Welcome to the April 11th, 2018 Edition of THE REVENGE HUMP DAY!

This has been a sad week for the Bolgeo Clan because one of our most important members have passed away. My mother-in-law, Mary Louise Carpenter Vannucci, passed away on Sunday, April 8th due to natural causes. Louise had just celebrated her 92 birthday on Saturday April 7th, the day before her passing. Louise has been in the Soddy Daisy Nursing Home for a number of years and has been faithfully tended by Linda and her brother John. When Louise passed, she had been visited by most of the clan on that day and she knew she was surrounded by love and family. We will all miss her and hold her in our hearts for the rest of our lives.

Louise is with Pop, her husband John Olinto Vannucci Sr., now and the rest of her sisters (Jean and Dorris), brother (Abbie) and her son (Larry) in heaven. May the perpetual lights shine upon you Granny and may you know that your immortality is assured through your children, grandchildren and great grandchildren. Say hello to Pop for me.

So on that "sad note", 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>~<!>

PASSING OF A BELOVED PATRIARCH

From Brandy Spraker's Facebook Page

Mary Louise Vannucci
Attended St. Jude Catholic Church
Monday, April 9, 2018
http://www.chattanoogan.com/2018/4/9/366491/Mary-Louise-Vannucci.aspx

Mary Louise Vannucci, 92, of Hixson, passed away on Sunday, April 8, 2018.
Born in Memphis, to the late Charles and Mary Mattie Cole Carpenter. She attended St. Jude Catholic Church.
She was preceded in death by a son, Larry Joseph Vannucci; husband of 70 years, John Olinto Vannucci, Sr.; one brother and two sisters.

Mary Louise leaves behind to cherish her memory a daughter, Linda (Tim) Bolgeo; son, John O. (Sharon) Vannucci, Jr.; six grandchildren, Shannon Vannucci, Brandy Bolgeo Spraker; Jason (Jamie) Bolgeo, Joseph (Elizabeth) Vannucci, Jacob and Jerad Vannucci; seven great-grandchildren; one great-great-grandson; sister-in-law, Betty Vannucci, SCN.

The family will receive friends from 4-8

p.m. on Wednesday, April 11, at the North Chapel of Chattanooga Funeral Home, where a rosary will be said at 8 p.m.

A graveside service will be held on Thursday, April 12, at 2 p.m. CDT, at Calvary Cemetery, 1663 Elvis Presley Blvd., Memphis, Tn. 38106.

The family would like to thank the staff of Soddy Daisy Healthcare for their loving care of our mother and dad during these last few years.

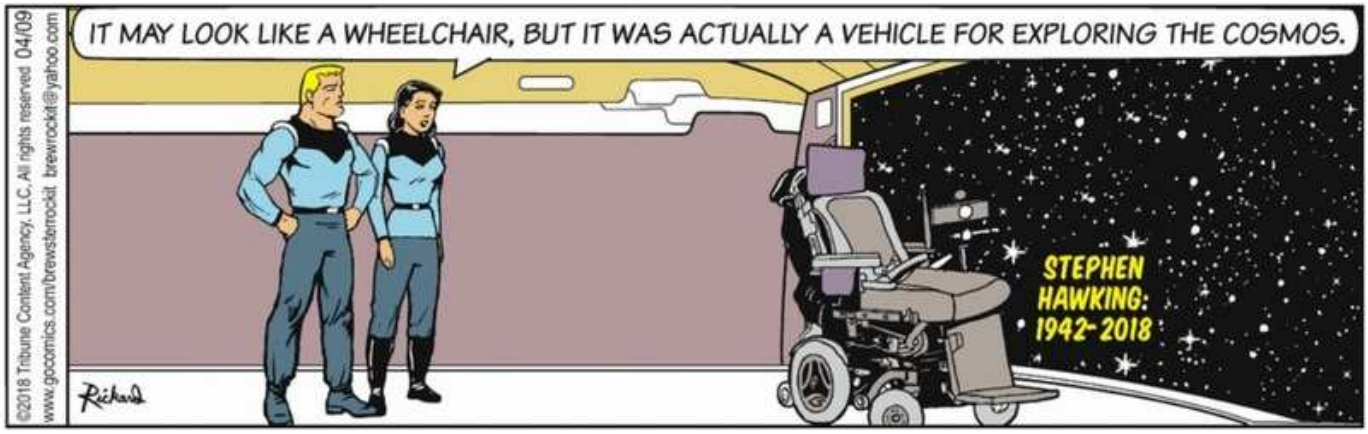
In lieu of flowers, memorial contributions may be made in Mary's name to the Sisters of Charity of Nazareth, P. O. Box 9, Nazareth, Ky. 40048.

Arrangements are by the North Chapel of Chattanooga Funeral Home, Crematory and Florist, 5401 Highway 153, Hixson, Tn. 37343.
Please share your thoughts and memories at www.chattanooganorthchapel.com.

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

BREWSTER ROCKET GETS IT RIGHT

From: "Chris Cowan" cowanc1028@earthlink.net



http://www.gocomics.com/brewsterrockit/2018/04/09

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

Re: The April 4th, 2018 Edition of THE REVENGE HUMP DAY!

From: "David Watson" thewatson@hotmail.com

Hi Uncle Timmy,

Always great to get one of your "Awful" rags. The liberals took any potential "fear of God" out of the schools when they removed prayer in schools and now are surprised when kids kill other kids with no fear of any consequences that go beyond death by cop. Kids who watch murders on TV shows every night. So one 19 year old with a gun is enough reason to remove the right to bear arms from 323,000,000 Americans? Seattle apparently is now forcibly removing guns from people who are "red" flagged. They have to go to court to get

them back and they have to prove they are not a danger. One stop short of "if you own a gun you are assumed to be a danger."

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

Re: Happy Resurrection Day

From: "Anita S. Moore" foofighterubu@gmail.com

Dear Uncle,

Foofighterubu Wargame Terrain Studio occasionally my grandfather would tell a story about how he gave someone advice or answer the question or said again and again something was going to go wrong or something was going to happen if things continued on their current trajectory. And he went off and say but they " but that just didn't listen. I must have a dishonest face."

Of course he did not have a dishonest face. And neither do you but I invite you to adopt my grandfather's words and have some fun.

Happy Resurrection Day Uncle Timmy

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

From: "Jerry Tollett" haleja@epbfi.com

A LITTLE ENGLISH HISTORY LESSON

There is an old Hotel/Pub in Marble Arch, London, which used to have a gallows adjacent to it. Prisoners were taken to the gallows (after a fair trial of course!) to be hanged.

The horse-drawn dray, carting the prisoner, was accompanied by an armed guard, who would stop the dray outside the pub and ask the prisoner if he would like "ONE LAST DRINK".

If he said YES, it was referred to as "ONE FOR THE ROAD".

If he declined, that Prisoner was "ON THE WAGON". So there you go...

****

They used to use urine to tan animal skins, so families used to all pee in a pot and then once a day it was taken and sold to the tannery.

If you had to do this to survive you were "piss poor".

But worse than that were the really poor folk, who couldn't even afford to buy a pot, they "Didn't have a pot to piss in" and were the lowest of the low.

****

The next time you are washing your hands and complain because the water temperature isn't just how you like it, think about how things used to be. Here are some facts about England in the 1500s:

Most people got married in June, because they took their yearly bath in May and they still smelled pretty good by June!

However, since they were starting to smell, brides carried a bouquet of flowers to hide the body odour.

Hence the custom today of carrying a bouquet when getting married.

****

Baths consisted of a big tub filled with hot water.

The man of the house had the privilege of the nice clean water, then all the other sons and men, then the women and finally the children. Last of all the babies.

By then the water was so dirty you could actually lose someone in it! Hence the saying, "Don't throw the baby out with the bath water!"

****

Houses had thatched roofs, thick straw piled high, with no wood underneath. It was the only place for animals to get warm, so all the cats and other small animals (mice, bugs) lived in the roof. When it rained it became slippery and sometimes the animals would slip and fall off the roof.

Hence the saying "It's raining cats and dogs."

****

There was nothing to stop things from falling into the house. This posed a real problem in the bedroom, where bugs and other droppings could mess up your nice clean bed. Hence, a bed with big posts and a sheet hung over the top afforded some protection.

That's how canopy beds came into existence.

****

The floor was dirt. Only the wealthy had something other than dirt. Hence the saying, "dirt poor."

The wealthy had slate floors that would get slippery in the winter when wet, so they spread thresh (straw) on floor to help keep their footing.

As the winter wore on they added more thresh until, when you opened the door, it would all start slipping outside. A piece of wood was placed in the entrance.

Hence: a thresh hold. (Getting quite an education, aren't you?)

****

Sometimes they could obtain pork, which made them feel quite special. When visitors came over they would hang up their bacon, to show off.

It was a sign of wealth that a man could, "Bring home the bacon."

They would cut off a little to share with guests and would all sit around talking and "chew the fat".

****

Those with money had plates made of pewter.

Food with high acid content caused some of the lead to leach onto the food, causing lead poisoning and death.

This happened most often with tomatoes. So for the next 400 years or so, tomatoes were considered poisonous.

****

Bread was divided according to status.

Workers got the burnt bottom of the loaf, the family got the middle, and guests got the top, or "The Upper Crust".

****

Lead cups were used to drink ale or whisky. The combination would sometimes knock the imbibers out for a couple of days.

Someone walking along the road would take them for dead and prepare them for burial. They were laid out on the kitchen table for a couple of days and the family would gather around and eat and drink and wait and see if they would wake up.

Hence the custom of "Holding a Wake".

