

**TO: Generals: David L. Goldfein, Stephen W. Wilson, Maryanne Miller,
Brigadier General S. Clinton Hinote,
Major Generals: Christopher P. Azzano, Mark E. Smith,
Colonels: Nathan P. Diller, Timothy Stevens, Charles B. Cain, Peter White, Mathew C. Wenthe,
Dr. Jason E. Bartolomei, Dr. William E. Young, Scott McKeever
Lt-Cols: Rory Feely, Michael A. Haack, Thomas F. Meagher
& Major Dr. Chris Benson**

**Plus ALL Air Force/CAP Cadets who are ambitious to go VERICAL
(especially all female pilots who will change the world, via remote control piloting of second generation aircraft,
while honoring their “mentor,” pioneer Predator #3037 pilot “Ghengis”).**

FROM: Bud (Louis J.) Skriba: Director, Gigajoule Jug Consultants, (AKA “da godfather”); director@hydrogen-vtol.org.

SUBJECT: FINALLY, it’s time Air Force flies this beast, (weaponized second generation VTOL) straight UP.

CONTEXT: (the following sober bar-room rant is voiced by a 1967 Peace Corp Volunteer, (who provided successful humanitarian, mechanical/packaging engineering, marketing-multi-media, and industrial economic development services in Peru’s ultra-dry coastal deserts, Machu-Picchu Andes, and Amazon river flood basin, literally “fighting” face-to-face, CHINESE COMMUNIST terrorists {guerillas} who supported Che Guevara in the mountains near me).

CURRICULUM VITAE: I had two engineering degrees, (built 2 fiberglass sports cars while in grad school), received (on scholarship) an MBA-Marketing degree from Northwestern U./Kellogg Business school, and earned a 172 pilot’s license. More recently, I contributed aggressively to the NASA/VFS “Transformational Vertical Flight” meetings for the last 5 years. I followed that by working, every month, for years, with Johnny Doo in the NASA Working Group #4,, to help create an excellent NASA “white paper” on the “Public Service” apps for e-VTOLs. Hearing there, Col. Nathan Diller’s request for us to participate in USAFRL/Dayton’s/afwerx’s web-event, I signed on as an “exhibitor” (consultant with nothing to sell but my 50 years of strategic planning opinions/R&D experience, doing mostly paper-research on e-VTOLs fueled by Hydrogen). Dr. Roper’s AgilityPrime is a brilliant counter-attack to the Covid-19 Pandemic weapon. And: because of Dr. Roper’s invitation to “CHAT,” I prepared this introductory rant: titled:

USA never “won” a war!!

(“we” love the folks we know at USAFRL/Dayton, but hate a 50 year history of failed bureaucracies and politics)

- 1) **“Our” revolutionary war was really a “colonial war” between “high tech” England, and a politically failing royal France, which had significant “ownership” of a LOT of claimed colonial land in North America, together with now bankrupt Spain, which literally owned most of the “Continental America’s WEST COAST” (North and South). England’s Imperial technology leadership was based totally on their “Global Transportation” abilities to distribute their red-coated, gun-toting colony-controlling troops, via state-of-the-art super sailing gunships that needed masts made from BIG Lumber available near Boston: (England no longer has forests with appropriate timber trees). England LOST (to France and Spain) that international colonial war, due to the military incompetence of King George III, who did not have the personality talents (or sanity) to manage an entire military empire. In other words, England lost a colonial war. We did not “win” the revolting experience.**
- 2) **Our “CIVIL” war was again a desperate colonial war, between aggressively Industrialized England, and then/still technologically superior France. Their “intercontinental” fight was over which European country will benefit the most by having its Iron-based (steam: engines, ships, locomotives, rails) industries, and even more importantly wire communications (telegraph, noisy wires, and cyber-coding) specification standards to be soon used ALL OVER the easily predicted MASSIVE colonial American’s westward expansion that was destined to build out trillions in railroads, and telegraphs, and new cities filled with rebellious migrants from over-crowded Europe, all the way out to the WEST COAST (over all that useless, uninhabited land “owned” by a very few savage tribesmen). We Americans were the “prize” England and France, actually fought over.**

The SOUTH (aligned with France) wanted to control/dominate ITS route to the west coast, going the “Southern” route (via St. Louis to Lost Angels); but the then USA’s industrializing economic power (based on coal and iron mineral supplies to be extracted and transported by using steam engines) wanted to use the more cash fruitful northern route dependent on British technology input. The key issue was (and still remains): whose rail gauge and metal specifications, and power systems were going to be at the heart of the monopolistic transcontinental transportation/energy format in the “NEW WEST-WORLD?” Lincoln was a “circuit” riding lawyer for the RAILROAD monopolies, so he got elected based on a few great speeches.

