Welcome to the June 14th, 2017 Early Edition of THE REVENGE HUMP DAY!

I have been thinking very seriously about our Space Agency NASA and where they are going with their hardware development. Specifically I am thinking about SpaceX's impact on their future. SpaceX has been launching it's first stage boosters and relanding them for about a year or so now. Now it has reused one of it's Dragon Cargo Capsules. SpaceX is now building it's Falcon Heavy Rocket and the core of the first state is that it will reland all three of the boosters. Why is this important? Simple, the cost of the fuel for a booster less than 1% of the cost of the hardware. Now if you can recover the 1st stage booster, refurbish it, refuel it and then relaunch it for another satellite, SpaceX expects to save 70% of the cost of the initial launch.

SpaceX is trying to lower the cost of launching satellites. Not keep it excessive high. Now there are times SpaceX has to sacrifice the first stage of the Falcon9 rocket because of the launch profile and weight of the payload and I understand this. But it seems that NASA is ignoring this model as it develops in new Space Launch heavy lift vehicle. They are staying with the idea of launching equipment and throwing it away after one use. What the hell? Does anyone out there seem to think as I do that this is a bad idea?

SpaceX has pointed the way for affordable space flight hardware but NASA it seems is going it's own way. So here is the question of the week, "Should NASA redesign it's Space Launch Heavy Lift Vehicle to include the lesions of reusability that SpaceX had developed.

I think that it will be interesting to see what you think about this idea.

So on that "questioning 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>~<!>

RIP ADAM WEST, TV'S BATMAN

From: "Tim Bolgeo" tbolgeo@epbfi.com

Katharine Trendacosta, June 10, 2017
http://io9.gizmodo.com/rip-adam-west-tvs-batman-1795984530

Born in 1928 in Walla Walla, Washington, West was eventually drafted into the United States army where he acted as an announcer on American Forces Network television. Prior to Batman, West appeared in a number of TV Westerns, "The Invisible Enemy" episode of The Outer Limits, and had a supporting part in The Detectives Starring Robert Taylor.

All of that paled in comparison to Batman, which premiered in 1966, and was a cultural phenomenon. It is iconic both as a symbol of the '60s and as one of the most influential versions of the caped crusader. West himself was inextricably linked to the character for the rest of his life.

And while West did end up typecast because of the part, he later embraced it, reprising his role as Batman, playing parodies of Batman, or playing parodies of an actor who had one

iconic superhero role. He kept the legacy alive for a whole new generation through voice work. He voiced a superhero who turned out to just be an older actor in Kim Possible and who just happened to be named "Timothy North." He's famously the the deranged mayor of Quahog, Adam West.

Adam West, forever known to many as Batman and whose name is synonymous with taking your most famous role and parodying it, has passed away. He was 88.

Famously, he voiced Simon Trent, an unemployed and broke former actor famous for his costumed crimefighter the Gray Ghost in Batman: The Animated Series. The episode "Beware the Gray Ghost" even includes Bruce Wayne remembering watching the show as a child and being inspired. In a meta-moment, Trent saves Batman's life in costume and Trent's heroism in the episode spawns a resurgent interest in his old TV show.

West still has one last turn as Batman left: he'll voice the character in the follow-up to the Batman '66 animated movie Return of the Caped Crusaders. Titled Batman vs. Two-Face, and with William Shatner as Two-Face, it's due out this year.

In every interaction I had with him, West was a genial storyteller who had no reason to be as nice as he was. It's honestly devastating that he lost his battle with leukemia.

"Our dad always saw himself as The Bright Knight, and aspired to make a positive impact on his fans' lives. He was and always will be our hero," says his family's statement. And it feels very true.

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

Re. Tolkien and the LOTR Trilogy:

From: "Brayman, Frank" afranklin3@gmail.com

About 50 years ago, my high school friends convinced me to read LOTR. By the third chapter, I was Bored of the Rings. Long, boring descriptions - bloviating speeches - doggerel poetry - and the action moved at a glacial pace. I bulled my way through the Trilogy, hoping it would get better. It didn't. I should have waited for the movies.

Think how much better the trilogy would have been if Elmore Leonard had written it. Make Frodo a character like Chili Palmer in "Get Shorty". It would have had great characters, snappy dialog, and plenty of action, all in about 350 pages.

Or a Tom Clancy version. Use Navy SEAL John Clark as Frodo. Clancy would have many parallel threads, converging and building to a climax. It would run maybe 900 pages, but by the end, you'd know all there is to know about the Elvish and Orkish Armies.

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

Re: New Army Combat Riffle

From: "Jim Woosley" Jimwoosley@aol.com

Alternatively, the Army could adopt the 300 AAC Blackout (7.62 x 35), which is the same length and cartridge diameter as the 5.56 NATO, and can be manufactured with (slightly) higher energy, and significantly higher momentum.

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

From a poke from Wyman Cooke on Facebook

HOW LONG

The Navy found they had too many officers and decided to offer an early retirement bonus. They promised any officer who volunteered for retirement a bonus of $1000 for every inch measured in a straight line between any two points of their body; the officer got to choose the two points.

The first officer who accepted asked that he be measured from the top of his head to the tip of his toes. He was measured at six feet and walked out with a bonus of $72,000.

The second officer who accepted was a little smarter and asked to be measured from the tip of his outstretched hands to his toes. He walked out with $96,000.

The third to accept was a grizzled old Warrant Officer who, when asked where he would like to be measured replied, "From the tip of my pecker to my nuts."

It was suggested by the pension man that he might want to reconsider, explaining about the big checks the previous two officers had received, but the old Warrant insisted. They

decided to go along with his choice, providing the measurement was taken by a Medical Officer.

The Medical Officer arrived and instructed the Warrant to 'Drop 'em', which he did. The Doc then placed the tape measure on the tip of the Warrant's tallywacker and began to work back.

"Dear Lord!" he suddenly exclaimed. "Where are your testicles?"

The old Warrant calmly replied, "Vietnam"

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

From: "Carol Donaldson" carol@zortec.com

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

From: "Ray Beloate" <beerman@rittermail.com>

MERGER OF THE CENTURY (Careful)

This will no doubt put Coca Cola out of business in the near future!

