

As you can see at the 18-minute mark in the video below, the celebrities interrogated the women with questions. Two were impostors, their answers all lies. One was the real King Chatham—a sculptor who helped craft the earliest space helmets of the United States Space Program.

“I have cast in wax the heads of the seven Mercury astronauts,” the host Bud Collyer read from a statement King Chatham wrote, before the panel spoke to the women. “These models were used to design for each man a perfect fitting helmet liner.”

None of the celebrities were able to correctly identify King Chatham, whose exact contributions to the field of space helmet design are the subject of debate.

Video link to To Tell The Truth: <https://youtu.be/u5V3rjXcsus>

During the height of 1960s space and flight exploration in the United States, Alice King Chatham worked behind the scenes creating partial-pressure pilot suits, test dummies, oxygen masks, space beds, and helmets for NASA and the U.S. Air Force. She even helped design suits for the television show Star Trek.

In the early 1940s, King Chatham was working as an artist and sculptor when she was recruited by the Air Force to help make the first successful oxygen breathing masks worn by all American World War II pilots. She was involved in an array of major experiments, studies, and projects, from creating space helmets for the 1963 first man-in-space program Project Mercury to designing prototype suits for monkeys that flew in the Aerobee sub-orbital rocket tests during the 1940s.

An example of an early pressure suit and helmet. King Chatham was critical in developing oxygen masks for World War II pilots. NASA

It was not uncommon for female artists to be recruited into the U.S. Army for their skills during wartime. Around 1943, King Chatham had been sculpting ducks, dogs, and horses at the Art Institute in Dayton, Ohio, when she received a request from the head of the anthropology unit at Wright Field's Aero-Medical Laboratory, Francis Randall. “As an artist and sculptress she understood the human body,” reported Lee Street for The Baltimore Sun in 1953.



In the '40s, new fighter planes were reaching increasingly higher altitudes, requiring pilots to wear pressurized masks to avoid blacking out during flight. King Chatham's sculpting expertise was needed at the Wright Air Development Center, the Air Force base near Dayton, for a crucial mission: to help perfect an oral-nasal oxygen mask for pilots traveling

above 20,000 feet. The various designs and prototypes eventually led to the mask that became ubiquitous head gear among World War II pilots.

King Chatham became an expert of the flight helmet and the lab's equipment specialist for personal protective gear. She is credited with developing a new pressure helmet that improved an iteration of the 1946 S-1 pressure flight suits, and special ear counter-pressure devices.

Scientists came to King Chatham with a list of different criteria for different kinds of helmets—one with a breathing tube, a microphone, and an opening for liquid feeding. She would, over several months, fashion experimental models out of rubber, plastics, and fabrics.

“The professional men at the Laboratory admit they don't know how she does it,” Street wrote.

Major Arthur “Kit” Murray in 1954 wearing an early partial pressure suit. NASA

King Chatham's lab often smelled like a zoo, says Street. She fitted oxygen equipment to many animals that flew in tests, including guinea pigs, rabbits, pigs, and a 140-pound Saint Bernard. King Chatham also made clothes for monkeys, outfitting them in tiny pressure suits and helmets for the Aerobee rockets that flew 34 miles above the Earth. However, one accomplishment under high debate and speculation is her involvement with the X-1 project, the top-secret rocket plane piloted by Captain Chuck Yeager that would break the sound barrier in 1947.



According to her obituary and authors of the book *Mothers of Invention*, King Chatham had to create a special helmet that would protect Yeager from the extreme pressures of the high-speed flight. It's said that she had tested several different prototypes, which led to the actual helmet Yeager wore during the X-1 mission. However, research by Shayler David and Ian Moule in *Women in Space* contradicts her ownership of the helmet's design. Yeager stated that he had built it himself by cutting a World War II tank helmet and fastening it to a leather flying helmet. King Chatham may have been a part of designing pressure helmets of Yeager's later X-1 missions.

Her work designing oxygen masks and pilot helmets for the Air Force led her to NASA. For the Mercury Project, she was commissioned to create the helmets, casting each of the astronauts' heads in wax to get perfect, custom headgear. “All the astronauts are extremely stable, and have great personalities,” King Chatham told Mary Ann Callan for the *Los Angeles Times* in 1961. “They were easy to work with, even though the fitting took half a day each.”