THAT was the fight; not between North & South, and the “war” had nothing to do about freeing slaves. It was just about pathways, and networks to the industrialization of the NEWER WORLD, and the unbelievable railroad based transportation expansions, into ALL those territories, that simply must have, for VCs a LOT of resources like ‘49er GOLD, and before our “Civil” war. Keeping the USA as one political unit, coast to coast was in fact the central control point for our continental expansions, east and west, north and south. Simple!

The South did NOT lose the “Civil” war; it simply ran out of investment wealth (cash) and imported resources from FRANCE that, at that time, had its own problems so severe that it could no longer be an “empire.” The NORTH did not “win” the civil war; it simply stopped killing southern generals (who were obviously the absolute superior military strategic management force, made economically possible due to the plantation culture of slave-ownership’s creating (not consuming) the income-generating EXPORT items of: Cotton, Tobacco, Sugar) when President Lincoln was assassinated. THAT was a great, cheap (terrorist) way to “win” (stop?) a war, by assassinating a single person, who was then in absolute political/military “control.” In fact, the “civil war” is still running aggressively, TODAY, in the megacities of the North.

- 3) **THEN, we AGAIN got politically sucked into saving the failing global empire of England, which had to digest Europe’s political failures due to post-Napoleonic-Empire French control of Europe. England’s history of sickly -sex-based-royal-marriage-foundation for its MANY diplomatic international entanglements/commitments was the “apparent” cause of that BIG war. Actually, a “world war” was created primarily to sustain England’s global economic interests in Asia/India and the Middle East, and especially to anticipate and protect the potential “FUTURE” technology of oil which was at issue. YES, NEW ENERGY AND NEW TRANSPORTATION are AGAIN at the heart of causing “war” (and not by using new tech, just to “win” a war created by politicians).**

The now British owned Suez Canal “shipping lanes” in Egypt gave GLOBAL new-technology transportation control/access to England’s Widely Dispersed WORLD Empire). All that: “new-international-transportation tech,” was at the very heart of BRITISH GLOBAL military colonial commitments, which could no longer create victory. AKA, WE (USA) did not START WW1, yet, we were hired to “finish it” in the “win column” for them by drafting our 4 million young Americans, all indoctrinated to die heroically at the Western FRENCH FRONT.

WW1 was again launched as a “new technology” war, using break-through high speed terrestrial vehicles that were based on that new energy source called OIL, and that new miracle “material” steel technology used to build cannon as well as megacities. Worse, that “short war, to end all wars” proved to be the brain-death of England’s technological leadership since hard physics/science (real new technologies) was being best done initially by France, and even better, but SECRETLY, by GERMANY (thank you, Einstein and Hungarian refugees).

Flying British triplane fighters, for the French, over the “trench war” landscape, filled with rebellious and deserting soldiers drafted from the “colonies” of England and France, who were constantly dying from new CHEMICAL war technologies, did NOT win WW1 for us... ENGLAND and FRANCE, primarily, and cooperatively were the collective source of the real WW1 weapon of massive destruction. It was called the “SPANISH” flu.

EVERYBODY was dying, not by bombs from things that fly, but by Nano-dimensioned aerosol viral particles that killed soldiers on BOTH sides of the firing lines. All this was caused by the French and British use of 140,000 “paid” contract (slave) workers, from CHINA, hired to dig the trenches and carry cannon shells, who then Pandemic-inoculated the invincible war “machine” that ALREADY proved it could no longer be won by better military technology (machine guns mounted on Triplanes). In WW1, more people died (world-wide) by infection from Army and Navy troops RETURNING from WW1-not-yet-over, than were ever killed by German cannon fire. Worse were the millions upon millions of H1N1 flue victims in the colonial cities of Britain and France, all over the world. The WORLD WIDE TRANSPORTATION TECHNOLOGY of that Pandemic was, in fact, military passenger vehicles (ships, and then into big city subways). SOUND FAMILIAR, viral-epidemiologists?