The Pfizer Corporation announced today that Viagra will soon be available in liquid form and this new product will be marketed by Pepsi Cola as a power beverage suitable for use as a mixer.

It will now be possible for a man to literally pour himself a stiff one. Obviously we can no longer call this a soft drink, and it gives new meaning to the names of cocktails, highballs and just a good old-fashioned stiff drink. Pepsi will market the new concoction by the name: MOUNT & DO.

Thought for the day: There is more money being spent on breast implants and Viagra today than on Alzheimer's research. This means that by 2025, there should be a large elderly population with perky boobs, huge erections and absolutely no recollection of what to do with them; and, if you don't send this to five senior friends right away there will be five fewer people laughing

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

From Phil Davis's Facebook Post

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

From: "Bob Bolgeo" bbolgeo@aol.com

Lawyers.....

A lawyer, who had a wife and 12 children, needed to move because his rental agreement was terminated by the owner who wanted to reoccupy the home.

But he was having a lot of difficulty finding a new house. When he said, he had 12 children, no one would rent a home to him because they felt that the children would destroy the place. He couldn't say he had no children, because he couldn't lie. We all know lawyers cannot and do not lie.

So, he sent his wife for a walk to the cemetery with 11 of their kids.
He took the remaining one with him to see rental homes with the real estate agent. He loved one of the homes and the price was right -- the agent asked:

"How many children do you have? He answered: "Twelve."

The agent asked, "Where are the others?"

The lawyer, with his best courtroom sad look answered "They're in the cemetery with their mother."

MORAL: It's not necessary to lie, one only has to choose the right words...and don't forget, most politicians are unfortunately lawyers.

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

SIX BASIC RULES FOR GOOD HEALTH

1. F*ing once a week is good for your health, every day is even better.**

2. F*ing gives proper relaxation for your mind & body.**

3. F*ing refreshes you.**

4. After F*ing don't eat too much ... Go for more liquids.**

5. F*ing can even reduce your cholesterol level!!!**

SO ... REMEMBER ...

****
*** fishing.jpg ***
****
6. FISHING is good for your health and soul ...

And may the Good Lord cleanse your Filthy Mind !!!

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

From: "Chris Cowan" cowanc1028@earthlink.net

SQUIRRELS IN CHURCH

The Presbyterian church called a meeting to decide what to do about their squirrels. After much prayer and consideration, they concluded the squirrels were predestined to be there and they shouldn't interfere with God's divine will.

At the Baptist church the squirrels had taken an interest in the baptistery The deacons met and decided to put a water slide on the baptistery and let the squirrels drown themselves. The squirrels liked the slide and, unfortunately, knew instinctively how to swim so twice as many squirrels showed up the following week.

The Methodist church decided that they were not in a position to harm any of God's creatures. So, they humanely trapped their squirrels and set them free near the Baptist Church. Two weeks later the squirrels were back when the Baptists took down the water slide.

But the Catholic Church came up with a very creative strategy. They baptized all the squirrels and consecrated them as members of the church. Now they only see them on Christmas and Easter.

Not much was heard from the Jewish synagogue; they took the first squirrel and circumcised him. They haven't seen a squirrel since.

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

From: "Mike Waldrip" waldripk@gmail.com

SLIGHTLY DIFFERENT DEFINITIONS

1. THINGY (thing-ee) n.

Female: Any part under a car's hood.
Male: The strap fastener on a woman's bra.

2. VULNERABLE (vul-ne-ra-bel) ad
Female: Fully opening up one's self emotionally to another.
Male: Playing baseball (catcher) without a cup.

3. COMMUNICATION (ko-myoo-ni-kay-shon) n.
Female: The open sharing of thoughts and feelings with one's partner.
Male: Leaving a note before taking off on a fishing trip with the boys.

4. COMMITMENT (ko-mit-ment) n.
Female: A desire to get married and raise a family
Male: Trying not to hit on other women while out with this one.

5. ENTERTAINMENT (en-ter-tayn-ment) n.
Female: A good movie, concert, play or book.
Male: Anything that can be done while drinking beer.

6. FLATULENCE (flach-u-lens) n.
Female: An embarrassing byproduct of indigestion.
Male: A source of entertainment, self-expression, male bonding.

7 MAKING LOVE (may-king luv) n.
Female: The greatest expression of intimacy a couple can achieve.
Male: Call it whatever you want, just as long as we do it.

8. REMOTE CONTROL (ri-moht kon-trohl) n.
Female: A device for changing from one TV channel to another.

Male: A device for scanning through all 375 channels every 5 minutes.

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

YOU JUST CAN'T MAKE THIS STUFF UP!

From: "Chris Cowan" cowanc1028@earthlink.net
7 IN 10 SMARTPHONE APPS SHARE YOUR DATA WITH THIRD-PARTY SERVICES

The majority of apps running on Android and iOS smartphones report personal data to third-party tracking companies like Google, Facebook or Crashlytics

By Narseo Vallina-Rodriguez, Srikanth Sundaresan, The Conversation US on May 30, 2017
https://www.scientificamerican.com/article/7-in-10-smartphone-apps-share-your-data-with-third-party-services/?WT.mc_id=send-to-friend

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

Our mobile phones can reveal a lot about ourselves: where we live and work; who our family, friends and acquaintances are; how (and even what) we communicate with them; and our personal habits. With all the information stored on them, it isn't surprising that mobile device users take steps to protect their privacy, like using PINs or passcodes to unlock their phones.

The research that we and our colleagues are doing identifies and explores a significant threat that most people miss: More than 70 percent of smartphone apps are reporting personal data to third-party tracking companies like Google Analytics, the Facebook Graph API or Crashlytics.

When people install a new Android or iOS app, it asks the user's permission before accessing personal information. Generally speaking, this is positive. And some of the information these apps are collecting are necessary for them to work properly: A map app wouldn't be nearly as useful if it couldn't use GPS data to get a location.

But once an app has permission to collect that information, it can share your data with anyone the app's developer wants to—letting third-party companies track where you are, how fast you're moving and what you're doing.