****

England is old and small and the local folks started running out of places to bury people, so they would dig up coffins and would take the bones to a bone-house and reuse the grave.

When reopening these coffins, 1 out of 25 coffins were found to have scratch marks on the inside and they realised they had been burying people alive.

So they would tie a string on the wrist of the corpse, thread it through the coffin and up through the ground and tie it to a bell. Someone would have to sit out in the graveyard all

night (the graveyard shift) to listen for the bell; thus someone could be, "Saved by the Bell" or was considered a "Dead Ringer". And that's the truth!

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

From: "Mike Waldrip" waldripk@gmail.com

AN OLDIE BUT A GOODIE

SPAGHETTI

For several years, a man was having an affair with an Italian woman.

One night, she confided in him that she was pregnant.

Not wanting to ruin his reputation or his marriage, he said he would pay her a large sum of money if she would go to Italy to secretly have the child. Furthermore, if she stayed in Italy to raise the child, he would also provide child support until the child turned 18.

She agreed, but asked how he would know when the baby was born.

To keep it discreet, he told her to simply mail him a post card, and write 'Spaghetti' on the back. He would then arrange for the child support payments to begin.

One day, about 9 months later, he came home to his confused wife.

'Honey, she said, 'you received a very strange post card today.'

'Oh, just give it to me and I'll explain it later,' he said.

The wife obeyed and watched as her husband read the card, turned white, and fainted.

On the card was written:

Spaghetti, Spaghetti, Spaghetti, Spaghetti, Spaghetti.

Three with meatballs, two without.

Send extra sauce

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

PADDY

Paddy had been drinking at his local pub all day and most of the night, celebrating St Patrick's Day.

Mick, the bartender says, 'You'll not be drinking anymore tonight, Paddy'.

Paddy replies, 'OK Mick, I'll be on my way then'. Paddy spins around on his stool and steps off. He falls flat on his face.

'Damn' he says and pulls himself up by the stool and dusts himself off. He takes a step towards the door and falls flat on his face, 'oh bloody damn!'

He looks to the doorway and thinks to himself that if he can just get to the door and some fresh air he'll be fine.

He belly crawls to the door and shimmies up to the door frame. He sticks his head outside and takes a deep breath of fresh air, feels much better and takes a step out onto the sidewalk and falls flat on his face.

'Be-Jesus… I'm in bloody trouble,' he says.

He can see his house just a few doors down, and crawls to the door, hauls himself up the door frame, opens the door and shimmies inside.

He takes a look up the stairs and says 'No bloody way....'

He crawls up the stairs to his bedroom door and says 'I can make it to the bed'. He takes a step into the room and falls flat on his face. He says 'damn it' and falls into bed.

The next morning, his wife, Jess, comes into the room carrying a cup of coffee and says, 'Get up Paddy. Did you have a bit to drink last night ?'

Paddy says, 'I did, Jess. I was bloody pissed. But how did you know?'

'Mick phoned .. . . You left your wheelchair at the pub.'

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

THE KISS

A married couple was in a terrible accident where the woman's face was severely burned. The doctor told the husband that they couldn't graft any skin from her body because she was too skinny. So, the husband offered to donate some of his own skin.

However, the only skin on his body that the doctor felt was suitable would have to come from his buttocks.

The husband and wife agreed that they would tell no one about where the skin came from, and requested that the doctor also honor their secret. After all, this was a very delicate matter.

After the surgery was completed, everyone was astounded at the woman's new beauty. She looked more beautiful than she ever had before! All her friends and relatives just went on and on about her youthful beauty!

One day, she was alone with her husband, and she was overcome with emotion at his sacrifice. She said, "Dear, I just want to thank you for everything you did for me. How can I possibly repay you?"

"My darling" he replied, "I get all the thanks I need every time I see your mother kiss you on the cheek!"

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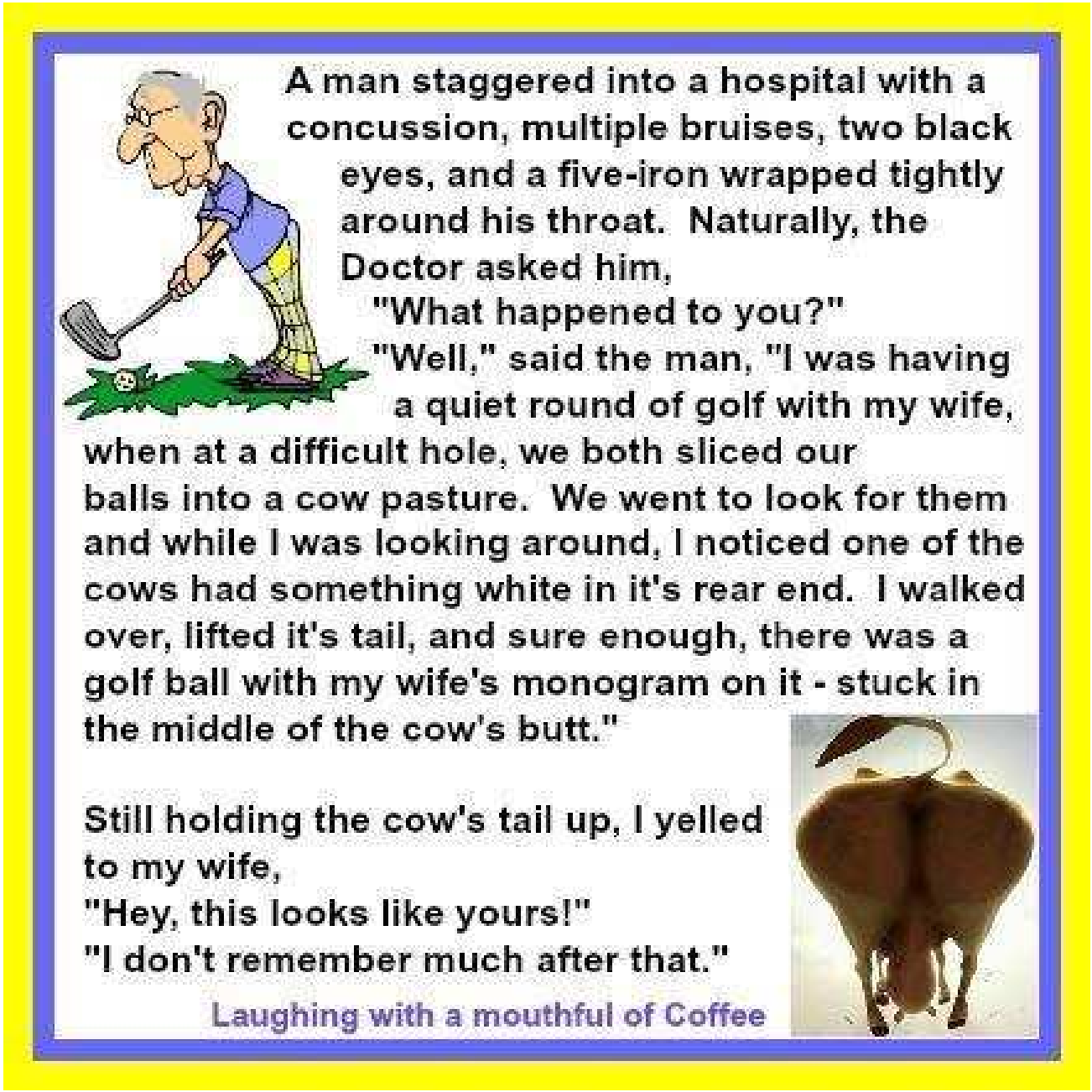
LOST GOLF BALL



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From: "Ray Beloate" beerman@rittermail.com

LEXOPHILIA

“Lexophile" describes those that have a love for words, such as —

“You can tune a piano, but you can't tuna fish”

“To write with a broken pencil is pointless.”

An annual competition is held by the New York Times to see who can create the best original lexophile. This year's winning submission is posted at the very end.

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

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

Did you hear about the crossed-eyed teacher who lost her job because she couldn't control her pupils?

When you get a bladder infection, urine trouble.

When chemists die, they barium.

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

I changed my iPod's name to Titanic. It's syncing now.

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

Haunted French pancakes give me the crepes.

This girl today said she recognized me from the Vegetarians Club, but I'd swear I've never met herbivore.

I know a guy who's addicted to drinking brake fluid, but he says he can stop any time.

A thief who stole a calendar got twelve months.

When the smog lifts in Los Angeles U.C.L.A.

I got some batteries that were given out free of charge.

A dentist and a manicurist married. They fought tooth and nail.

A will is a dead giveaway.

With her marriage, she got a new name and a dress.

Police were summoned to a daycare center where a three-year-old was resisting a rest.

Did you hear about the fellow whose entire left side was cut off? He's all right now.

A bicycle can't stand alone; it's just two tired.

The guy who fell onto an upholstery machine last week is now fully recovered.

He had a photographic memory but it was never fully developed.