- 4) **WW1 was NOT won by anyone, yet it created the political environment for bombastic economic expansion of the ‘20s, alcohol-fueled total depression of the ‘30s in both the USA and Germany. MORE technology had to be developed to “finally win” the WW2 war. AGAIN, WE (USA) did NOT win that war, either. With expensive aluminum, the Air Force was asked to bomb the hell out of Germany. General LeMay knew how to fly B-17s and firebomb Germany’s factory cities, then with B-29s, firebomb 16 square miles of Tokyo, (taking out 250k buildings and 0.5 million people), and even mine Japan’s sea lanes on Operation Starvation. AND that AGAIN did NOT win the war. WW2 was NOT won by the west. Adolph lost the war to the Russians, who sent millions of their “white” soldiers to their death, using up all of Germany’s bullets, making success of communism.**

- 5) **A very few, SECRET Physicist bomb makers gave Curtis a trillion dollar magic bullet (Fat Man). But that did NOT win the war, either. Japan did NOT need to be invaded with our using again millions of American soldiers who would no go to war in Asia. The Japanese would rather happily starve to death. Hiroshima proved nothing, other than you can't use Nukes. Neither LeMay nor General MacArthur could convince the new UN folks to let us use OUR new, (and exclusively invented), atomic weapons against the Korean communists who were being run by their Chinese Imperial warlords. Hello, Dr. Sakharov, and your "super 100 megaton bomb"**

The **NEWEST TECHNOLOGY** Air Force could NOT win the "war" (called a UN police action) against communism. Rather, LeMay figured out that WW3 could be ended in a few weeks, if he could drop 133 atomic bombs, on 70 Russian cities. But neither he, nor General MacArthur could use their really BIG bomb to win the Korean war by FLASH incinerating millions of Chinese at a time, sitting at the River. So we made thousands of useless ICBMs and dozens of Nuke powered subs and Nuke powered Navy Aircraft Carriers, and still could not win a war: **DEFINITELY**. Peace through strength, useless strength, is political word play and not military success.

- 6) **THEN, with jet engines, literally glued onto/into aluminum skinned B-52s, we could take out anybody, anywhere, anytime under LeMay's SAC 24/365 constant-readiness, always-flying bombers. Yet, we lost more atomic bombs by accidents than by setting them off over any enemy. BUT Curtis could not drop, even just a few big ones, on Cuba that already had nuke-tipped rockets pointing at us, at the ready. Did Kennedy really have to buy back his failed CIA operatives, rather than successfully assassinate Castro? Fidel figured it out, and got back at Jack, by using Jack's own mafiosi techniques. EVERYONE in the Air Force knows that we have lost more pilots from: new aircraft development, flight testing, world-wide transporting, and intense, nearly constant TRAINING, than we ever did from real enemy anti-aircraft fire in WW2. Oh how beautiful it is, to be able to fly those now plastic birds, faster than sound, against no enemy, to never win a war. You all know that the F-35 series is the first TRILLION dollar weapon system that NO service really likes.**
- 7) **Are we there yet General LeMay? Cuba is STILL a communist swamp, and now it's dragging along Venezuela, paid for by a 1.4 billion slave communist military dictatorship, whose languages we can't understand or speak.**
- 8) **And when that failed colony of France/England in Vietnam went totally Commie, we bombed the hell out of anything, all the time, everywhere that did not move in Vietnam/Cambodia/Laos etc. . The Air Force did NOT win that war either. Vietnam is STILL, even MORE, communist. Worse, the military lost the American public support, as the potential soldier/students, turned on, dropped out, and tuned in, to the TV-protestations against the war in Nam. Dropping heavy, non-nuclear explosives from 40K, MAY get 1 percent of the bombs hitting the target exactly, on a lucky day. So much for pre-laser-guided ammunition. GREAT supersonic flying technologies... BUT....**
- 9) **But we are not finished, with failing to WIN any war. We then moved on to spending 6 trillion dollars to "fight" in Afghanistan, then Kuwait, then Iraq, then Syria, and anything, or everything, built on sand. Our smart bombs can create millions of refugees (with total hatred for us), who then invade our "allied" Europe. So, who is today building ICBMs, and "secretly" nukes? Can you spell RADICAL Islamists? Thank you President Obama, the Imam loves you, and our money, there in Iran. Will the V-22 be used to kill this new "prophet"?**