THE HELP, AND HAZARD, OF CODE LIBRARIES

An app doesn't just collect data to use on the phone itself. Mapping apps, for example, send your location to a server run by the app's developer to calculate directions from where you are to a desired destination.

The app can send data elsewhere, too. As with websites, many mobile apps are written by combining various functions, precoded by other developers and companies, in what are called third-party libraries. These libraries help developers track user engagement, connect with social media and earn money by displaying ads and other features, without having to write them from scratch.

However, in addition to their valuable help, most libraries also collect sensitive data and send it to their online servers—or to another company altogether. Successful library authors may be able to develop detailed digital profiles of users. For example, a person might give one app permission to know their location, and another app access to their contacts. These are initially separate permissions, one to each app. But if both apps used the same third-party library and shared different pieces of information, the library's developer could link the pieces together.

Users would never know, because apps aren't required to tell users what software libraries they use. And only very few apps make public their policies on user privacy; if they do, it's usually in long legal documents a regular person won't read, much less understand.

DEVELOPING LUMEN

Our research seeks to reveal how much data are potentially being collected without users' knowledge, and to give users more control over their data. To get a picture of what data are being collected and transmitted from people's smartphones, we developed a free Android app of our own, called the Lumen Privacy Monitor. It analyzes the traffic apps send out, to report which applications and online services actively harvest personal data.

Because Lumen is about transparency, a phone user can see the information installed apps collect in real time and with whom they share these data. We try to show the details of apps' hidden behavior in an easy-to-understand way. It's about research, too, so we ask users if they'll allow us to collect some data about what Lumen observes their apps are doing—but that doesn't include any personal or privacy-sensitive data. This unique access to data allows us to study how mobile apps collect users' personal data and with whom they share data at an unprecedented scale.

In particular, Lumen keeps track of which apps are running on users' devices, whether they are sending privacy-sensitive data out of the phone, what internet sites they send data to, the network protocol they use and what types of personal information each app sends to each site. Lumen analyzes apps traffic locally on the device, and anonymizes these data before sending them to us for study: If Google Maps registers a user's GPS location and sends that specific address to maps.google.com, Lumen tells us, "Google Maps got a GPS location and sent it to maps.google.com"—not where that person actually is.

TRACKERS ARE EVERYWHERE

More than 1,600 people who have used Lumen since October 2015 allowed us to analyze more than 5,000 apps. We discovered 598 internet sites likely to be tracking users for advertising purposes, including social media services like Facebook, large internet companies like Google and Yahoo, and online marketing companies under the umbrella of internet service providers like Verizon Wireless.

We found that more than 70 percent of the apps we studied connected to at least one tracker, and 15 percent of them connected to five or more trackers. One in every four trackers harvested at least one unique device identifier, such as the phone number or its device-specific unique 15-digit IMEI number. Unique identifiers are crucial for online tracking services because they can connect different types of personal data provided by

different apps to a single person or device. Most users, even privacy-savvy ones, are unaware of those hidden practices.

MORE THAN JUST A MOBILE PROBLEM

Tracking users on their mobile devices is just part of a larger problem. More than half of the app-trackers we identified also track users through websites. Thanks to this technique, called "cross-device" tracking, these services can build a much more complete profile of your online persona.
And individual tracking sites are not necessarily independent of others. Some of them are owned by the same corporate entity—and others could be swallowed up in future mergers. For example, Alphabet, Google's parent company, owns several of the tracking domains that we studied, including Google Analytics, DoubleClick or AdMob, and through them collects data from more than 48 percent of the apps we studied.

Users' online identities are not protected by their home country's laws. We found data being shipped across national borders, often ending up in countries with questionable privacy laws. More than 60 percent of connections to tracking sites are made to servers in the U.S., U.K., France, Singapore, China and South Korea—six countries that have deployed mass surveillance technologies. Government agencies in those places could potentially have access to these data, even if the users are in countries with stronger privacy laws such as Germany, Switzerland or Spain.

Even more disturbingly, we have observed trackers in apps targeted to children. By testing 111 kids' apps in our lab, we observed that 11 of them leaked a unique identifier, the MAC address, of the Wi-Fi router it was connected to. This is a problem, because it is easy to search online for physical locations associated with particular MAC addresses. Collecting private information about children, including their location, accounts and other unique identifiers, potentially violates the Federal Trade Commission's rules protecting children's privacy.

JUST A SMALL LOOK

Although our data include many of the most popular Android apps, it is a small sample of users and apps, and therefore likely a small set of all possible trackers. Our findings may be merely scratching the surface of what is likely to be a much larger problem that spans across regulatory jurisdictions, devices and platforms.

It's hard to know what users might do about this. Blocking sensitive information from leaving the phone may impair app performance or user experience: An app may refuse to function if it cannot load ads. Actually, blocking ads hurts app developers by denying them a source of revenue to support their work on apps, which are usually free to users.

If people were more willing to pay developers for apps, that may help, though it's not a complete solution. We found that while paid apps tend to contact fewer tracking sites, they still do track users and connect with third-party tracking services.

Transparency, education and strong regulatory frameworks are the key. Users need to know what information about them is being collected, by whom, and what it's being used for. Only then can we as a society decide what privacy protections are appropriate, and put

them in place. Our findings, and those of many other researchers, can help turn the tables and track the trackers themselves.

This article was originally published on The Conversation. Read the original article.

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From: "Tim Bolgeo" tbolgeo@epbfi.com

SKUNK WORKS HINTS AT SR-72 DEMONSTRATOR PROGRESS

Jun 6, 2017Guy Norris | Aerospace Daily & Defense Report
http://aviationweek.com/defense/skunk-works-hints-sr-72-demonstrator-progress?NL=AW-05&Issue=AW-05_20170607_AW-05_393&sfvc4enews=42&cl=article_2&utm_rid=CPEN1000003019593&utm_campaign=10321&utm_medium=email&elq2=bb8c5612e9e647a48cec178e9277d0c5

Lockheed Martin

DENVER, Colorado—Four years after revealing plans to develop a Mach 6 strike and reconnaissance aircraft, Lockheed Martin says hypersonic technologies are now sufficiently mature to enable progress towards a flight demonstrator.