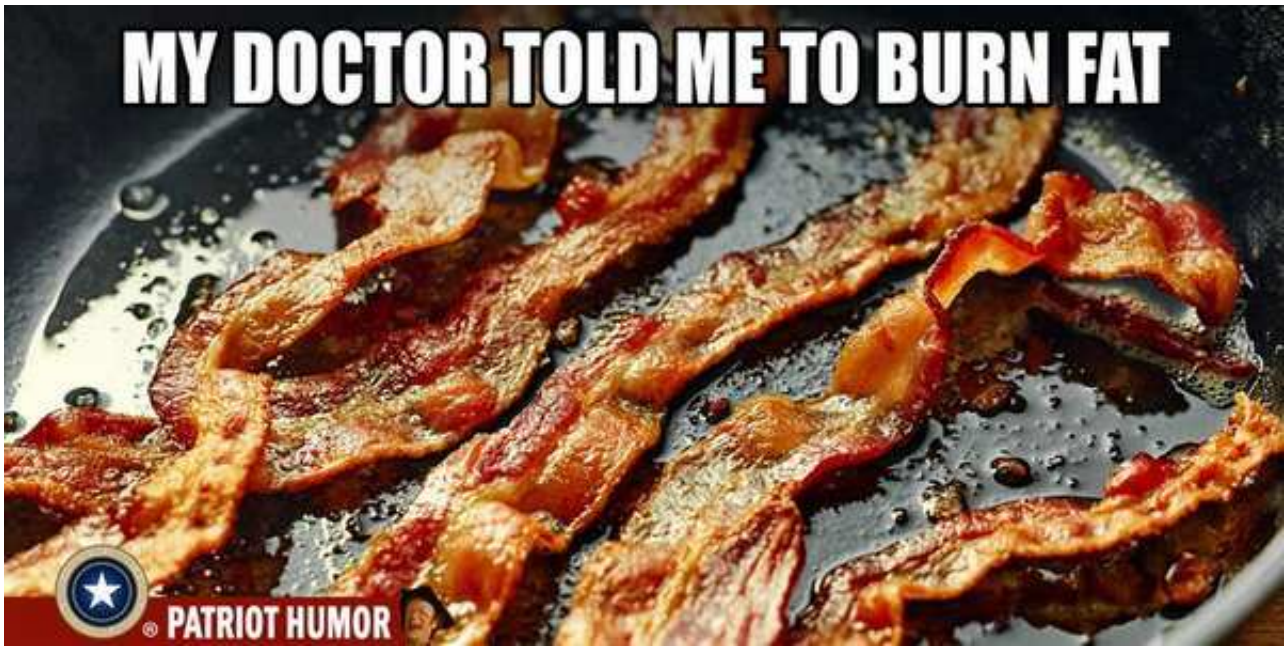
When she saw her first strands of gray hair she thought she'd dye.

Acupuncture is a jab well done. That's the point of it.

Those who get too big for their pants will be totally exposed in the end.

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

From: "Jim Woosley" jimwoosley@aol.com



https://patriotpost.us/humor/55229

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

https://patriotpost.us/humor/55229

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

YOU JUST CAN'T MAKE THIS STUFF UP!

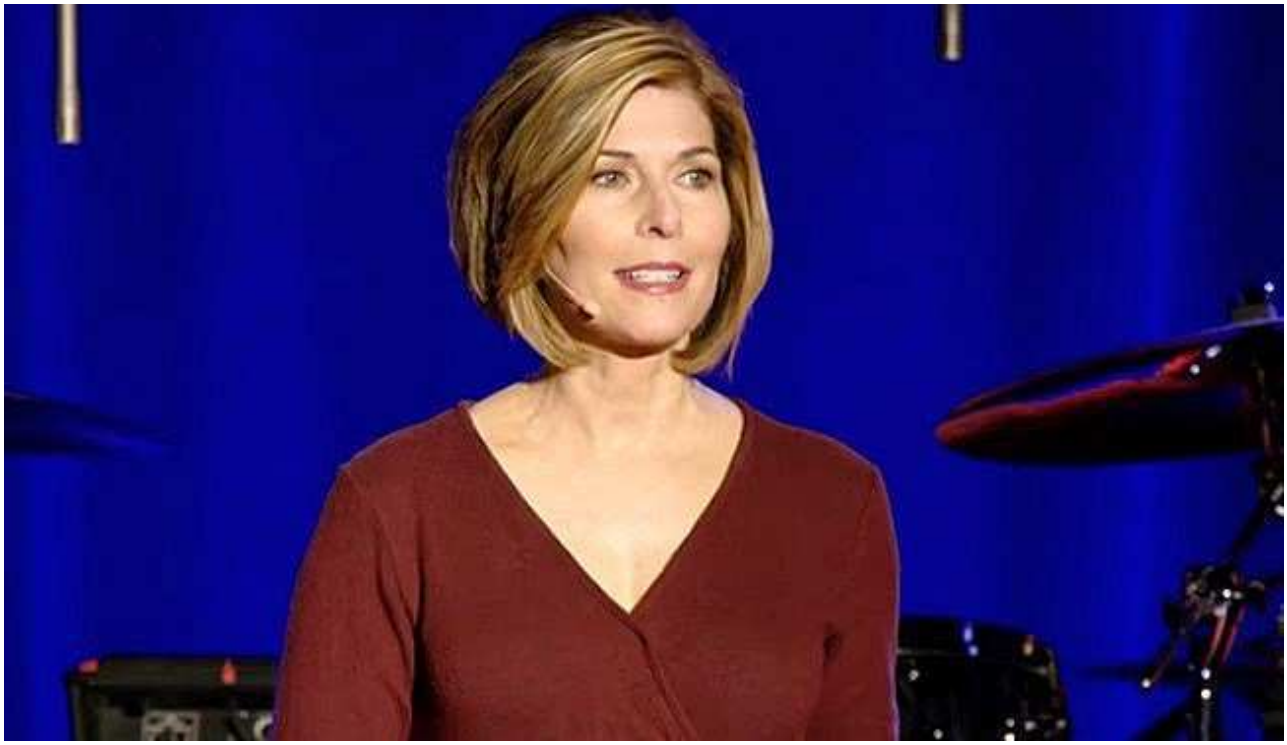
From: "Tim Bolgeo" tbolgeo@epbfi.com

Sharyl Attkisson: A Trump/Mueller meeting should be under same terms DOJ gave Hillary, rolls out perfect plan…

April 5, 2018 | Samantha Chang
https://www.bizpacreview.com/2018/04/05/sharyl-attkisson-if-trump-meets-mueller-should-get-same-terms-doj-gave-hillary-lays-out-perfect-plan-620555?utm_source=Newsletter&utm_medium=BPR%20Email&utm_campaign=DMS

Sharyl Attkisson, an Emmy Award-winning investigative journalist, is among the legions of Trump supporters who believe it would be foolish for the president to agree to an interview with special counsel Robert Mueller because it's nothing more than a contrived perjury trap.

Attkisson said if President Trump does talk to Mueller, he should be given the same sweetheart deal Hillary Clinton got when she was being "investigated" over her unsecured, private email server.



Attkisson, a former CBS News reporter, laid out the perfect plan in a series of tweets. She wrote: "Re: Trump interview w/special counsel, perhaps all can agree it should be under same terms the Justice Dept gave Hillary Clinton," including that an exoneration letter be drafted before the interview is even conducted (which is what former FBI director James Comey did).

Moreover, immunity from prosecution should be granted to all top Trump campaign aides in the same blanket fashion they were doled out to Hillary's top aides. Here is Attkisson's full 10-point plan:

*** An exoneration letter is drafted in advance.**

*** Immunity is given to top Trump aides (and they're allowed to sit in on interview)**

*** Interview isn't recorded.**

*** Lead official (Mueller) doesn't attend.**

*** #2 official's family [on Mueller team] has received large donations from Trump political friends.**

*** Prior to the interview, lead official meets privately on plane tarmac with Trump's wife (to discuss grandchildren).**

*** Main interviewer has expressed disdain for Trump's opponents, such as discussing an "insurance plan" with higher-ups to undermine them. If the same terms aren't offered…Was Clinton's interview process unfair? Or is the one proposed for Trump unfair?**
*** As long as they believe Trump didn't intend any harm, he's let off the hook for any violations.**

*** If Trump becomes a target, it should be referred to as a "matter" not an investigation.**

*** Trump aides should be permitted to destroy subpoenaed or relevant public records and wipe relevant servers with a cloth or something.**

While Sharyl Attkisson was semi-joking, seeing the stunning allowances granted to Hillary's team during her FBI "investigation" spotlights just how corrupt the process was, and how it was rigged from the beginning to ensure her exoneration.

In September 2017, Attkisson said she was not surprised by reports that the Obama administration had spied on Donald Trump when he was a private citizen. Because that's exactly what Obama did to her.

Attkisson said her computer and laptop were hacked after she did stories criticizing then-president Barack Obama. In 2015, Attkisson filed a federal lawsuit against the Obama Justice Department (and then-Attorney General Eric Holder) for breaking into her personal computer. That lawsuit continues to this day.

While the mainstream media have been grousing about President Trump being "mean" to them, Attkisson said the Obama administration systematically weaponized federal intelligence agencies to spy on, intimidate, and silence reporters and political opponents.

The mainstream media derisively laughed at President Trump when he tweeted that Obama had wiretapped him during the 2016 presidential campaign when he was a private citizen.

But new evidence now suggests Trump was right all along. Not only did Obama and his administration deny those allegations, but the media blithely went along and covered for him.

The mainstream media, the Democrat Party, and some members of the GOP have rabidly insisted that Trump campaign aides colluded with Russia in 2016. It is now 2018, and special counsel Robert Mueller has still produced no evidence of collusion after an expensive, year-long, taxpayer-funded investigation.

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

APPALACHIANS ARE SLOW TO ADOPT NEW TECHNOLOGY FOR A SURPRISING (AND REFRESHING) REASON

We have a lot to learn from folks who resist the latest gadgets.

Sherry Hamby/The Conversation April 5, 2018
https://www.popsci.com/resisting-technology-appalachia?CMPID=ene040718

Not everyone wants to be an early adopter. DepositPhotos

When people hear "Appalachia," stereotypes and even slurs often immediately jump to mind, words like "backwards," "ignorant," "hillbilly" or "yokel." But Appalachian attitudes about technology's role in daily life are extremely sophisticated—and turn out to be both insightful and useful in a technology-centric society.