Some sources say King Chatham may have assisted with Yeager's helmet for later X-1 missions. Public Domain

King Chatham would often be the lone woman assigned to projects. During her employment at Douglas Aircraft Company in Santa Monica, California in the 1960s, she was the only female developing features to add comfort in personnel gear, wrote Callan. She had

the unprecedented task of thinking "of everything, because there is simply no 'room service' in a space capsule."

The seven astronauts of the 1963 Mercury Project. NASA

While the exact details of her contributions to space and aviation innovation remains unknown, it's clear that King Chatham's career as a space sculptor was captivating, indicated by the amazed cast of *To Tell The Truth*.

King Chatham died in Los Angeles at 81 in July 1989. A number of her early art sculptures were placed on display at the Dayton Art Institute, according to her obituary.



"What Alice did exactly is currently debatable," Bruce Hess, historian at Wright-Patterson Air Force Base says in *Women in Space*, "but she undoubtedly was involved in those pioneering steps involving manned space exploration and flight."

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From: "Jim Woosley" [Jimwoosley@aol.com](mailto:Jimwoosley@aol.com)

HOTTEST YEAR EVER!! RIGHTS. LAST MAN ON THE MOON; AND OTHER IMPORTANT MATTERS.

By Jerry Pournelle, January 19, 2017

<https://www.jerrypournelle.com/chaosmanor/hottest-year-ever-rights-last-man-on-the-moon-and-other-important-matters/>

## EARTH BREAKS HEAT RECORD

Wednesday January 18, 2017 09:47 PM

By Amina Khan, Los Angeles Times (TNS)

It's official: 2016 was the hottest year on record since scientists began tracking Earth's temperature more than 100 years ago, according to independent analyses by NASA and the National Oceanic and Atmospheric Administration.

The 1.69-degree jump over the 20th century average, according to NOAA, marks the third year in a row that global temperatures have reached record-shattering levels. The National Aeronautics and Space Administration added that the global average temperature for 2016 was 1.78 degrees higher than a baseline period between 1951 and 1980.

Both agencies noted that Earth's average global temperature — which NOAA pegged at 57 degrees — was higher in 2016 than in any year since scientists began tracking it in 1880.

“For the first time in recorded history, we have now had three consecutive record-warm years,” said Michael Mann, a climate scientist at Pennsylvania State University who was not involved in the findings. “The likelihood of this having happened in the absence of human-caused global warming is minimal.”

<http://www.readingeagle.com/ap/article/earth-breaks-heat-record>

## END OF LA TIMES ARTICLE

Frightening, isn't it? It's what I saw when I opened the LA Times (after removing the annoying advertising wrap that obscured the front page).

But then I started reading the fine print, and it's not so scary. That hockey stick wavy red line shows a temperature rise over the last century all right: one and a half degrees. That assumes we have, accurate to a tenth of a degree, an actual measurement of the temperature of the last century. It also takes not the actual average (as if we actually knew that) but the adjusted temperature. And I trust you noticed that “The National Aeronautics and Space Administration added that the global average temperature for 2016 was 1.78 degrees higher than a baseline period between 1951 and 1980.”

What it doesn't mention is that the scientific community was in a tizzy about the coming Ice Age in the baseline period between 1951 and 1980. I attended most of the American Association for the Advancement of Science (AAAS) annual meetings from about 1968 to



the end of the Century, and up into the 1890's the AAAS was in a panic about Global Cooling. Some of you may recall Stephen Schneider's book "The Genesis Strategy", which has a picture of Schneider and Margaret Meade on the dust jacket. I took that picture (as a favor to them; I didn't ask for or expect credit). Dealing with the coming ice was a major concern then; indeed, one of the arguments against made by President Carter's science advisors was that nuclear waste had to be protected from glaciers in the future, thus raising the cost of nuclear energy. I even got into that debate.

Further:

<http://www.climatedepot.com/2017/01/18/load-of-bollocks-2016-allegedly-hottest-year-by-immeasurable-1100-of-a-degree-while-satellites-show-pause-continues/>

**Load of bollocks: 2016 allegedly 'hottest year' by immeasurable amount degree – While satellites show 'pause' continues**

**Two satellite datasets agree: The Temperature Pause lives on: 'No warming for the last 18 years'**

**MIT climate scientist Dr. Richard Lindzen on 2016 being called the 'hottest year': 'The hysteria over this issue is truly bizarre' – Warns of return 'back to the dark ages'**

**Dr. David Whitehouse noted the 'temperature pause never went away': 'According to NOAA 2016 was 0.07°F warmer than 2015, which is 0.04°C. Considering the error in the annual temperature is +/- 0.1°C this makes 2016 statistically indistinguishable from 2015, making any claim of a record using NOAA data specious.'**