The company's secretive Skunk Works unit has been working since at least the early 2000s on the basic building blocks for an operational hypersonic vehicle and in 2013 revealed to Aviation Week it was developing a scaled demonstrator for the SR-72, a proposed successor to the U.S. Air Force's long-retired Mach 3 SR-71 Blackbird spy plane. However, details on any subsequent progress have been scarce since this initial plan was unveiled.

"We've been saying hypersonics is two years away for the last 20 years, but all I can say is the technology is mature and we, along with Darpa and the services, are working hard to get that capability into the hands of our warfighters as soon as possible," says Rob Weiss, Lockheed Martin's executive vice president and general manager for Advanced Development Programs.

Speaking to Aviation Week on the sidelines at the AIAA Aviation 2017 forum here, Weiss cautions, "I can't give you any timelines or any specifics on the capabilities. It is all very sensitive. Some of our adversaries are moving along these lines pretty quickly and it is important we stay quiet about what is going on. We can acknowledge the general capability that's out there, but any program specifics are off limits."

However, Weiss hints that work on a combined cycle propulsion system and other key advances needed for a viable hypersonic vehicle are reaching readiness levels sufficient for incorporation into some form of demonstrator. Following critical ground demonstrator tests from 2013 through 2017, Lockheed Martin is believed to be on track to begin development of an optionally piloted flight research vehicle (FRV) starting as early as next year. The FRV is expected to be around the same size as an F-22 and powered by a full-scale, combined cycle engine.

While no specific details have been revealed, it is known that Lockheed Martin and Aerojet Rocketdyne have been teamed since 2006 on work to integrate an off-the-shelf turbine with a scramjet to power an aircraft with a combined cycle propulsion system from standstill to Mach 6 plus. The development built on work begun earlier under the Air Force/Darpa HTV-3X reusable hypersonic demonstrator, which was cancelled in 2008 but went a step further to integrate a high-speed turbine engine. The HTV-3X concept was an outgrowth of Darpa's Falcon program, which included development of small launch vehicles, common aero vehicles and a hypersonic cruise vehicle.

"The combined cycle work is still occurring and obviously a big breakthrough in the air-breathing side of hypersonics is the propulsion system," Weiss adds. "So this is not just on combined cycle but on other elements of propulsion system."
The technology of the "air breather has been matured and work is continuing on those capabilities to demonstrate that they are ready to go and be fielded," he adds.

Depending on progress with the FTV, which would fly in the early 2020s, Lockheed Martin has previously said the follow-on step would be development of a full-scale, twin-engine SR-72. Built to roughly the same proportions as the SR-71, the larger vehicle would enter flight test in the late 2020s.

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PRATT FORGES AHEAD WITH F-35 ENGINE UPGRADE PLANS, EYES NEXT GEN

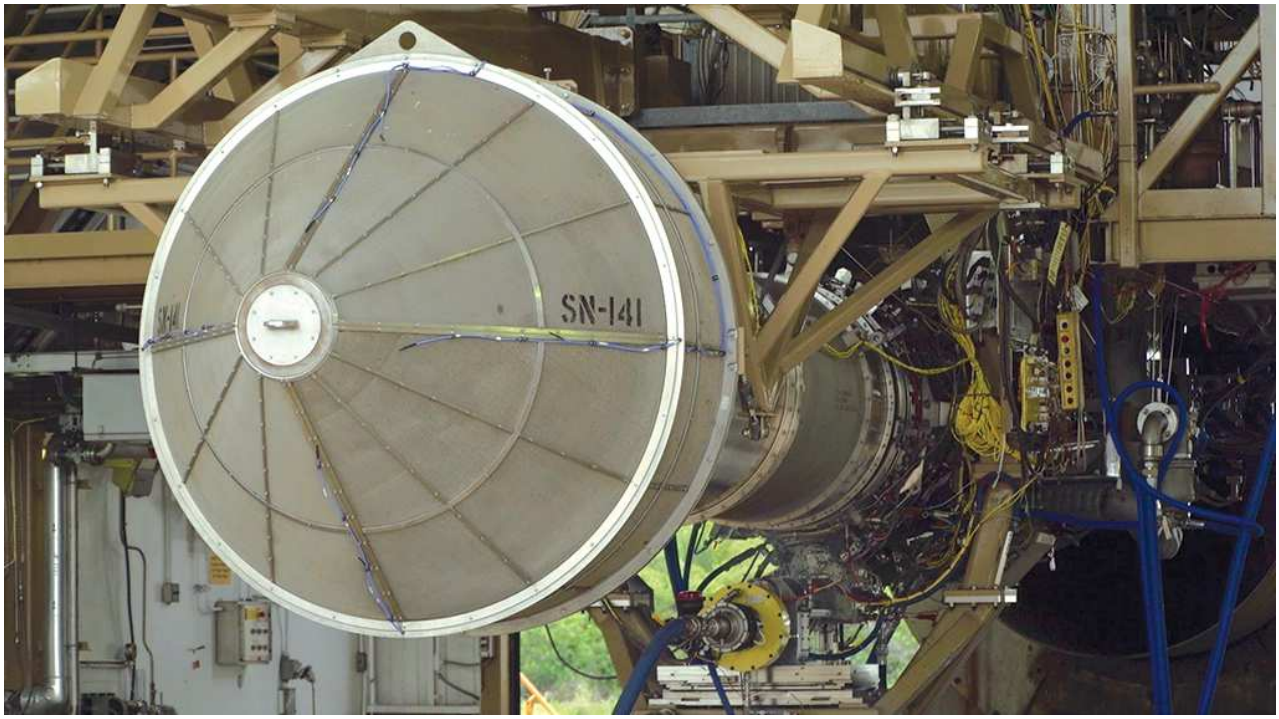
Lara Seligman and Guy Norris, Aviation Week & Space Technology, Jun 5, 2017
http://aviationweek.com/defense/pratt-forges-ahead-f-35-engine-upgrade-plans-eyes-next-gen?NL=AW-05&Issue=AW-05_20170608_AW-05_347&sfvc4enews=42&cl=article_1&utm_rid=CPEN1000001477803&utm_campaign=10335&utm_medium=email&elq2=14ceb7ee9d394deaa168da5c51e07b84

Pratt & Whitney reached a new milestone in its road map for upgrading the F135 turbofan that powers the Joint Strike Fighter, and is looking to leverage that success to help secure the next generation of fighter propulsion.