Many Americans tend to view Appalachian life as involving deprivation and deficit. This can be particularly pointed regarding technology: Rural residents are frequently neglected in research on technology use, and where they are included, the data usually focus on the lower rates of ownership and use of smartphones and laptop computers in rural areas. Articles can come across as scholars and reporters saying something like, "Poor rural Appalachians—they don't even own the newest iPhone!"

It's true that many rural areas aren't served with the fastest broadband and the most robust cellular coverage in the U.S. But in the wake of the Cambridge Analytica scandal in which the data from an estimated 50 million Facebook users were used to craft and inform online political advertising, it's worth considering whether people in Appalachia are deprived of the benefits of technology—or if they're protecting themselves from harmful effects of its misuse.

SKEPTICISM AND CAUTION

In a recent study, my colleagues and I used focus groups and interviews to explore how people use technology in rural Appalachia. These open-ended methods allow participants to discuss their experiences and opinions in their own terms. For instance, most technology surveys don't ask people why they don't own the latest phone or computer – they just assume people would if they could.

Those studies miss key insights our research was able to identify and explore. When we gave people a chance to tell their own stories about technology, we most often heard about two themes.
The first, which we called "resistance," appeared in people's doubts about the concept that more technology is always better. They also carefully considered whether the potential usefulness of new technologies was worth the privacy sacrifices inherently required to use them.

People also described their intentional choices about how much technology to use and for what purposes—as well as intentional choices not to use technology in some situations. We called this theme "navigation."

USING HUMOR TO EXPRESS CONCERNS

In addition, our research identified ways that common Appalachian values of self-deprecating humor, privacy, and self-reliance are involved in how people in that region view and use technology.

Humor, for instance, can be a useful tool to resist unwelcome intrusions of technology. The best Appalachian humor involves intelligently poking fun at the joke-teller, which is not always well understood by outsiders influenced by demeaning stereotypes.

A woman in one of our groups told the story of being offered what was billed as an "upgrade" from a basic cellphone to a smartphone; her reply was, "No, I don't want anything smarter than I am."
That response is properly understood as resistance through humor. As she stated, "I have all that I need." Many participants in our study expressed doubt that it really could be a lifestyle "upgrade" to have a phone "listening" to her conversations or to have multiple companies tracking her location with their apps every minute of every day.

Another woman expressed dismay about another form of corporate monitoring, describing "when you're shopping for a cutting board on Amazon … and then when I sign on Facebook, every single ad on the sidebar is for a cutting board. … That freaks me out a lot more than other things."
In a related vein, an adolescent girl expressed dismay about people who excessively document their lives: "I don't want people messaging me every five minutes. Like, 'Oh, look at my new selfie!' You sent me a selfie 10 seconds ago. I don't need another selfie of you. I see you enough at school."

Some people, of course, might find benefits in those technologies. But it's unfair to brand Appalachian skepticism as ignorance—particularly when it questions the corporations who are selling full-time surveillance of the general population for a considerable profit.

RESISTANCE IS NOT IGNORANCE

Instead, it would be better to think of this resistance as an integral part of Appalachian culture. One man who was himself a pretty active user of technology noted that not everyone in his community is like him, saying, "Now, there are a lot of people that are my age that have not gone into the digital age … and I respect that, because they don't want their privacy issues dealt with like that."
People from New York or Chicago who use technology every day may never have stopped to form an opinion about people who choose to minimize their involvement with modern technology. They may not even know anyone like that. Or they may fall prey to the mainstream narrative that it's acceptable to gently mock grandparents and others who do not use email or smartphones. This man expresses understanding and esteem for technology resistance by his neighbors, even as he acknowledges that he is not a resister.

BEING MINDFUL OF TECHNOLOGY CHOICES

The participants who used smartphones, tablets, or computers reported more than 50 safety strategies they use to stay safe online, such as refusing suspicious contacts, restricting the information that they posted online, or avoiding public Wi-Fi. Far from being passive or ignorant, they made a lot of intentional choices about how to handle technology when they do choose to use it.

Not all of this is Appalachian-specific; I'm not sure there is a culturally specific way to delete browser cookies.

But some of their responses did show evidence of Appalachian attributes, like self-reliance. The most extreme story we heard was probably also the most illuminating. A man reported posing as an FBI agent in order to intimidate online con artists who were trying to scam him. In the focus group, no one mentioned that it was illegal to pose as an FBI agent. Nobody even expressed concern about the man's safety while he was harassing criminals. In fact, another man said he had done something similar, and a woman asked for more information about how to track the location of con artists!

There are lessons for everyone in these stories of Appalachian resistance and navigation to modern technology: Be a little more skeptical about whether these giant corporations really have your best interests at heart, and whether your life is really better as a result of all that time you spend on your smartphone. Demand more transparent privacy settings and tell your politicians that you want to be able to opt out of this kind of data sharing. Turn your phone off every once in a while. Maybe venture outside your home without a phone.

The next time an app wants to track your location full-time or a Facebook quiz asks for permission to access the personal information of you and all your Facebook friends, try to get in touch with your inner Appalachian.

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

YOU JUST CAN'T MAKE THIS STUFF UP!

From: "Jim Woosley" jimwoosley@aol.com

BLACK GUN OWNER SLAMS GOV'T: WHY DO YOU WANT TO TAKE AWAY MY RIGHTS?

April 5th, 2018
http://amp.dailycaller.com/2018/04/05/north-carolina-black-gun-owner-gun-rights/?__twitter_impression=true

A black gun owner slammed those who would want to restrict guns from law-abiding citizens during a Tuesday city council meeting on how to combat gun violence. (Greensboro resident/ YouTube Screenshot)

A black gun owner slammed those who would want to restrict guns from law-abiding citizens during a Tuesday city council meeting on how to combat gun violence.
"You want to restrict my right to buy a firearm and protect myself from some of the very people you are talking about in here tonight," Mark Robinson, a Greensboro, N.C., resident said. "The law-abiding citizens of this community, of other communities we are the first ones taxed and the last ones considered."

Robinson spoke out a city council meeting held to address how the community should handle gun violence and whether it should cancel an upcoming "Gun and Knife Show." The Greensboro gun owner argued it was far past time for the government to listen to the "majority" in America: law-abiding citizens who might want to buy guns.

"I'm the majority. I'm a law-abiding citizen who has never shot anybody," Robinson said. "Never committed a serious crime. Never committed a felony. I've never done anything like that. It seems like every time we have one of these shootings, nobody wants to put the blame where it goes, which is at the shooter's feet. You want to put it at my feet. You want to turn around and restrict my rights."

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

From: "Tim Bolgeo" tbolgeo@epbfi.com

NASA HIRES LOCKHEED MARTIN TO BUILD QUIET SUPERSONIC X-PLANE

By Hanneke Weitering, Space.com Staff Writer | April 3, 2018 02:05pm ET

https://www.space.com/40187-lockheed-martin-building-quiet-supersonic-jet.html?utm_source=sdc-newsletter&utm_medium=email&utm_campaign=20180404-sdc

Illustration of NASA's Low-Boom Flight Demonstration aircraft as outlined during the project's preliminary design review in 2017. NASA has selected Lockheed Martin to build the new supersonic jet. Credit: NASA/Lockheed Martin

NASA has taken a huge leap forward in its quest to create an aircraft that can travel faster than the speed of sound without causing the ear-splitting sonic boom.

The space agency announced today (April 2) that it has awarded the aerospace company Lockheed Martin a $247.5 million contract to design and build a new X-plane, known as the Low-Boom Flight Demonstrator (LBFD), which may soar silently over the U.S. by 2022.

Today's announcement comes less than two weeks after President Donald Trump signed a federal budget for FY2019 that fully funds the LBFD. In his budget proposal, Trump noted that the X-plane "would open a new market for U.S. companies to build faster commercial airliners, creating jobs and cutting cross-country flight times in half."

But don't expect to board a supersonic passenger jet anytime soon; Lockheed Martin's LBFD won't be built for transporting people. Before any supersonic planes will be allowed to fly over land, NASA and Lockheed Martin must prove that it's possible to break the sound barrier without the sonic boom.

"This piloted X-plane would be built specifically to fly technologies that reduce the loudness of a sonic boom to that of a gentle thump," Jaiwon Shin, associate administrator of NASA's Aeronautics Research Mission Directorate, said during a news conference today.

Shin added that the LBFD will fly over select U.S. cities starting in mid-2022 and NASA will "ask the people living and working in those communities to tell us what they heard, if anything."
NASA will then send the "scientifically collected human response" data to the U.S. Federal Aviation Administration (FAA) and the International Civil Aviation Organization (ICAO) "so they can use the data to change the current rule that completely bans civil supersonic flights over land," Shin said.

"When the rule is changed, the door will open to an aviation industry ready to enter [a] new supersonic market in our country and around the world," Shin said. "This X-plane is a critical step closer to that exciting future."

The LBFD aircraft will be 94 feet (29 meters) long, or about the size of a small business jet. It will fly at a cruising altitude of about 55,000 feet (17,000 meters) and reach a speed of 1.4 times the speed of sound (about 1,000 mph, or 1,600 km/h). This will "create a sound about as loud as a car door closing," NASA officials said in the news conference.

While NASA is working to reduce the sonic boom, other companies are working on their own supersonic aircraft designs — all of which will still create sonic booms during flight.

Virgin Galactic has partnered up with Boom Technology to build a supersonic passenger jet called "Baby Boom" that could fly across the Atlantic Ocean at twice the speed of sound, cutting flight times in half. Those test flights are scheduled to begin in 2020. Another company, Spike Aerospace, aims to test its S-512 Supersonic Jet by the end of 2018.