10) BUT all that is not now the real “enemy.” It is China, that will soon build most of the world’s electric cars, and all of the e-VTOLs, and own most of the anti-viral medicinal factories, and most of the world traded ULTRA-high-tech telecommunication assets, used to identify and control EVERYONE. You’ve got to do that, when you have to feed Kentucky Fried Chicken to 1.5 billion slaves. AND, on our side, are we going to use up all those super-fast, almost invisible aircraft like F-35, or many, many thousands of Marine-carrying V-22s over Wuhan? To fight millions of them off the shores and on the beaches of Taiwan or Hong Kong? Will their ICBM capable rockets take out our military satellite communication systems, that are based on OUR military centric GPS thinking? If so, how are we going to fly the B-2 or hyper-sonic cruise capable nuclear missiles, to some target, somewhere, ANYWHERE, in Asia that is totally controlled by Beijing?

SO, what does propose?

THE KEY issue here for us, folks (a round of cocktails, for everyone, on us) is that the historic, nearly religious military dogma of the Air Force is to have a few, extremely smart Colonels, who have a near impossible job for less than two years (until getting promoted), managed mostly by politicians (or industry lobbyists) who have only a 4, maybe 6, year attention-span, yet are totally demanding of product production in their states, on weapon systems that are designed by companies with, at most, a 10 year contract viability, all being driven by mission definitions created by generals who have proven to be smart enough to figure out EXACTLY how to fight the last war that they lost.

Today, we have cellphones already smarter than almost anything that the Air Force is still flying. AND that came from ONE guy (Steve Jobs, who believed more in oriental philosophies than in the USA or its Constitution). Or now what can we say about electrified/rocket-launching/Teslated Elon Musk who has proven himself to be more “Chinese” than most Americans of Chinese genealogy? And let’s not even mention Jeff Bezos who has made millions of Chinese millionaires.

This is the time for the Air Force Col. Visioneers to understand and/or invent a radically new mission/dogma for the entire Air Force. The mission is NOT to again fail to win a war that was/will be already started by the politicians and pathological enemies. It is time to design an aggressive attack strategy, to win and own the PEACE, before any war-like attitude is considered.

The future of “war” is obviously one of cyber controls and Terrorist Attacks. It is a WAR here, inside OUR LAND, NOW. IT is going to come to us, over our borders, by tourists flying 787s, green card carrying technological genii getting PhDs at our best universities, undocumented immigrants crawling from hundreds of countries that do not like us, and religiously devout terrorists. Not to mention, internet based “virus” data scanners/scammers, and REAL BIOLOGICAL PANDEMICS together with environmental climate caused tragedies, and the intellectual and economic depression of our industries that has already begun this year. WE ARE AT WAR. The President told me so. The man has “cajones.”

THE WAR IS HERE. NOW! IT’S TIME TO FIGHT, THEN THINK, THEN FLY. (or shoot, then aim, then lock and load)

The next 100 years will be about abandoning any hope that mega-cities are the right way to live. RADICAL energy concepts now possible, and RADICAL transportation devices on the drawing boards, are at the heart of radical demographic change for ALL of us. Win with THAT Vision to WIN the PEACE, BEFORE any war can be lost AGAIN.

So... what does all that mean for the best brains in the Air Force that this old geezer is ranting to? Salud, more beer.

