

HORIZONS

A publication of the Massachusetts Air and Space Museum

The Massachusetts Air and Space Museum inspires new generations to explore, experience, and pursue interests and opportunities in science and technology

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Massachusetts Air and Space Museum 200 Hanscom Drive Bedford, MA 01730 www.massairspace.org

Massachusetts Air & Space Museum Will Soon Take Wing

The Massachusetts Air and Space Museum (MASM) is about to open its doors on a brick-and-mortar facility for the first time. Barnstable Municipal Airport's (BYA) new terminal building will soon house museum exhibits and historical artifacts.

"There will be both static and interactive exhibits and displays where visitors can learn about the aviation-rich heritage of the Bay State," said Robert Segal, President of MASM. "Our efforts to get this facility up and running in the near future have been helped greatly by the generous contribution from long-time museum advocate Ann Bridge Baddour. With this money we'll be able to proceed with design and installation of the exhibits."

The area that will be dedicated to the museum is



some 10,000 square feet of floor space located throughout the main terminal. People coming and going on commercial flights will be able to spend their waiting time acquainting themselves with the prominent role Massachusetts has played in both the fields of aviation and space exploration. Even those taking advantage of the wonderful general aviation facilities



at BYA can drop in to glimpse the portion of the museum's collection that will be on display.

While only a small segment of the museum's complete collection of artifacts will be displayed at the facility, it will undergo periodic changes and upgrades to keep the exhibits fresh and interesting. The exhibits there will be augmented by the on-line museum that is available on the MASM website:

Click for On-line Exhibits

While the new museum facility at Barnstable Municipal Airport is a substantial first-step, it is far from the ultimate museum that the board of directors envisions. In time, a dedicated museum building, replete with exhibit spaces, classrooms, library, a giftshop, and an apron with access to an active airport ramp, where aircraft of all sizes and vintages can be displayed, is planned. Since that vision remains in the future, MASM is excited to be starting this Hyanis Airport Museumspace.

Regardless of where the ultimate Bay State museum ends up, MASM will have a hard time finding a more accommodating facility. Airport management at BYA has been most welcoming, and pleased that it will become one of the destination stops on the Cape Cod museum trail. The communities in and around the airport are also looking forward to the time when



the MASM museum will add a new and exciting destination on the Cape .

The airport's modern terminal building, it's connectivity to ground transportation, rail access, and water conveyances, makes it the ideal place to begin either a long weekend or a summer vacation. If you fly in, the fixed-base-operators can accommodate the needs of any general aviation or commercial aircraft. The airport management offers refueling, deicing, flight operations support, weather, and amenities for pilots. There are also vendors who offer mechanical and parts support, and Rectrix offers heated hangar space and plush pilot and passenger lounges:

BYA FBO Info

Watch for our next issue for opening dates and directions to your brand-new Massachusetts Air and Space Museum! 🗺️

How We Spent Our Christmas Vacation

by Keith Young

Figuring out what to give as a Christmas present can be tough after being together for almost seventeen years. So, this year Barbara and I thought we'd give ourselves a present and go someplace warm. We looked at the destinations in the Caribbean such as the American Virgin Islands, the British Virgin Islands and Aruba, but the cost was outside of what we wanted to spend for a quick warmup getaway. The cost also eliminated places such as the south of France. Time was getting short and we hadn't come up with any place that sounded fun. So, I suggested Florida. I figured it was a reach, as the Sunshine State is not on our top 20 list of places to go; knowing that Disney, Universal Studios nor Sea World just don't rock our socks. Don't even get me started on Miami. Barbara came back with the Kennedy Space Center as a suggestion. That fired my engines and neither of us had ever been there. It was easy to get to, relatively inexpensive for airfare, and we would be able to be there in advance of the winter school break (minimal kids). So, we decided that was the place to go.

After a short stint using the Google thing, we had identified the best air fares, located a hotel, reserved a rental car and found some possible restaurants. The next step in the process was to figure out what was going on at the Kennedy Space Center Visitor Complex (KSCVC) while we were going to be there.

According to their website, The KSCVC opened in the summer of 1967 after several years of tours being available to the public, first by private automobile and then by bus. It continued to grow and expand as NASA first approached the goal of sending humans to the moon, then by creating the shuttle program. By



1995, with no federal funding for support, the museum had stagnated and began to fall into disrepair. That year, NASA awarded a new concessioner the responsibility of maintenance, upkeep and growth of the visitor complex. Funds began to come from private investors and visitors. By 1997, the Apollo/Saturn V Visitor Center opened and there was renewed interest in the KSCVC as tourist destination.

A year later, two bus tours were added to allow visitors to see the launch sites. By this time, the space shuttle program was more than 15 years old and had been operating with relative success. Over the next 20 years, the visitor center continued its growth, adding more facilities, including an IMAX theatre, a conference center, an astronaut hall of fame, and expansion of the Space Shop. This allowed the Space Shop to boast being the largest store in the world focused on space gifts and memorabilia. By 2007, the offerings to the public included the Space Shuttle Launch Experience, where one can experience what a real launch feels like through the use of a simulator. In 2012, the complex was entrusted with the Space Shuttle Atlantis. During that time, the center also expanded its programming to include the opportunity to meet with and even have lunch or dinner with astronauts.