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NASA SCIENCE CAST: THE SWEET SMELL OF LIFE SUPPORT (IN THE ISS)

Podcast Length: 3:24

The International Space Station is a testbed for technologies that will allow astronauts to live comfortably during long journeys into the solar system.

https://science.nasa.gov/science-news/sciencecasts/the-sweet-smell-of-life-support

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HOW DO FORENSIC ENGINEERS INVESTIGATE BRIDGE COLLAPSES, LIKE THE ONE IN MIAMI?

Investigators will study video, design plans and the "accelerated bridge construction" method for clues

By Martin Gordon, The Conversation US on March 25, 2018
https://www.scientificamerican.com/article/how-do-forensic-engineers-investigate-bridge-collapses-like-the-one-in-

miami/?utm_source=newsletter&utm_medium=email&utm_campaign=tech&utm_content=link&utm_term=2018-04-03_more-stories

Credit: Joe Raedle Getty Images

The following essay is reprinted with permission from The Conversation, an online publication covering the latest research.

On March 15, a 950-ton partially assembled pedestrian bridge at Florida International University in Miami suddenly collapsed onto the busy highway below, killing six people and seriously injuring nine. Forensic engineers are taking center stage in the ongoing investigation to find out what happened and why – and, crucially, to learn how to prevent similar tragedies in the future.

I'm not actively involved in this investigation, but I've been a forensic engineer for nearly 20 years and am the 2018 president of the National Academy of Forensic Engineers. Similar to forensic scientists, we visit scenes of disasters and crimes to determine what role engineering practices played in what happened. The first step in any forensic investigation, collecting evidence, often can't begin until survivors are rescued and victims are recovered. Those operations displace material and can damage evidence, which means forensic engineers must study the emergency response as well, to be able to tell whether, for instance, a support column collapsed during the event or was destroyed to reach a victim in need of help. During the FIU recovery efforts rescuers used large equipment to break up massive blocks of concrete so that victims' bodies could be recovered.

In Miami at the moment, forensic engineers and technicians from the National Transportation Safety Board are on the scene. Right now they're collecting samples of materials from the bridge to test for their physical properties. They're reviewing drawings and plans, and examining both industry standards and site engineers' calculations to understand what was supposed to be built – to compare with what was actually constructed. They'll look at photographs and videos of the collapse to identify the sequence of events and locations of key problems. Of course, they'll also talk to witnesses to find out what workers and passersby saw and heard around the time of its collapse.

Then they'll combine and analyze all that data and information to identify as clearly as possible what went wrong, in what order. Often there are many factors, each leading to or amplifying the next, that ultimately caused the disaster. Putting that puzzle together is a key part of the forensic engineer's role.

WEAKNESS IN PARTIAL STRUCTURE

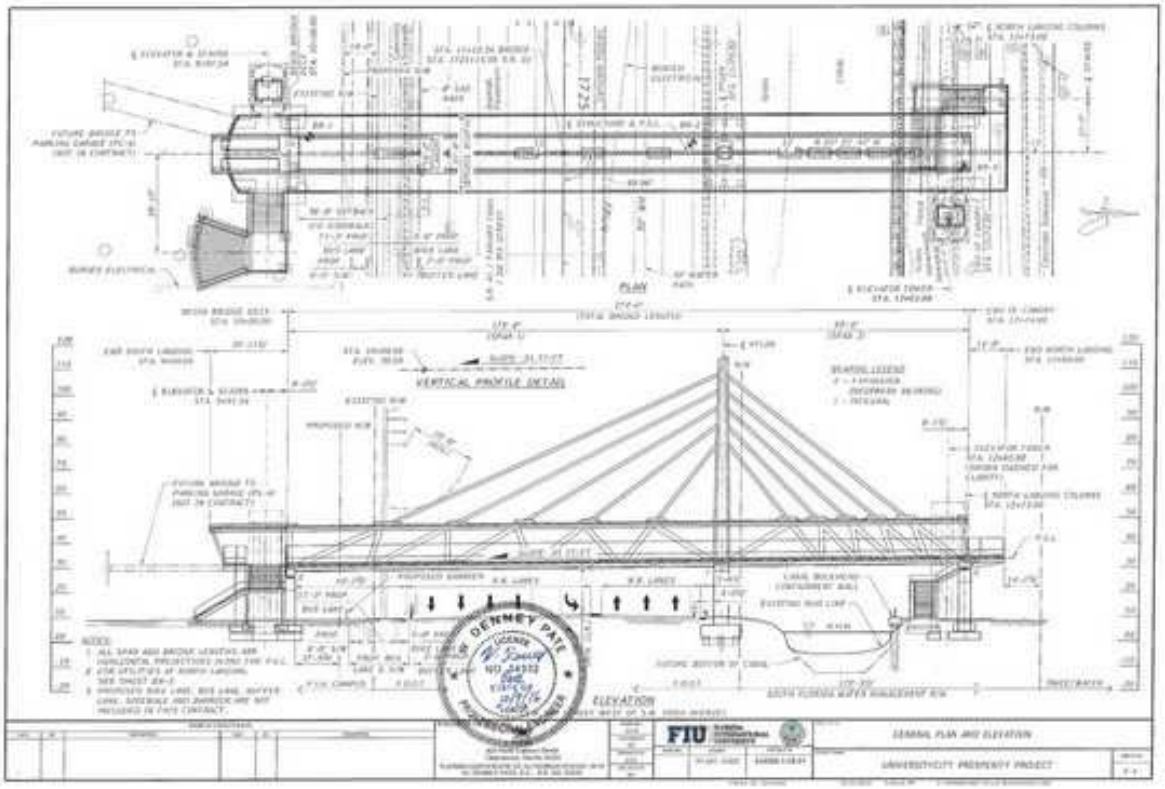
The FIU bridge was being built using a method called "accelerated bridge construction," with separate sections that needed to be put together: The footings were installed beside the road and the span was built nearby and lifted into place just days before the collapse. In a plan like that, each piece must be able to withstand the forces acting on it as they're all being put together. A weakness in one place can cause problems elsewhere, ultimately leading to catastrophe.

Two key elements of the bridge design, the tall center pylon and pipe supports, were not yet in place when the structure collapsed. They hadn't been scheduled to be added until later in the process – and the bridge wasn't slated to open until next year, so it's likely that the project's designers and engineers expected the bridge segment to hold while construction continued.

Part of a forensic engineering evaluation will investigate whether that was a reasonable expectation, and whether those missing elements reduced the strength of what was there enough for it to collapse.
SEARCHING FOR CLUES

There are some other publicly available clues, too, that shed light on avenues likely under investigation already. Dashcam video of the bridge collapse seems to indicate that the initial failure was very close to the north end of the structure. It has been reported that a couple of days before the collapse, a crack had been discovered near the bridge's north end. Additionally, the bridge span might have been either undergoing stress testing or other adjustments when it collapsed. It's too early to say now – but the inquiry will certainly reveal – whether the crack and the stress testing put too much load at the north end of the bridge.

There will be other questions too, like "Why didn't they use temporary supports to shore up the bridge?" There may be a perfectly sensible explanation: Perhaps the bridge was supposed to be strong enough to support itself, for example. Or maybe temporary supports would have created a traffic hazard on the road below.



NTSB_Newsroom?@NTSB_Newsroom
2 of 3: NTSB investigators continue to request, and gather, documents about the design, construction and inspection of the FIU pedestrian bridge.
5:56 PM - Mar 17, 2018

Some of those questions will not be entirely engineering-related. For example, many are asking "Why wasn't the road closed?" The Tamiami Trail was shut down for a few hours while the bridge span was put in place. But then it was reopened to cars – a decision that would have been informed by engineering, of course, but could also have been influenced by concerns about public safety or traffic congestion.

At the moment, many of the questions the public has are also being investigated by forensic engineers. Their goal is to ensure that eventually those questions are all answered, and many more as well, about designs, materials, processes, procedures and safety precautions. Those lessons will inform not just any replacement for this particular bridge in Miami but future bridge construction projects elsewhere in the country and around the world, as the rest of the engineering community takes lessons from whatever the investigation uncovers, so builders can avoid similar mistakes – and tragedies. In a sense, it is fortunate that one of the leading centers for accelerated bridge construction is right on the FIU campus.

This article was originally published on The Conversation.

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BLUE ORIGIN SWITCHES ENGINES FOR NEW GLENN SECOND STAGE

By Caleb Henry, SpaceNews | April 4, 2018 10:35am ET
https://www.space.com/40145-blue-origin-switches-new-glenn-engines.html

Blue Origin's BE-3 throttles during acceptance testing. Credit: Blue Origin

WASHINGTON — Blue Origin quietly changed the design of its New Glenn rocket around the beginning of the year in order to hold to a 2020 first launch and increase the range of orbital missions the rocket can complete.

Although the company's website still shows New Glenn with a second stage powered by a reignitable version of the BE-4 it is developing to power the main stage of both New Glenn and United Launch Alliance's Vulcan rocket, that configuration is now out of date.

A Blue Origin executive told SpaceNews the company is shelving development of a vacuum-optimized version of BE-4 and will instead use vacuum-optimized versions of flight-proven BE-3 engines for New Glenn's second stage and optional third stage. [Blue Origin's Giant New Glenn Rocket in Pictures]

"We've already flown BE-3s, and we were already in the development program for BE-3U as the third stage for New Glenn," said Clay Mowry, Blue Origin's vice president of sales, marketing and customer experience. "It made a lot of sense for us to switch to an architecture where we get there faster for first flight."