- 1) **The future of important FUTURE Air Force flight is to be: in the air BEFORE the shit hits the window. That is: the way to deal with vertical flying is to have literally millions of aircraft at the ready, already flying, or able to take off digitally in nano-seconds under AIR FORCE COMMAND. AND THAT means the aircraft (communication node) must be practical for everyday man and woman, and made by the millions. THIS FUTURE CRAFT HAS TO BE FOR PEACEFUL uses FIRST, not war. Agility Primers understand that already. Congrats Col Diller!**

The aircraft has to be a pickup-TRUCK capacity vehicle, to haul any kind of shit around, be that for agriculture, or construction, or recreation, or MOST importantly, “first responder” stuff in PUBLIC SERVICE applications. THAT craft has to ultimately cost less than approximately the current price of quality pickup trucks, plus luxury cars. (under \$100,000). It will NEVER be owned by the Air Force, nor the fire department, nor the police department, but by a few million PATRIOTIC “middle-classers” who can own TWO HOMES, AND TWO VEHICLES, (hence the “need” for an e-VTOL). It will be made available to CAP or National Guard, or other CIVIL organizations, during emergencies, via well defined rules of expropriation (confiscation), aka RENTAL, in a manner somewhat akin to U-HAUL trailers. The government agency pays the owner AFTER it is requested (commandeered) as a loaner in a PUBLIC EMERGENCY. The “owner/investor” gets a mortgage, and title, and aircraft training, and certifications based on the craft’s design specifications that clearly indicate it can, and must also, be used in emergencies, (with some form of compensation guarantees by the Feds). That could even be done with its “owner” acting as “pilot” for hire. (think Uberishly, or how Washington won in 1774) THAT puts the BIG risks on the insurance companies, and leasing companies, and private individuals, and NOT on the Air Force. In the eyes of the owner, it is an FAA license FREE, experimentalish ultra-light that works.

- 2) **MORE important than who builds it, owns it, leases it, or offers it in some form of exchange to help against a serious PUBLIC (or national defense) “problem,” must be the fact that it must be defined (here) as a hyper-hybrid, first and foremost. Safety can NOT be the first/only concern. For the next 30-50 years, it should be re-defined as “EXPERIMENTAL-HEAVY-UP.” And capable of use anywhere, anytime, by anyone, it has to be based on a fuel that can be made anywhere there is sunlight or wind. It has to store and use LOTS of hydrogen as a fuel, to make electricity, anywhere, on demand, be that in the Canadian woods, or floating on some recreational lake water in Louisiana, or just after a San Jose earthquake, or during a Hollywood fire, or before a Florida hurricane flood, or after a tornado that eats small Midwest towns. In Air Force General’s eyes, the craft is an “energy conversion device”, more than a transportation event. It is a super-DIGITAL network node.**

THE CRAFT MUST BE SEEN REALISTICALLY AS A FLYING FUEL TANK, with the fuel being made from water, with breakthrough equipment inside that must re-convert a motor to a generator, a fuel cell to an electrolyzer, a compressor that converts to a cryo-cooler. THE generated power source during flying must be built on a cascade of electrical energy: from a fuel cell, to a battery, then to an ultra-capacitor, then to a cold Super-conducting Magnet Energy Storage (SMES) structure, that is also a cryogenic hydrogen fuel tank, that is also part of a super-conducting motor/generator, that is also a structural “air-frame” part of the aircraft. All this must be done, because H2 can now be stored easily and cheaply, if kept cold, and under modest pressures, on a properly formulated physical adsorber material, inside the tank, that is as light as an aerogel foam. THAT tank stuff is called a “Cryogenic Flux Capacitor” that is already invented by NASA.

- 3) So, the vehicle is designed to carry so much hydrogen fuel it can be made to stay in the air for tens of hours or hopefully several days. WHY? Because the REAL impact of Vertical Flight is NOT just to get off the ground without an airport, but to lift stuff into the air for long periods of time... THAT was the breakthrough that Abe Karem's Predator gave the CIA. For General Goldfein, you get it up there as a futuristic CELLPHONE-like, super bandwidth, totally secure network tower, and forget about flying it off to the next big city. With LOTS of fuel, and the generated electricity being used to rather continuously recharge any batteries, or ultra-capacitors, or SMES, the craft must be designed to HOVER SILENTLY, rather than "Cruise" long distances, at high speeds from launch to recovery at Air Force bases. THAT IS THE REVOLUTION. THIS IS TO BE YOUR BEST WEAPON.
- 4) The craft has to be made in quick assembly of parts... assembled anywhere in the world, probably where a small airport is already, and still running, without a profit. THINK LOUD and CLEAR about EAA 2030.