The engine maker recently completed key tests of a proposed core upgrade package for the F135, confirming the potential for substantial fuel savings and higher thrust as soon as 2020. Crucially, the improved performance would come at a reasonable price to the U.S. government; the upgraded powerplant is "cost-neutral" from a procurement perspective, says Matthew Bromberg, president of Pratt & Whitney Military Engines.

But the F-35 is planned to fly far beyond 2020—until 2070, if recent Pentagon estimates prove correct. The fighter will need an engine that can keep pace with technological advancements for the next five decades. For now, as prime contractor on the F-35 powerplant, Pratt has a foothold in current and near-term U.S. fighter propulsion. But as threats and technologies evolve, that may change.

Both Pratt and General Electric are working under the U.S. Air Force-led Adaptive Engine Technology Demonstration (AETD), as well as the follow-on Adaptive Engine Transition Program (AETP), to test technology for a new generation of fighter engines. Under AETP, Pratt and GE are developing demonstrators—Pratt's XA101 and GE's competing XA100—to pave the way for an adaptive, 45,000-lb.-thrust-class combat powerplant, as well as the possible reengining of the JSF.



Pratt & Whitney is proposing an initial upgrade package for the F-35 engine that promises fuel reductions of up to 6% and as much as 10% higher thrust as soon as 2020. Evaluation of the package, which is focused on the high-pressure compressor, turbine and combustor stages, has been undertaken using testbed engine FX701-01 at Test Site A3 at Pratt's West Palm Beach, Florida, facility. Credit: Pratt & Whitney

Hoping to stave off competition from GE and other engine makers, Pratt has framed its F135 upgrade effort as the first step in a long-term plan for fighter propulsion based on adaptive engine technology. That not only refers to the three-stream adaptive cycle that industry is developing, but also adaptive controls, an adaptive sustainment system and eventually perhaps an adaptive core that can handle unique operating pressure ratios, Bromberg says.

Pratt's F135 modernization plan is envisioned as a seamless bridge to a next-generation fighter engine—the initial core upgrade package, or Growth Option (GO) 1.0, is just the first step.

"As each upgrade becomes available, we will look at taking the elements of that architecture suite and inserting that into the motors as available," says Bromberg. "Adaptive architecture is the umbrella for the future of fighter engine propulsion, and Growth Option 1.0 will be the first incarnation of upgrading the JSF."

GO 1.0 represents the first phase in a two-stage improvement road map scenario for the F-35 engine first unveiled in 2015 and promising 6-10% more thrust and a 4-6% fuel-burn reduction (AW&ST April 13-26, 2015, p. 26). It builds on a suite of core technologies evaluated since 2013 under the U.S. Navy-sponsored Fuel Burn Reduction (FBR) program. It also incorporates design improvements developed by Pratt under earlier technology programs including the Air Force-supported component and engine structural assessment research, known as Caesar, which focused on the F135's predecessor, the F-22's F119 engine.

Evaluation of the package, which is focused on the high-pressure compressor, turbine and combustor stages, was done using testbed engine FX701-01 at Test Site A3 at Pratt's West Palm Beach, Florida, facility. Although not a program of record for the F-35, Pratt says risk-reduction work performed on the test rig has proved GO 1.0 can be executed as a low-cost means of improving the aircraft's range and acceleration.

"We feel very confident that we could launch a program, complete the testing and EMD [engineering, manufacturing and design], and have a production change or retrofit available by 2020," explains Bromberg. If given "the green light" to begin work on a formal improvement package this year, Bromberg says the development would align with the JSF's planned Block 4.2 upgrade.

Pratt believes GO 1.0 is attractive to the F-35 community, primarily due to affordability. After the "relatively short" EMD program, the U.S. government would have to swap out the old engine for the new, upgraded system across the fleet, but that could be accomplished on an attrition basis during scheduled depot maintenance.

"We could cut it into production and we could cut it into depot retrofits . . . if you did it on an attrition basis when you are replacing hardware anyway, the cost of the hardware is roughly the same," Bromberg points out. If the government decides to force a retrofit, it must pay for the core module, but that would be "the incremental cost."

A key advantage of GO 1.0 is that it fits into the existing sustainment structure for the F-35, including the troubled Autonomic Logistics Information System (ALIS) that provides the maintenance backbone of the fleet. Lockheed Martin has encountered challenges

integrating the Pratt engine into the latest ALIS iteration, 2.0.2, and just started delivering the new system to the fleet in April.

"It's just a drop in part number change and suite of health management tools that will go right into ALIS, so [there are] no changes to ALIS" aside from updating part changes and the new health-monitoring algorithms, says Bromberg. "If you go to a new core it's an entirely new engine. It requires an entirely new instance of ALIS or a complete upgrade."

In addition, GO 1.0 is "variant common," so it can be dropped into any of the three U.S. JSF variants or partner aircraft, Bromberg says.

The second phase of Pratt's F135 road map, GO 2.0, would incorporate additional adaptive engine technology features in development through Air Force and Navy-supported initiatives, primarily including AETD and AETP. Both Pratt's XA101 and GE's XA100 are initially sized for potential application on the F-35.

GO 2.0, which also could include elements of the Navy's variable cycle advanced technology program, would introduce more radical changes including adaptive features in the low-pressure compressor and turbine. Pratt has said the second upgrade phase has the potential to generate a thrust improvement of up to 15% and as much as a 20% reduction in fuel burn. It could be developed in the next "4-8 years" depending on the timing of the first upgrade and the continuing development of the AETP, Bromberg says.

Similarly Pratt also sees potential for elements of GO 1.0 to pave the way for elements of XA101.

"The primary purpose of the FBR is to test the core, the geometry and the coatings. We feel good about it and it reduces the risk of Growth Option 1.0. But definitely some of the technologies in that core are directly applicable in terms of growth materials and aerodynamic geometry, and that will go into XA101," Bromberg explains.