The BE-3U is the upper stage variant of the liquid hydrogen-fueled BE-3 engine that has powered Blue Origin's reusable New Shepard spacecraft on seven suborbital test flights since its 2015 debut.

Mowry said switching to the BE-3U for New Glenn's second stage will allow Blue Origin to conduct the rocket's first launch in the fourth quarter of 2020. He declined to say how much time the engine change saves compared to the original configuration.

Blue Origin is developing two versions of New Glenn: a two-stage version designed to launch a wide range of satellites and a three-stage version for more demanding launches such as deep space missions.

Before making the change, Blue Origin intended to power the second stage of both versions with a single BE-4U engine. Now the company plans to forgo BE-4U development and rely instead on a pair of BE-3U engines to power the New Glenn second stage.

A group of BE-4 engines being assembled at Blue Origin's Kent, Washington, facility. Credit: Blue Origin

The design change, which Mowry said was made a few months ago, means Blue Origin only needs two types of engines for New Glenn instead of three.

Mowry said New Glenn will need a longer second stage to accommodate the dual engine configuration.

Blue Origin declined to give the expected lift capability of the revised New Glenn configurations. Mowry said the liquid hydrogen-fueled BE-3 has a higher specific impulse, making it more efficient than the BE-4, which runs on methane and liquid oxygen. The BE-3 can produce 110,000 pounds of thrust at sea level, compared to the BE-4's 550,000 pounds of thrust.

Blue Origin is already gaining early success in the commercial satellite launch sector, having secured eight missions with satellite operators around the world. But another

motivation for tweaking New Glenn's design is to reach tricky orbits for national security customers.

Blue Origin is lining up New Glenn to compete with United Launch Alliance and SpaceX in launching U.S. military satellites by giving the rocket enough muscle to reach every orbit specified in the Launch Service Agreement (LSA) solicitation the U.S. Air Force issued last fall. The solicitation — which has also drawn interest from Orbital ATK and Aerojet Rocketdyne — specifies nine wide-ranging "reference orbits" the proposed launchers must be able to reach in order to qualify for Air Force funding.

The Air Force plans to help fund development of at least three launch system prototypes. Awards are expected in July.

"If you look at LSA and all those mission profiles, we can serve all of those with a single version of New Glenn with this two-stage architecture," Mowry said.

Blue Origin's pursuit of defense business positions the company as a future competitor to ULA, who Blue Origin would also like to supply with BE-4 engines to for its next-generation Vulcan launch vehicle. ULA is still deciding between Blue Origin's BE-4 and Aerojet Rocketdyne's AR1 for Vulcan's first stage.

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'LUXURY SPACE HOTEL' TO LAUNCH IN 2021

By Mike Wall, Space.com Senior Writer | April 5, 2018 01:01pm ET
https://www.space.com/40207-space-hotel-launch-2021-aurora-station.html?utm_source=sdc-newsletter&utm_medium=email&utm_campaign=20180407-sdc

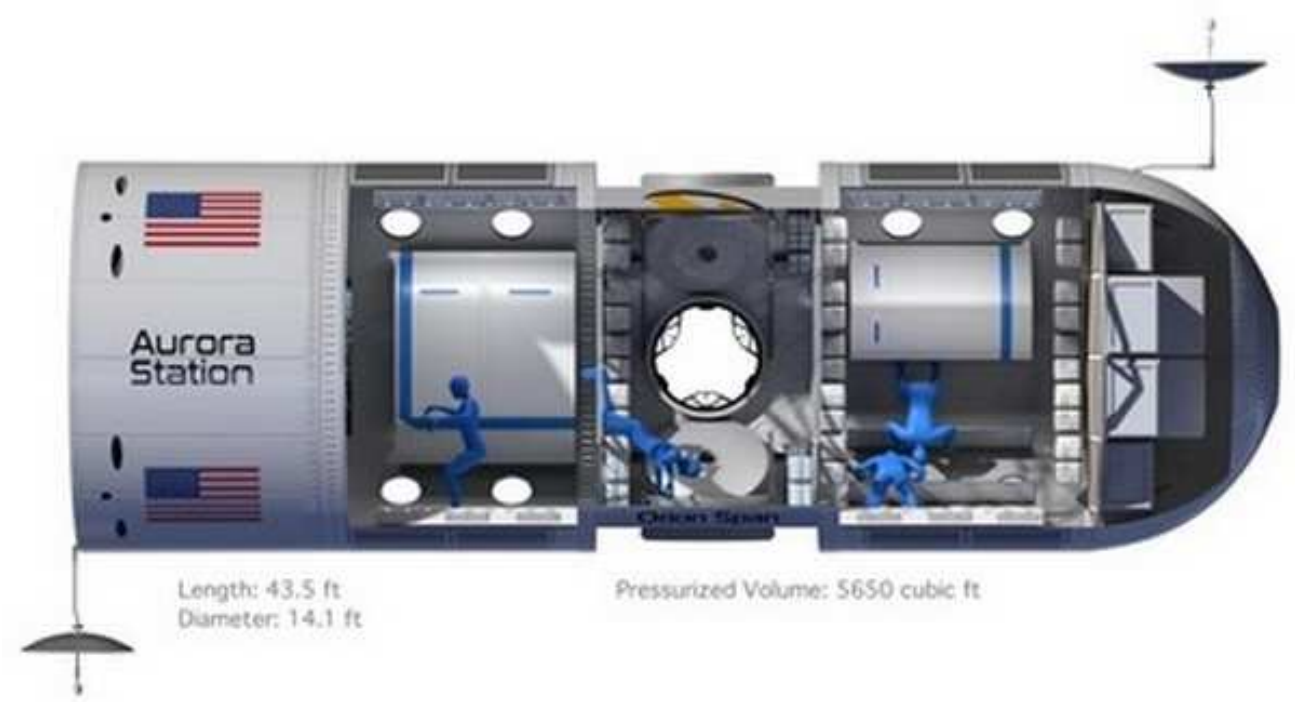
Well-heeled space tourists will have a new orbital destination four years from now, if one company's plans come to fruition.

That startup, called Orion Span, aims to loft its "Aurora Station" in late 2021 and begin accommodating guests in 2022.

Artist's illustration of Orion Span's planned orbiting hotel, Aurora Station. Credit: Orion Span

"We are launching the first-ever affordable luxury space hotel," said Orion Span founder and CEO Frank Bunger, who unveiled the Aurora Station idea today (April 5) at the Space 2.0 Summit in San Jose, California.

"Affordable" is a relative term: A 12-day stay aboard Aurora Station will start at $9.5 million. Still, that's quite a bit less than orbital tourists have paid in the past. From 2001 through 2009, seven private citizens took a total of eight trips to the International Space Station (ISS), paying an estimated $20 million to $40 million each time. (These private missions were brokered by the Virginia-based company Space Adventures and employed Russian Soyuz spacecraft and rockets.)
"There's been innovation around the architecture to make it more modular and more simple to use and have more automation, so we don't have to have EVAs [extravehicular activities] or spacewalks," Bunger said of Aurora Station.



Aurora Station will accommodate four paying guests and two crewmembers. Credit: Orion Span

"The goal when we started the company was to create that innovation to make simplicity possible, and by making simplicity possible, we drive a tremendous amount of cost out of it," he told Space.com.
Orion Span is building Aurora Station itself, Bunger added. The company — some of whose key engineering players have helped design and operate the ISS — is manufacturing the hotel in Houston and developing the software required to run it in the Bay Area, he said.

Aurora Station will be about the size of a large private jet's cabin. It'll measure 43.5 feet long by 14.1 feet wide (13.3 by 4.3 meters) and feature a pressurized volume of 5,650 cubic feet (160 cubic m), Orion Span representatives said. For comparison, the ISS is 357 feet (109 m) long and has an internal pressurized volume of 32,333 cubic feet (916 cubic m).

Orion Span plans to add onto the original Aurora Station core over time as demand grows. Credit: Orion Span

The private outpost will orbit at an altitude of 200 miles (320 kilometers) — a bit lower than the ISS, which is about 250 miles (400 km) above Earth on average. Right now, it's unclear how Aurora Station and its future occupants will get to orbit; Orion Span has yet to confirm any deals with launch providers, Bunger said.

Aurora Station will accommodate four paying guests and two crewmembers; these latter personnel will likely be former astronauts, Bunger said. Most of the guests will probably be private space tourists, at least initially, but Orion Span will be available to a variety of customers, including government space agencies, he added.

And the space hotel will get bigger over time, if everything goes according to plan. As demand grows, Orion Span will launch additional modules to link up with the original core outpost, Bunger said.

"Our long-term vision is to sell actual space in those new modules," he said. "We're calling that a space condo. So, either for living or subleasing, that's the future vision here — to create a long-term, sustainable human habitation in LEO [low Earth orbit]."

Orion Span isn't alone in seeking to carve out this path. Several other companies, including Axiom Space and Bigelow Aerospace, also aim to launch commercial space stations to Earth orbit in the next few years to meet anticipated demand from space tourists, national governments, researchers and private industry. (Other private players, including Virgin Galactic and Blue Origin, are developing vehicles to take paying customers to and from suborbital space, and are scheduled to begin commercial operations soon.)

If you've got $80,000 to spare, you can put a (fully refundable) deposit down on an Aurora Station stay beginning today. Folks who fly up will undergo a three-month training program,

the last portion of which will occur aboard the space hotel itself, Bunger said. To learn more, go to www.orionspan.com.