The craft must have three basic technologies. ONE is the unique tanking, that can hold H2, and is continuously manufactured, much like sausage, (made from very special materials), and hence cheaply, and importantly based on PROPRIETARY materials that ONLY the Air Force understands as trade secrets, and owns and gratuitously, but selectively, "shares" with the rest of the aviation industry. Everybody loves "free" stuff. Don't get it yet? What is our only official organization that makes quality Plutonium, or the Lithium isotopes and triggers? Home-Depot? Only Hanford. IT IS TIME FOR THE USAFRL to own a factory making a few, essential proprietary materials, given out (not sold) to USAFRL selected builders. THAT is like the history for the great, Big Safari, CIA spook stuff, out of Dayton. General Atomics did NOT make antennae, but put them into the Predator. CONTROL (security for the rest of this century) means Air Force has to own the IP and tooling, processing and SOFTWARE, to make unique materials, needed to make this concept fly.

I can tell you what they are! Do you want another drink? Am I paying, are you going to pick up the tip?

The second is the fuel cell and motor technology that must be made exclusively by 3D printing techniques. Permitting "on-demand" part replacement or "on-demand" LONG RANGE, CONTINUOUS, "developmental" modifications for specific mission needs. Fantastic. ANYWHERE in the world, the fuel cell and motor 3D-tech could be "managed" by blue-collar cheap labor running yet-to-be invented Additive Manufacturing tools (and software running exclusively at a secure USAF facility) that are to be leased to the aircraft's licensed builder. Don't understand that? Think about how McDonalds makes hot lunches for your kids, on demand, in technologically unique (ultra-efficient and cheap) kitchens, leased to a private investor/franchisee, from the company that strategically owns the land at that soon-to-be popular intersection. Location, location, location. Anybody can burn a burger... ONLY Mac can make trillions of them, world-wide, AND A PROFIT.

This is the most important breakthrough. 3D printing of Super-conducting motors has been already described (proposed, but he has no money) to Dr. Timothy Haugan at USAFRL-Dayton. Check it out.

The third technological aspect is that the vehicle is, IN FACT, "built" by the end user, much like experimental ultra-light craft parts are stored in a garage/hangar and assembled when it's time to fly (no wind). The tanks and all parts must be shippable in 40 foot long cargo trailers, and the e-VTOL can be set up to be flyable in hours, not months. THAT IS, this "do-it-yourself" kit mentality of a crucial final step of "low cost manufacture" by the "pilot/owner," puts ALL the technological risks and burdens on the pilot/owner rather than on some company like Boeing, or the Army-Air-Force, OR even the FAA.

Lastly, (and most brilliantly) the craft must have an aerodynamic shape/mode to ALSO be able to “fly” like a windmill/aerostat (tethered-kite) at 400-ft. altitude, to capture enough wind/solar energy to efficiently convert water into cryogenically cold hydrogen and oxygen. NOBODY IS PROPOSING THAT APPROACH. GOT IT; GENERAL???? How important is THAT for a future e-VTOL weapon system, when the war-thinking shit hits some other General’s windscreen? YOUR VTOL PREDATOR makes its own fuel to fly silently for days!

- 5) To be useful for any “first responder” in public service applications/missions, the key innovation must be that the craft is a two body craft, one upper body that is purely the lifting structure (single ducted fan) for both long, quiet, continuous hover and/or heavy lifting, and a lower body: the “payload” or passenger cabin, or battery pack, or electric-jet-thruster for pulling the two body structure into FORWARD motion to re-deploy, etc.. THAT two body thinking MUST be done to keep any down wash to be quiet, very slow and far away from the lower body that must be guided (remotely flown in 3D space from a cellphone like interface) by the public service operator. I tried to get John Piasecki to hire me to do this, but he already had other brilliant ideas.

THE UPPER BODY does NOT land, (almost never, except for maintenance and long term storage).