Meanwhile, Pratt has started tests of a three-stream fan mounted on an F135 under AETD and is poised to begin evaluation of an all-new core to prove the technology at the heart of its future adaptive engine. The core run is "in front of us, and is further risk reduction for the XA101 program," says Bromberg. The three-stream fan test engine also is configured with a specially modified augmenter and exhaust system to handle the adaptive-cycle flow demands.

At its core, Pratt's overall strategy is to provide options for whatever path the Air Force chooses.

"We have this umbrella strategy of adaptive architecture and we will start proving out the technologies one by one," Bromberg says. "We are trying to provide options to spiral them in at relatively low-risk, low-cost programs."

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BABY BIRD FROM TIME OF DINOSAURS FOUND FOSSILIZED IN AMBER

The 99-million-year-old hatchling from the Cretaceous Period is the best preserved of its kind.

By Kristin Romey, PUBLISHED JUNE 7, 2017
http://news.nationalgeographic.com/2017/06/baby-bird-dinosaur-burmese-amber-fossil/

The remains of a baby bird from the time of the dinosaurs have been discovered in a specimen of 99-million-year-old amber, according to scientists writing in the journal Gondwana Research.

The hatchling belonged to a major group of birds known as enantiornithes, which went extinct along with dinosaurs at the end of the Cretaceous period, about 65 million years ago. Funded in part by the National Geographic Society's Expeditions Council, this discovery is providing critical new information about these ancient, toothed birds and how they differed from modern birds.

The bird belonged to an ancient group of toothed birds called Enantiornithes, which went extinct along with the dinosaurs. This reconstruction captures the hatchling's pose as preserved in the amber. ILLUSTRATION BY CHUNG-TAT CHEUNG

This is also the most complete fossil yet to be discovered in Burmese amber. Mined in the Hukawng Valley in northern Myanmar, Burmese amber deposits contain possibly the largest variety of animal and plant life from the Cretaceous period, which lasted from 145.5 to 65.5 million years ago.

Based on its molting pattern, researchers could determine that the bird was only in its first days or weeks of life when it was enveloped in sticky tree resin and literally frozen in time. Nearly half of the body is preserved in the three-inch sample, including its head, wings, skin, feathers and a clawed foot clearly visible to the naked eye. Its 99-million-year-old feathers range from white and brown to dark grey in color, and the researchers have nicknamed the young enantiornithine 'Belone', after a Burmese name for the amber-hued Oriental skylark.

The find was reported by several of the same researchers who discovered a feathered theropod dinosaur tail preserved in amber last December. The structure of the dinosaur feathers suggested that it would be incapable of flight. On the other hand, an earlier find of enantiornithine wings in amber revealed a feather structure remarkably similar to flight feathers of modern birds.

In this specimen, scientists observed that while the baby enantiornithine already possessed a full set of flight feathers on its wings, the rest of the plumage was sparse and more similar to the theropod dinosaur feathers, which lack a well-defined central shaft, or rachis.

The presence of flight feathers on such a young bird is reinforcing the idea that enantiornithes hatched with the ability to fly, making them less dependent on parental care than most modern birds.

This independence came at a cost, however. The researchers point out that a slow growth rate made these ancient birds more vulnerable for a longer amount of time, as evidenced by the high number of juvenile enantiornithes found in the fossil record. (No juvenile fossil remains from any other bird lineage are known from the Cretaceous).

The fossilized specimen was purchased in Myanmar in 2014 by Guang Chen, director of the Hupoge Amber Museum in Tengchong City, China, after he had heard about an amber sample with a strange "lizard claw" inclusion. Chen brought the sample to research team co-leader Lida Xingof the China University of Geosciences, who identified the claw as an enantiornithine foot. Additional imaging of the specimen revealed the remarkable extent of preservation obscured behind thick layers of amber, carbonized plant remains, and clay-filled bubbles.

"[I thought we had] just a pair of feet and some feathers before it underwent CT imaging. It was a big, big, big surprise after that," says Xing.

"The surprise continued when we started examining the distribution of feathers and and realized that there were translucent sheets of skin that connected many of the body regions appearing in the CT scan data," adds team co-leader Ryan McKellar of the Royal Saskatchewan Museum.

'Belone' is currently on display at the Hupoge Amber Museum and will travel to the Shanghai Museum of Natural History for a special exhibit between June 24th and the end of July 2017.

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U.S. NAVY GREEN-LIGHTS NEW AND IMPROVED SUPER HORNET

Jun 8, 2017Lara Seligman | Aerospace Daily & Defense Report
http://aviationweek.com/combat-aircraft/us-navy-green-lights-new-and-improved-super-hornet?NL=AW-05&Issue=AW-05_20170609_AW-05_514&sfvc4enews=42&cl=article_3&utm_rid=CPEN1000001477803&utm_campaign=10343&utm_medium=email&elq2=95d89a797aa649fba6968c7575d208b6

In a victory for Boeing's fighter shop, the U.S. Navy has opted to fund the company's upgraded F/A-18 Super Hornet "Block III" and plans to begin fielding the capability in fiscal 2019.

In a detailed blueprint laid out in the Navy's most recent budget request, the service revealed it plans to invest $264.9 million through fiscal 2022 in upgrading the Super Hornet fleet to Boeing's proposed Block III configuration. Starting in fiscal 2019, the 1990s-era F/A-18 E/Fs will get a series of modifications designed to keep the fleet relevant and effective against advanced threats well into the 21st century.

Boeing

The news is a boon to Boeing's defense arm, which last year was facing potential shutdown of its legacy fighter lines by 2020. But the recent approval of international sales to Kuwait and Qatar —as well as President Donald Trump's hints that a large new U.S. order of Super Hornets might be on the horizon—eased some of that pressure. Earlier this year, Leanne Caret, president and CEO of Boeing Defense, Space and Security (BDS), sounded much more upbeat about the company's fighter business.

"Our fighter business continues to be our core business," Caret said May 2 in a wide-ranging interview with Aviation Week editors at BDS headquarters.

The large new order of Super Hornets did not materialize, as Trump's fiscal 2018 budget request essentially sticks to the previous administration's plan for aviation procurement. But the Navy's decision to move forward with the Block III upgrade is a clear signal that Boeing's Super Hornet line has a future beyond the 2020s.