**Dr. Lindzen also ridiculed previous 'hottest year' claims. "The uncertainty here is tenths of a degree. When someone points to this and says this is the warmest temperature on record, what are they talking about? It's just nonsense. This is a very tiny change period," Lindzen said. "If you can adjust temperatures to 2/10ths of a degree, it means it wasn't certain to 2/10ths of a degree."**

[snip]

**Death Of Global Temperature 'Pause' Greatly Exaggerated – 2016 Not Statistically Warmer Than 1998**

**Dr David Whitehouse: 'Any estimate of temperature trends that have their endpoint on the uptick of the El Nino curve will give a misleadingly high trend. It is obvious that a better trend will be obtained after the natural El Nino has ended. Likewise care must be taken if the start point is near the La Nina years of 1999-2000. The temperature trends of the oceans estimated by the new paper fall into this trap.'**

**You can find a great deal more if you look for it, but you'll have to look hard; the "consensus" data get most of the ink; those who ask questions generally get short shrift. But it's there if you want. What you need to keep in mind is that the global temperature has been rising about 2 degrees per century since the Little Ice Age, and it certainly is not as warm now as it was when Leif Ericson founded the dairy farms in Greenland, some of which are still under the ice. The Earth has been warmer in historical times; and of course we're still technically in an Ice Age. It would be well to have the means to control earth's temperature; but that will require a lot of power. It will almost undoubtedly require nuclear, which emits no pollutants, and generates power that energy that did not fall on the Earth. Space Solar Power, power satellites, generate energy from sunlight that would have hit the**

earth anyway, but they can also be used to bring down power that would not in case we need that.

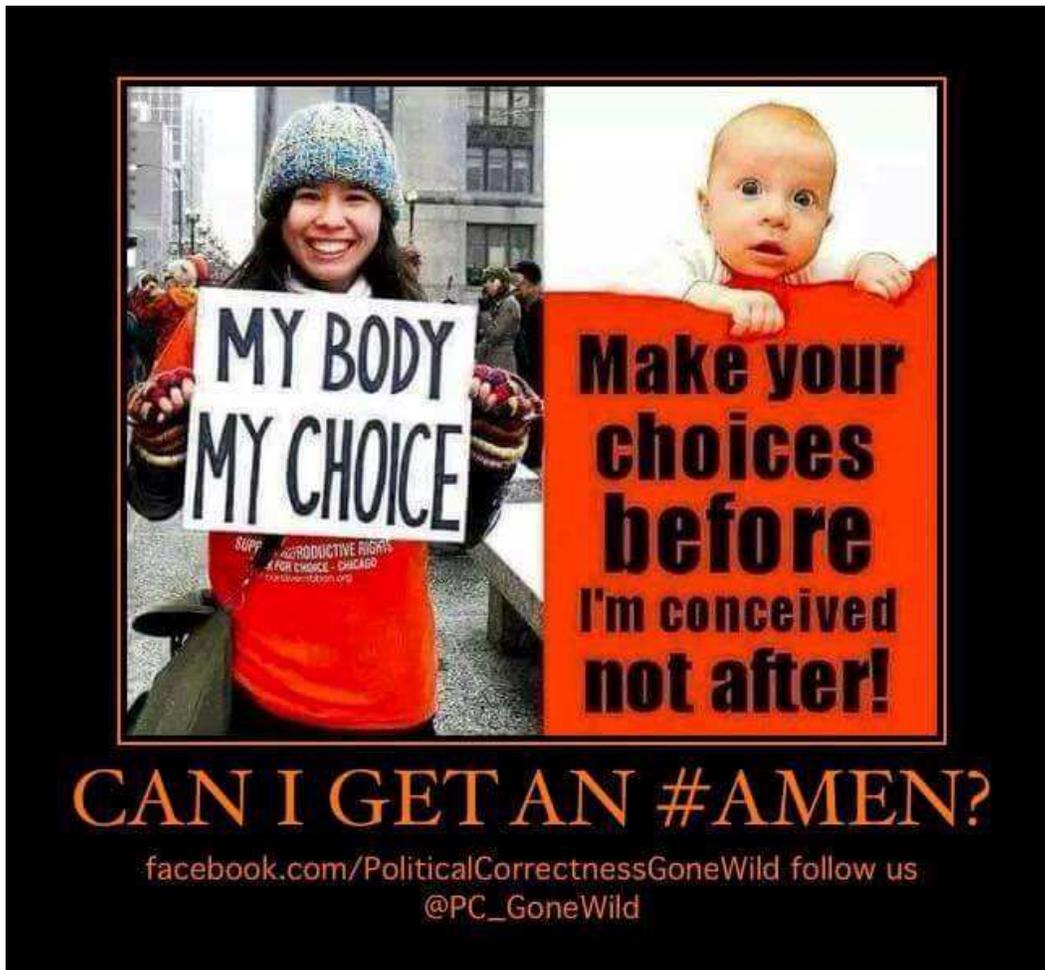
I have said this many times before, but it bears repeating: we do not have a pollution problem. We do not have a fresh water problem. With sufficient energy, pollutants can be taken apart into their constituent elements, and used water can be purified and pumped up into the mountains to refill the natural aquifers. The cleanest running stream in California is the outfalls of the maximum purification elements of the Hyperion sewage disposal plant; at the moment we pump it out to sea, but if we had the energy we could pump it up to the top of the San Gabriel's and let it run down the natural watercourses. Los Angeles is in an arid area and we'd need some outside water; but if we recycle we wouldn't need anywhere near as much as we take from Mono Lake and the Bay Area. All we need is the power.