This lower body is the “heavy” part of the vehicle and acts partly like an anchor or grounding device to keep the upper lifting body from blowing away in a light wind. The upper body has the radically designed lift fan technology that runs its single LARGE rim-drive ducted turbine slowly, and therefore silently, with high volume mass (disk) flows, but near zero speed down wash (at the lower body), and is the remote place that all that “dangerous” hydrogen is kept cold and under pressure, and immediately next to the fuel cell which is immediately next to unique motor structures. If any of this goes: BOOM!!! That should happen 200 feet away, overhead. Safely... Hydrogen is safer than JP-4. It detonates, and does not burn for hours generating massive debilitating black smoke clouds. When it leaks, it leaks UP, rises away from ignition sources, and dilutes (or burns) fast, INVISIBLY, for special-ops secrecy issues, and does other stuff that NASA Kennedy knows about. H2 got us to the MOON and more importantly BACK... It is time to put it in E-VTOLs. H2 is not to make cold electric 737s work in 10 years, to be sold to the Chinese military. Or to be used in all those Toyota Mirais.

- 6) This craft’s overall design is based on its instant use at expected, but unpredicted, times of flight. Like an ICBM, it sits ready and tanked up (since it is really a bunch of unbelievably light insulated flying tanks for liquid: hydrogen, oxygen and nitrogen.) BUT, when launched vertically, its main job is to either hover nearly indefinitely, or lift random external pay loads (attached to the lower cargo body). So, most of the time, its energy processing guts can be used as a factory for generating liquid hydrogen or oxygen or nitrogen for any of a thousand new uses both in Public Service use (to fight fires etc) and/or military weapon imaging systems.

And it uses those cold energy sources to also “on demand” generate electricity for use by other Public Service needs (to cut down trees, run the fireman’s jaws of life, etc.). MOST important of all that will be the use of its communication and navigation links and data configurations that can make it as an equivalent (but superior) of the 5G cellphone tower, but flying 4,000 feet in the air, for nearly days, at the same hover location, to permit advanced optical based, highly-secure, “FLOCK-FLYING” networking at trillions of bits/sec in multiple directions. Try that with a Predator. Its use of, then capable, satellite communications was terribly poor.

THAT, General Goldfein, is the military breakthrough. It can be a CHEAP, predator like, vehicle to be launched and much more importantly LANDED anywhere. AND, wherever it lands, with a little “stolen” water (or from captured rains that prevent missions), and a lot of wind/sun, it is the source of creating more fuel on demand.

YES, admittedly it will take 100 times the time, (to generate, compress, and refrigerate water into cryo cold hydrogen and oxygen), than it will have as available hovering flight times, (500 hrs to make the fuel for 5 hours of impossible flight characteristics, ANYWHERE). But that is HIGHLY parallel to the REAL realities of public service events and military operations. The key here is getting rid of the “logistic supply” issues for petroleum fuels and/or electric generation from the damaged or more typically unavailable ground conditions in a fight. AND, as with the history of all things military... if ONE weapon works, then you use LOTS of them. That is especially relevant to cheap, light, quiet, e-VTOLs that can fly autonomously in flocks, all talking to each other like geese, one knowing where to go, the others knowing when to eat. The smartest of them can be talking long range to other Air Force conventional aircraft that need: lots of jet-fuel, thick concrete runways to land safely, friendly allies who want us in their country, and are willing to pay us to be ther. These are the future of: 6 or 7G digital networking for PUBLIC SERVICE... World wide, no highways required. bye bye China.

Are we cooking yet?



I am the old dude, on the left, in a white smock, sitting next to NASA’s visionary Mark Moore (now UBER), at the FIRST VFS Transformational Vertical Flight seminar in 2014. Important VTOL Industry friends at the table are folks like: (LtoR) Francesco Giannini (Aurora/Boeing NeXt), Dan Newman (Boeing), Joeben Bevirt (Joby), John Piasecki (of Piasecki), Mike Hirschberg (AHS/VFS-Vertiflite), and a room full of very ambitious others trying to giving birth to the electric VTOL commercial business application. Don’t remember if there were any Air Force leaders attending. A few were from DoD, Army, Navy, DARPA, etc, with a TON of NASA types.



W = Weaponized vehicle, to win the PEACE, not lose the “war”

e .2.0 =

Second generation of electric propulsion unique to new vtol flight modes: for totally electric hyper-hybrid power systems: based on intense integration of cold hydrogen fuel stored under modest pressures, feeding radical fuel cell designs unique for aircraft safety, all supported by serial/parallel: next gen batteries, PLUS “ultra-capacitors,” PLUS SMES (Superconducting Magnetic Storage solenoids), plus High temperature (77K) super-conducting power cables, motors, and most importantly generators.