Perhaps just as telling, the Navy's budget request includes no funding at all for the Next Generation Fighter, the planned follow-on to the F/A-18 E/F, from fiscal 2018 through the five-year defense plan. In written testimony submitted to Congress June 7, top service officials said the Next Generation Air Dominance (NGAD) initiated in January 2016 would address the retirement of the Super Hornets and EA-18G in the late 2020s and early 2030s. However, while NGAD began as a joint program, it is now funded solely by the Air Force; an Air Force spokeswoman said to her knowledge the ongoing NGAD work does not support a future carrier-based aircraft.

Meanwhile, Boeing contends the Super Hornet will make up at least half of the carrier air wing through the 2040s, along with Lockheed Martin's F-35C. Dan Gillian, Boeing F/A-18 and EA-18 program manager, envisions a Block III Super Hornet working in tandem with the stealthy F-35C, the Growler's full-spectrum jammer and E-2D's early-warning capability to dominate the skies.

The upgrades detailed in the Navy's fiscal 2018 budget documents include "advanced network architecture" and "advanced cockpit displays," which Boeing says are designed to take advantage of the future carrier air wing's sophisticated sensor architecture. The Block III aircraft will have a large-area display for improved user interface, a more powerful computer called the Distributed Targeting Processor Network (DTPN), and a bigger data pipe for passing information known as Tactical Targeting Network Technology (TTNT), Gillian told Aviation Week in February. This advanced computing architecture ensures the Super Hornet, Growler and E-2D can talk to each other and pass critical threat data over the same network in combat.

In addition, the fiscal 2018 budget also funds Conformal Fuel Tanks (CFT), which Gillian says will extend range by 100-120 nm. Crucially, the CFTs are designed to replace the extra fuel tanks Super Hornets currently sling under the wing, reducing weight and drag and enabling additional payload.

Finally, the budget supports "advanced signature enhancements," which presumably have to do with the new aircraft's stealth capabilities. This could be achieved with new and improved low-observable coating, but Gillian stresses the Block III upgrade is not primarily focused on stealth. Block III has "a balanced approach to survivability, including electronic warfare and self-protection," he says.

Meanwhile, the ongoing development and integration of a long-range infrared sensor (IRST)—funded beginning in fiscal 2017—will allow the Block III aircraft to detect and track advanced threats from a distance.

Combined, these changes allow a fully loaded Block III Super Hornet to operate in conjunction with a stealthy F-35, providing air cover and greater magazine depth, Gillian says.

"You can have an F-35 in its very stealthy way doing a deep-strike mission with Super Hornet providing air superiority at that same range, or you can have Super Hornet carrying large standoff weapons that F-35 cannot carry, with F-35 providing some air cover," Gillian says. "You get very mission-flexible, so range is important."

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VIDEO: GREENLAND'S THINNING ICE

https://science.nasa.gov/science-news/sciencecasts/greenlands-thinning-ice

Video Length: 4:19

NASA's OMG and Operation IceBridge missions are investigating the thinning of Greenland's ice sheets from both above and below.
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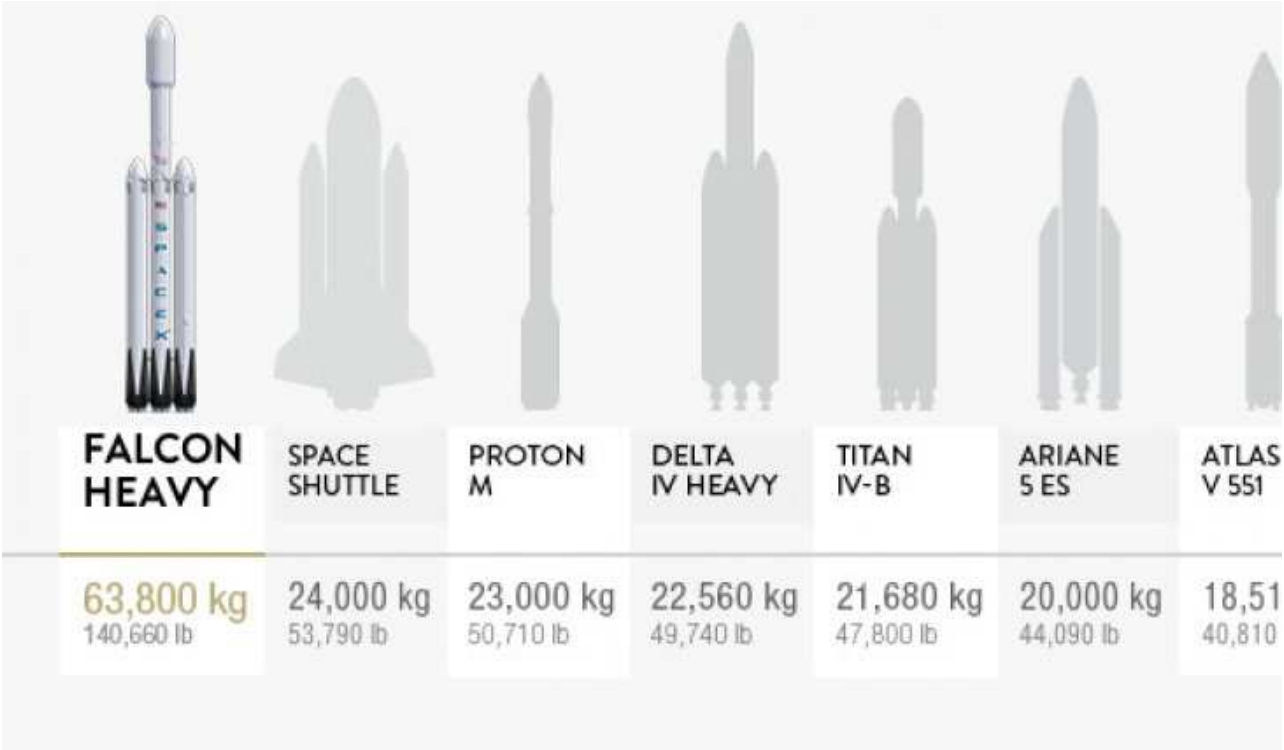
ELON MUSK TWEETS THAT FALCON HEAVY SHOULD LAUNCH IN FOUR MONTHS

brian wang | June 9, 2017
https://www.nextbigfuture.com/2017/06/elon-musk-tweets-that-falcon-heavy-should-launch-in-four-months.html



The Spacex Falcon Heavy will be the most powerful rocket in the world that will be currently flying. There have been more powerful rockets but they are no longer flying. The

Falcon heavy will be capable of launching 64 metric tons into Low Earth Orbit. This was relatively recent improvement from improved design and improved engines.