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VIRGIN GALACTIC COMPLETES 1ST POWERED TEST FLIGHT SINCE FATAL 2014 CRASH

By Douglas Messier, Space.com Contributor | April 5, 2018 02:57pm ET
https://www.space.com/40217-virgin-galactic-1st-powered-test-flight-since-2014.html?utm_source=sdc-newsletter&utm_medium=email&utm_campaign=20180407-sdc

MOJAVE, Calif. — Virgin Galactic made a triumphant return to powered flight today (April 5) with a successful test of the company's SpaceShipTwo VSS Unity suborbital vehicle. It was the company's first powered flight in nearly 3.5 years, following the tragic loss of SpaceShipTwo VSS Enterprise on Oct 31, 2014.

VSS Unity was dropped from its WhiteKnightTwo mothership from about 50,000 feet (15,000 meters) over the mountains about 20 miles (32 kilometers) north of the Mojave Air and Space Port in California. Pilots David Mackay and Mark "Forger" Stucky fired Unity's hybrid engine for 30 seconds, boosting the vehicle to a top speed of Mach 1.87 and a maximum altitude of 84,271 feet (25,686 m) before gliding back to the runway at the spaceport, Virgin Galactic representatives said.

During the descent, the crew deployed SpaceShipTwo's feather system, which reconfigures the ship into a high-drag shuttlecock by moving its twin tail booms. The feather will be used to soften the vehicle's re-entry into the Earth's atmosphere during spaceflight.

"@virgingalactic back on track,?? Virgin Galactic founder Richard Branson tweeted after today's test. "Successful powered flight, Mach 1.6. Data review to come, then on to the next flight. Space feels tantalizingly close now."

Virgin Galactic's second SpaceShipTwo, the VSS Unity, performed its first rocket-powered test flight over California's Mojave Desert on April 5, 2018. The test flight did not aim to reach space. Credit: Virgin Galactic /www.MarsScientific.com & Trumbull Studios

Unity's first powered flight came after more than a year of unpowered tests that saw the spacecraft glide back to the runway seven times. The most recent glide flight was on Jan. 11.

Virgin Galactic representatives have said they will conduct a series of powered flights throughout 2018 with increasingly longer engine firings. They expect the spaceship to get at least 50 miles (80 km) up later this year, the altitude defined as the beginning of space by a number of entities, including the U.S. Air Force.

Eventually, the test program will move down to Spaceport America in New Mexico, where Virgin Galactic is the anchor tenant.

Virgin Galactic's SpaceShipTwo, the VSS Unity, lands at the Mojave Air and Space Port in Mojave, California after making its first powered test flight on April 5, 2018. Credit: Virgin Galactic

The company hopes to start commercial service from Spaceport America later this year. Branson plans to be on that first commercial flight of Unity, which seats six passengers and two pilots. Other SpaceShipTwo vehicles are under construction.

Today's flight was the 12th overall for Unity, a total that includes four captive-carry tests. It was the 246th flight of the WhiteKnightTwo mothership, VMS Eve. Enterprise had successfully completed 30 glide flights and three powered tests before it was lost.

Today's flight was a major milestone in another important way. While Enterprise was built and flight-tested by the company Scaled Composites, Unity was produced by The Spaceship Co., which is also owned by the Virgin Group.

Virgin Galactic's carrier plane, the VMS Eve, is seen during preflight preparations for the first powered test flight of the VSS Unity space plane at the Mojave Air and Space Port in Mojave, California on April 5, 2018. The test flight did not aim to reach space. Credit: Virgin Galactic

"It?s official: @TheSpaceshipCo is now the manufacturer of a

crewed, supersonic vehicle. A privately built and operated one, at that. That is 'very' rare company to keep," tweeted William Pomerantz, a former vice president at Virgin Galactic who has moved over to Virgin Orbit.

"THAT WAS AWESOME!" Virgin Galactic President George Whitesides wrote on Twitter. "Congrats to the pilots, crew, ground crew and all the people who designed and built that beautiful ship. Look forward to doing it again!"

The first successful powered flight was a relief to Virgin Galactic after the loss of Enterprise on Halloween 2014. That vehicle broke up near Koehn Lake, resulting in the death of Scaled Composites co-pilot Mike Alsbury. Pilot Pete Siebold parachuted to safety with serious injuries.

The U.S. National Transportation Safety Board found that a design error allowed Alsbury to unlock the feather device prematurely during the powered ascent. The co-pilot was supposed to unlock the feather when the ship hit Mach 1.4; instead, he unlocked it as the vehicle was approaching Mach 1. Aerodynamic forces reconfigured the ship while the engine was still burning, resulting in the breakup.

The reason the pilots have to unlock the feather during powered ascent is to make sure the locks don't stick. If they do, then the pilots would need to abort the flight and glide back to the runway. SpaceShipTwo could suffer serious damage if it descended from high altitude and could not deploy the feather system.

Following the loss of Enterprise, engineers modified the feather system to prevent the pilots from releasing the locks prematurely.

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SPACEX SEEKS OPTION TO SPLASH DOWN IN GULF OF MEXICO

Apr 5, 2018Irene Klotz | Aerospace Daily & Defense Report
http://aviationweek.com/space-symposium/spacex-seeks-option-splash-down-gulf-mexico?NL=AW-05&Issue=AW-05_20180409_AW-05_237&sfvc4enews=42&cl=article_5_3&utm_rid=CPEN1000003019593&utm_campaign=14365&utm_medium=email&elq2=eccf282ad9ab471a96c2a0d1cac1929c

CAPE CANAVERAL—SpaceX is seeking permission from the FAA to land and recover up to six Dragon capsules per year in the Gulf of Mexico, according to a draft environmental assessment released on April 5.

The purpose of the request is to establish an additional landing option for Dragon capsules returning with International Space Station (ISS) crew. NASA has hired SpaceX, along with Boeing, for ISS crew ferry flights beginning in 2019. Both companies plan to conduct unmanned and crewed test flights this year under the Commercial Crew Program (CCP).

“With the introduction of the CCP, the ability to return crew to Earth in a safe and timely manner is extremely important, particularly in cases where human life or health may be in jeopardy,” according to the report, signed by George Nield, the FAA’s outgoing Commercial Space Transportation associate administrator.

Dragon spacecraft landing and recovery zone.
FAA

The option to land Dragon capsules in the Gulf of Mexico "ensures that a secondary splashdown option is available to missions planned to splash down in either the Pacific or Atlantic oceans, which would provide the returning crew with a timely and safe return to Earth," Nield wrote.

Under the proposal, FAA would issue a reentry license to SpaceX, authorizing up to six Dragon landing operations per year in the waters of the Gulf of Mexico. "Landing Dragon in the Gulf of Mexico would not result in an increase in the number of Falcon launches," the report noted.

Each landing operation would include orbital reentry, splashdown, and recovery.

SpaceX intends to debut its Dragon-2 capsule during an unmanned test flight slated for August. The capsules are similar to the Dragon cargo ships currently used to resupply the ISS. Dragon-2 capsules will be loaded with more propellant and include abort capabilities, a landing guidance system and life support systems.

"The Gulf of Mexico would act as a contingency landing site in the event of hazardous conditions in either the currently utilized Pacific Ocean landing site or the recently approved Atlantic Ocean landing site," the report said.

A 30-day public review of the proposal ends on May 4.

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BAE'S LATEST UAV HAS NO USE FOR FLAPS

Ben Coxworth, December 13th, 2017
https://newatlas.com/bae-magma-uav/52611/

The MAGMA UAV has already completed the first phase of flight testing (Credit: BAE Systems)

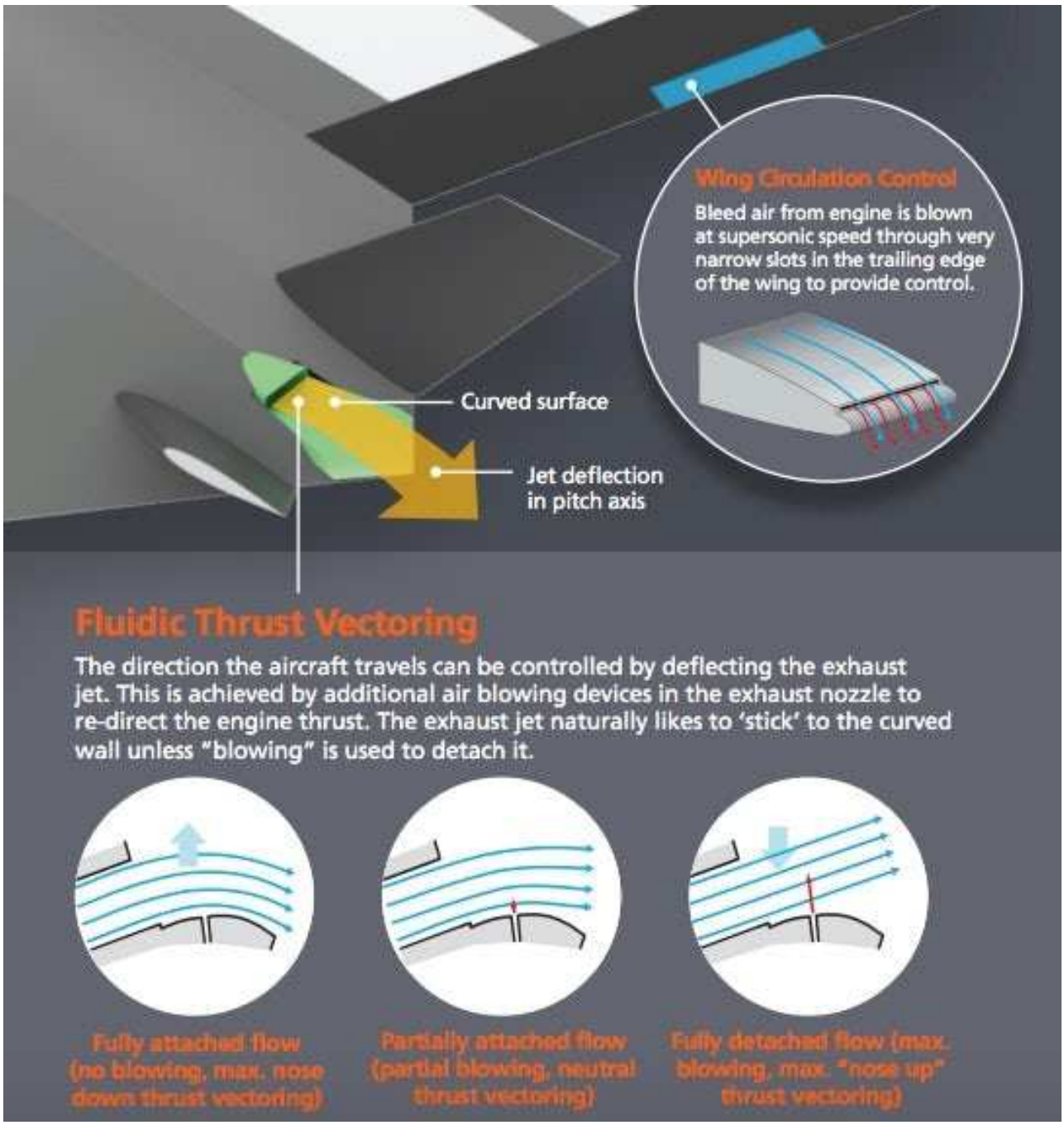
If you're trying to make an aircraft lighter, stealthier, faster, and easier to maintain, how about getting rid of the flaps on the wings and tail? That's what engineers from BAE Systems have done on a small scale, working with colleagues from The University of Manchester. The resulting MAGMA UAV (unmanned aerial vehicle) is instead controlled by air blown from its single jet engine.