THAT IS: FLY SOMETHING, WITH EVERYTHING REALLY COLD.

HAUL=

The purpose of going VTOL is NOT to launch from big city electric powered vertiports, but to land ANYWHERE, in order to refuel, using the crafts own built-in “reversible” technologies, to help generate its own HYDROGEN fuel, ALL this done to cross the technological “valley of death” due to tech problems based on the “logistics” of fuel, electric power availability, and field maintenance skills.

More importantly, the craft is to have unbelievable HOVER fight time capacities, potentially at very high altitudes (based on an ability to carry liquid H₂, O₂, N₂) for VERY LONG periods of time, at the exactly same location (not flying around in circles like that used with conventional high aspect ratio glider-wings, like the first Predators had to do with extreme difficulty, LANDING at “safe” airports). THAT requires breakthrough “lift-fan” technology. The craft not only has the technology to make liquid H₂ from water and wind/solar power inputs when not “on mission,” but to store relatively massive amounts of these liquefied gases to permit many hours initially, and eventually days, in silent hover. THIS IS REVOLUTIONARY... sorry pilots, no need to sit up there for days (like in a B-36), (or on Drone pilot seats) waiting for exactly the right chance to drop some ordinance. That is, the vehicle is part Predator (laser designator) and part 6G optical line-of-sight flock-networking based communications “tower” between these craft and existing Air Force platforms, also acting like a STATIONARY extremely low-altitude-satellite-global supporting communications/imaging system during impossible environmental conditions (under the clouds, near to hurricanes, above/or below wildfire smoke, on top of rock-throwing rioters, etc.) The craft is shipped near to a “battlefield” in 40’ containers, quickly assembled, and fueled locally. So it does not need to fly (cruise) long distances (with super thin wings), to get to the point of Public Service type need, and back to recharge/refuel where it is safe for military control operations.

UP=

The key benefit of this radical aircraft design/mission function is not engineered to keep some General happy, by his first-to-“test” fly next year, in now painfully small cockpit bucket seats, with deafening jet-turbine noise, next to his ears, all because he is VERY well known to “fly:” higher, farther, faster, for longer flight times, with heavier payloads than the enemy can.

All that got him promoted to the point of reading this re-visionary Air Force policy crap from an unknown.

It is time for the AIR FORCE to learn how to fly straight UP, and stay there. To do that the quantity of fuel, and power/thrust systems must be radically different. WITH that capability, the craft can ALSO be used, under expected new global policy Presidential demands, to help this country ALSO deal with probable total disasters. The craft will have the lifting energies to haul rather heavy loads (1 ton is perfect to start and stick with), to pull trees off impassible roads, lift cellphone towers back to their vertical position, to pull a flooded car out of the flooded river to safe dry land, to lay down a ton of very high explosive (linear) cables to blow a “FIRE BREAK” line faster, cheaper and SAFER than anything in wildfire fighting history, to hold silently in hover for hours, with near-ZERO downwash problems, over hundreds of refugee women and children running away from expected disasters, due to: bombings, riots, terrorist attacks, floods, famine, earthquakes, tsunamis, fallen bridges, failed nuclear power plants, downed high tension power cables, loss of water pressure for water to drink, loss of working sewage systems that generate cholera, loss of places to sleep in the snowdrifts, or to hide against sand-storms, or chemical factory disasters.

Since the craft is designed to sit down anywhere, and then use solar or wind to create more fuel for its fuel cell, it can become an autonomous (if necessary) self-delivering electric power generating device, to help heroic FIRST RESPONDERS, to deal with medical emergencies, food preparation, dead-body refrigeration, recharging other electric terrestrial vehicles. THAT IS, turn to the AIRFORCE to deliver on the new tools to deal with total disasters that are certain to come to anywhere in the world.

ALL that is going to happen FAR AWAY from most Air Force bases that have sufficient fuel to keep its prime directive vehicles in the air. THIS IS NEW SPACE, INNER-INTRA SPACE... USA GREAT SPACE...

Got it, Mr. President?