Only the Saturn V moon rocket, last flown in 1973, delivered more payload to orbit than Falcon Heavy. The Russian Energia rocket had the capacity to launch 100 tons into low earth but only had two launches which did not launch large payloads.

The Falcon Heavy has 27 first stage engines.

The Falcon Heavy will be used to launch two civilians on a lunar orbital mission Moon in 2018.

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

From: "Jim Woosley" Jimwoosley@aol.com
MOTHERING AND OPRESSION

New post on According To Hoyt

When Robert was very little, something happened to him that was "the worst thing ever." I don't remember what it was, and it's entirely possible I never knew. He was that small, that his explanation might have made no sense.

Lots of things were the worst thing ever at that age. He tripped and hurt himself. The water he was about to drink spilled down his front. He'd started falling asleep and come suddenly awake for no good reason he could figure.
He was crying, mouth open, in absolute grief. I remember I was in the bathroom, and this must be at the time we were potty training him, because there was a jar of candy on the toilet tank (something our friends found somewhere between appalling and amusing, but it worked. Pee in toilet, get piece of candy.) I sat on the tub (I think I was putting makeup on to go out) pulled him to me, hugged him, told him everything was all right, and gave him a piece of candy.

Like that, his crying went from unbridled grief to a big smile. And I remember thinking "Ah, son, if only I could do that for the rest of your life. If whatever problems face you could be banished by a hug and a piece of candy."
He's 25. He's gone through many things I couldn't console him for, including illness and breakups. Now he's very nervous about upcoming exams, and my hugging him and telling him everything will be all right doesn't clear it.

Younger son is worse at this sort of crisis, because he won't tell us he's in trouble, and sometimes he's not quite sure what is trouble, what things matter and how to fix them, and by the time we figure it out it's a much bigger mess than it should be.

I think there's an instinct in humans, particularly in women to "fix everything" for someone else. We want that magic bullet. We want to make everything right. But what actually

happens is that when you try to fix someone's every problem, nine times out of ten, you create another set of problems.

You see, people need to at least know what is a problem, know they need to be got out of them, and need to have some basic skills so they don't fall into them again.

It's very easy as a mother to insist on ironing their clothes forever, rather than letting them look like they slept out in the zoo with lions. But if you keep doing that, they'll never learn that there is even a problem with going out all rumpled. Clothes become that weird thing mom obsesses about, and neatness never correlates to how people respond to you.

The same with, for instance, making them eat breakfast in the morning. If you keep doing it, they'll never correlate it with how attentive they can be in class during the day, etc.

It's the hardest thing in the world as a mother. You have to let them fall on their faces, before they figure out what they're doing wrong and learn how not to fall. It's bad even with friends. When I was young and stupid, I'd just hand out rent money to friends who were about to be evicted, we'd buy computers for friends who needed to finish a novel, even when it was going to hurt us all month, we treated friends and other relatives as though they were our minor children, in other words.

Even in adults this doesn't work so well. You end up with several weird behaviors, the most common of this being the people who come back again and again -- we see this with several people who have become addicted to begging on facebook, it seems, and live on the verge of disaster but miraculously always keep going -- or what you sacrifice to provide doesn't get used at all (of three computers we gave people to finish novels, because they needed to sell, only one sold and that was 20 years later) or there is really no perceptible difference in people's circumstances.

And that's with private charity. When you bring in government and the idea you're entitled to never suffer hardship and never have to sweat towards anything because you were born in a time and place, then you're really encouraging behaviors that brought people into trouble in the first place. I think guaranteed minimum income (getting paid for drawing breath) is the sign of a serious pathology (besides never working when it's been tried, and leading to the infantilization of the population and perpetuation of dependency and ultimately greater poverty for all.)

It's an understandable impulse. Few of us like to see people suffer. But suffering, bit or small, is how humans learn. If you don't poke the fire you'll never know it burns.

The trick with children and with friends, and with strangers at large, is to try to ensure the finger doesn't go into the fire so hard it burns off the finger, but that it touches the fire enough to feel the burn.

Ultimately, no matter how much you want to protect people, at some point you realize not only you can't, but it's immoral for you to do so. You're interfering with the choices of adults, and their right to learn from those choices.

I'm not saying you shouldn't practice charity. I do. There are unexpected blows of fate, unexpected expenses, and unexpected disasters, in which those of us who believe in freedom help our friends because we can do it better than any government can.

I'm saying that we need to exert judgement over when how and whom we help. Even if everyone is crying and just experienced the worst thing ever, it's important to think through whether this is recurrent, whether it's a pattern of behavior, whether the person blundered ahead despite many, many warnings. Then you need to figure out whether there is some impairment that prevents people from doing what they need to do to not get in these situations. If there is, you can't make it worse by helping, and it's like helping a child. Someone has to.

But giving indiscriminately, without thinking and examining all circumstances carefully and keeping in mind "first do no harm" is as bad as never giving at all.

Which is why government is the worst instrument for charity. And why indiscriminate compassion turns into infantilization and discrimination.

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GUNS ARE NOT THE PROBLEM. PEOPLE ARE THE PROBLEM, INCLUDING PEOPLE WHO ARE DETERMINED TO PUSH GUN CONTROL LAWS.

http://www.gun-shots.net/guns-are-not-the-problem-people-are-the-problem-including-people-who-are-determined-to-push-gun-control-laws.shtml

If gun control zealots had any respect for facts, they would have discovered this long ago, because there have been too many factual studies over the years to leave any serious doubt about gun control laws being not merely futile but counterproductive.

Guns are not the problem. People are the problem including people who are determined to push gun control laws, either in ignorance of the facts or in defiance of the facts.

– Thomas Sowell