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ABSOLUTELY & TOTALLY POLITICALLY INCORRECT & AS FAR TO THE CENTER AS YOU CAN GO!

From: "Tim Bolgeo" [tbolgeo@epbfi.com](mailto:tbolgeo@epbfi.com)

BOTH SIDE OF THE COIN



<~><~><P><O><L><I><T><I><C><A><L><L><Y>~<I><N><C><O><R><R><E><C><T><~><~>

**ABSOLUTELY & TOTALLY POLITICALLY INCORRECT & AS FAR TO THE LEFT AS YOU CAN GO!**

From: "Tim Bolgeo" [tbolgeo@epbfi.com](mailto:tbolgeo@epbfi.com)

**IDAHO DEMS EXEC DIRECTOR: DNC SHOULD TRAIN PEOPLE IN 'HOW TO SHUT THEIR MOUTHS IF THEY'RE WHITE'**

by [IAN HANCHETT](#), 23 Jan 2017

<http://www.breitbart.com/video/2017/01/23/idaho-dems-exec-director-dnc-should-train-people-in-how-to-shut-their-mouths-if-theyre-white/>



During Monday's Democracy in Color DNC debate, Idaho Democratic Party Executive Director and DNC Chair candidate Sally Boynton Brown stated that "my job is to shut other white people down when they want to interrupt. My job is to shut other white people down when they want to say, oh, no, I'm not prejudiced. I'm a Democrat. I'm accepting." My job is to make sure that they get that they

have privilege." And argued the DNC should have training for people in "how to shut their mouths if they're white."

Brown said, "Black lives matter, and it makes me sad that we're even having that conversation, and that tells me that white leaders in our party have failed. We have to accept that there is prejudice that exists within our own party, and we have to be able to have that conversation. We cannot sweep that under the rug. We cannot continue to hide it. We cannot smash voices down when they are trying to scream, 'Listen to me, you don't get it.' I'm a white woman. I don't get it. I am pleased and honored to be here today to have the conversation. I am so excited that we're here, and I'm listening, because that's my job. My job is to listen to the issues."

She added, "My job is to listen and be a voice, and my job is to shut other white people down when they want to interrupt. My job is to shut other white people down when they

want to say, oh, no, I'm not prejudiced. I'm a Democrat. I'm accepting.' My job is to make sure that they get that they have privilege.

And until we shut our mouths, and we listen to those people who don't, and we lift our people up, so that we all have equity in this country, so that we're all fighting alongside each other, so that we are all on the same page, and we clearly get where we're going, we're not going to break through this. This is not just rhetoric. This is life or death. This moment in our country, the Democratic Party has the opportunity to do something different. We have the opportunity to really confront the fact that we have not been in alignment with our values. We've been talking a lot of smack. We need to make sure that our actions and our words and our values all match, and around the issue of race, we are so far out of alignment, I don't even know the way back."

Brown further stated that Idaho is "so white." And she's been trying to reach out to anyone of color "to be honest with me." She added, "I need schooling...so that I can go school the other white people. We need it."

She concluded that the DNC needed to train people in how to communicate, be sensitive, "and how to shut their mouths if they're white."

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