Instead of ailerons, the MAGMA's wings have a series of very narrow slots along their trailing edges. Some of the exhaust air is diverted from the engine, and exits those slots at supersonic speed. Utilizing this setup, it's possible to control the UAV's roll simply by controlling how much air is blown out of which wing at what time.

BAE has previously used a similar system in the wings of its DEMON UAV.

In the rear, meanwhile, the engine exhaust blows out of a vent that has a curved lower surface. Ordinarily, the exhaust air tends to "stick" to that surface, following its curve and thus leaving the vent at a particular angle – this angle determines the aircraft's pitch. By blowing a jet of air straight up out of that surface and into the exhaust, however, it's possible to "unstick" it and change the angle at which the exhaust leaves – thus changing the pitch.

Known as fluidic thrust vectoring, the system is illustrated in the bottom of the diagram below.



"Flight trials are planned for the coming months to demonstrate the novel flight control technologies with the ultimate aim of flying the aircraft without any moving control surfaces or fins," BAE states. "If successful, the tests will demonstrate the first ever use of such circulation control in flight on a gas turbine aircraft and from a single engine."

It is hoped that the technology could ultimately find its way into full-scale military and civilian aircraft.

Source: BAE Systems

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WATCH THIS ROBOTIC INTESTINE PUKE ROCKET FUEL

The Japan Aerospace Exploration Agency may start to manufacture solid rocket fuel with puking robot intestines

By Evan Ackerman
https://spectrum.ieee.org/automaton/robotics/space-robots/watch-this-robotic-intestine-puke-rocket-fuel?utm_source=roboticsnews&utm_campaign=roboticsnews-04-10-18&utm_medium=email

Image: Kazumichi Moriyama via YouTube

This is literally a robotic intestine puking rocket fuel. It's being developed in Japan, by roboticists from Chuo University and JAXA, the Japan Aerospace Exploration Agency.

You'll be relieved to learn that it's a robotic intestine puking rocket fuel with a purpose: It's designed to replicate the peristaltic motion of a real intestine in order to gently mix ingredients to make solid rocket fuel. The researchers say their machine is safer than conventional mixers because the fuel doesn't experience high shear stress inside the undulating rubber tubing and is never in contact with metal, avoiding the risk of fire and explosions.

The idea is to turn the solid rocket fuel manufacturing process into a continuous operation rather than a discrete one, replacing rocket fuel mixing bowls that give you fuel in batches with a system that can just continuously pump out fuel instead. It'll be more efficient, safer, and easier to scale, helping keep solid fuel rockets competitive for small satellite launches.

And that means a robotic intestine puking rocket fuel.

VIDEO AT THE WEBSITE OF THE DEVICE AND HOW IT WORKS.

The stuff coming out of the machine represents a rubbery mixture of ammonium perchlorate powder (an oxidizer), aluminum powder (a high energy fuel), and an elastomer binder consisting of hydroxyl-terminated polybutadiene (HTPB). Generally, mixing these things together is done in what look like industrial bread dough mixers, which allows each batch to be carefully controlled to make sure the fuel comes out just right. Also, when you're mixing up something designed to be more or less as explosive as possible, you want to do it very, very gently.

HERE IS ANOTHER VIDEO AT THE WEBSITE OF THE DEVICE AND HOW IT WORKS.

A peristaltic pumping system is able to mix ingredients both safely and effectively. It works just like your intestine does, with rhythmic contractions moving stuff along a tube, except unlike your intestine, the system is closed at both ends and the stuff is added in the middle, along with pressurized air. As the sections of the tube expand and contract, everything inside gets mixed together. An operational system would likely consist of a long mixing loop that would continuously ingest raw rocket fuel ingredients at one end, and then, er, expel them all mixed together at the other.

Once the fuel has been mixed, it's poured into whatever shape you need it to take (lots of interesting options here) and cured into a rubbery solid. While the stuff in the video (which was associated with a media event, it looks like) is simulated propellant for safety reasons, this system has successfully mixed real propellant as well, which the researchers fired off in a benchtop rocket test just to make sure that it worked (it did).

There's more detail in the Robostart article, by Kazumichi Moriyama, below, once you've translated it from Japanese, and I was also able to find a 2016 paper by some of the same researchers. If you'd just like to learn more about solid rocket fuel in general, here's a video from the 1960s showing Thiokol's fuel manufacturing process. And if you want something a bit more up to date (if less focused), this NASA video shows the steps involved in manufacturing one of the solid rocket boosters for the Space Launch System.

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WHY THE NEWER BOEING 737 ENGINES ARE FLAT AT THE BOTTOM

By: Nidhi Goyal | March 17th, 2018
http://www.industrytap.com/newer-boeing-737-engines-flat-bottom/45076

Have you ever noticed that Boeing 737 engines have a weird shape? They look weird because they are flat at the bottom. But why are they flat? Is there some special reason for this?

Of course, there is a reason!

When the plane debuted, the Boeing 737 had rounded engines. But in 1985, Boeing decided to redesign the 737 to fit more passengers. The only way to do that was to stretch the airframe.

Photo by wbaiv / CC BY-SA 2.0

So, the Boeing 737-200, which had rounded engines, was stretched and Boeing started production of an extended version of the Boeing 737-200. As a result, Boeing launched the 737-300, 737-400, and 737-500 models, also referred to as the Boeing 737 Classic series.

But when the aircraft was stretched it changed the center of gravity and reduced the ground clearance. In order to resolve the problem of the new center of gravity, Boeing redesigned the engine pylons. The flattening of the engine's nacelle provided extra clearance from the ground.

Of course, the engine itself is not flat, it is circular because the fan is circular. Only the bottom of the engine nacelle has been flattened.

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BELL'S V-280 TO FLY LIKE AIRCRAFT

http://aviationweek.com/defense/bell-s-v-280-fly-aircraft?NL=AW-05&Issue=AW-05_20180410_AW-

05_858&sfvc4enews=42&cl=article_1&utm_rid=CPEN1000003019593&utm_campaign=14389&utm_medium=email&elq2=9ac8f954f1eb4c498dea5a346e00237e

V-280: Bell

Bell's V-280 Valor tiltrotor prototype is on track to tilt its nacelles all the way forward and fly in "airplane mode" by the end of April as it proceeds through its testing program, a company official says.

The prototype, which made its first flight in December, now has 19 hr. of flight time and run for 75 hr. on the ground, says Scott Clifton, director for Global Military Business Development for Bell. That includes one flight out of the test pattern and around the city of Amarillo, Texas, where Bell's facility is based. It has flown up to 80 kt.

The V-280 was put together for the U.S. Army's Joint-Multi-Role Technology Demonstration (JMR-TD), essentially a testbed for next-generation rotorcraft technologies that will feed into the Army's Future Vertical Lift program.

The Valor is the first demonstrator to fly. Sikorsky and Boeing have teamed up to build the SB-1 Defiant demonstrator that could fly by the middle of this year. Karem Aircraft and AVX Aircraft Co., which did not win a JMR-TD contract, have continued working on technologies that could feed into future Army aircraft.

Though the fiscal 2019 budget was a boon to most military weapons systems, that was not the case with the FVL. A request for proposals for the FVL-Medium program that was due to be released in 2018 is now not scheduled until 2021, when assured funding is far less certain.

Clifton pointed out that FVL remains one of the Army's top three priorities. "As JMR moves forward, our goal is to continue to fly the V-280 and show that we can provide twice the range and speed and give the Army what it is looking for as a replacement" for the Army's UH-60 Black Hawk, made by Sikorsky, and the Marine Corps' UH-1 Huey, also made by Bell, he added.