In addition to all of the interesting history that the KSCVC has to offer, it also boasts being the closest that the public can get to viewing a launch of a rocket into space from Cape Canaveral. There are several options available in which to see a lift-off. The first is from the Main Center area and is included with the general admission price. The Main Center is located about 7 miles away from the launch area. The next option is the Apollo/Saturn V Center, which is situated between 5 to 8 miles away depending on the launch pad involved. This has an additional cost of \$20.00

per person. Next is the NASA Causeway which will get you from 3 to 5 miles away for an additional cost of \$39/pp. Lastly, is the LC-39 Gantry Viewing site, 2-5 miles from the pads and the closest anyone can get without a high-level security clearance. This will set you back just shy of \$50.00, but may include snacks/refreshments and a *free* t-shirt. All locations have bleacher-style seating and restrooms available, but not all locations are available for all launches.

This information was relevant because on the day we were planning to be there, Tuesday, December 18, 2018, SpaceX had scheduled to launch the GPS III-SV01 satellite. Upon discovering that a launch was going to coincide with our visit, I would like to say it was an easy choice to decide to get tickets. The scheduled lift-off time was just after 9:00 AM, with a window of about 35 minutes. The parking lot opened at 6:00 AM and the visitor gates opened at 6:30. We were staying approximately one hour away in Melbourne Beach. Reading online about launch days, it recommended getting on site early. That meant getting up by 4:30 AM to be able to leave by 5:00. After bit of a discussion, we resolved that we might never have the chance again, so we decided to go for it, despite it being the first day of our mini-vacation. We could always sleep in the next day.

Tickets for the launch do not go on sale until a final flight confirmation is made, but we had already purchased our multi-day entrance tickets to get into the center complex. Having a day pass is a requirement in addition to the additional cost of the premium viewing location tickets. But, we had already planned to spend two days there anyhow. I had signed up for notifications to my email so that I could get an early jump on ticket purchase. I periodically monitored the site to see when the "Buy Tickets" link might become activated. I checked the website on Wednesday, Thursday and Friday with no change in status. Saturday, December 15th, I was busy getting ready for Christmas and our trip, and I didn't have a chance to look online. On Sunday morning, Barbara checked her email to discover a notice had been sent out Friday night that the tickets were then available. I scrambled to get online only to discover that all of the

LC-39 Gantry seats were sold. I disappointedly ordered seats for the Apollo/Saturn V viewing area, as the Causeway viewing area was not available for this launch. I consoled myself with the knowledge that we were going to see a rocket launched into space; an item that was definitely on my bucket list.

We arrived in Orlando late in the morning of Monday, December 17th, having gotten up at 4:25 AM to catch 5:15 Logan Express. Knowing that we couldn't check in to the hotel until after 3:00 PM, and being concerned about trying to find the right exit in the dark the next morning, we decided to head to the Space Center directly from the airport to get a lay of the land, and I'm glad that we did.

Upon arriving, I convinced the parking attendant that we were only there to check the place out, showing him our tickets for the next day. He allowed us to park without charging us the \$10.00 parking fee. The [KSCVC](#) had that very day opened its new entrance, so we were able to get a better understanding of what to expect the following morning. After grabbing a couple of hotdogs from the Rocket Fuel Food Truck outside the entrance gates, we headed south to check into our hotel.

4:30 AM comes incredibly early, especially after having awakened early the previous morning. We were out of the hotel by 5:00 AM with a planned to stop at a fast food place for coffee and a quick on-the-go breakfast. I was pretty sure that their website said they opened at 5:00, but the manager waved me away saying that they didn't open for another twenty minutes. Disappointed, I pulled back onto the road to drive the remaining fifty minutes to the KSCVC parking area, confident that we'd arrive just before 6:00 AM. I don't mind driving and early mornings don't bother me much either, so long as I have two key factors taken care of: coffee and protein. That morning, I'd had neither. As we approached the one-and-a-half-mile bridge spanning the Indian River, the fog low-



Lunar Lander



Northrop T-38 Talon

ered visibility to about a quarter of a mile. Now, I'm not a big fan of bridges on a good day. Crossing over the water at 50 MPH, and only being able to see about three car lengths ahead in the dark and fog, in an unfamiliar area, with no breakfast or caffeine, tends to make me crabby. It should be noted that Barbara is a saint! After finding the entrance to the highway and heading north, we were looking to arrive just after 6:00 AM at the parking area.

It's about four and a half miles from the exit off route 95 to the bridge that crosses the Indian River, and then about seven miles from the western side of the bridge to the entrance of the Kennedy Space Center Visitor Complex parking area. After travelling about four miles, the traffic came to an abrupt halt. My worst concern was being played out. A quick calculation in my head told me that seven-plus miles at approximately five miles-per-hour meant we'd be lucky if we reached the space center by 7:30 AM. Buses for the Apollo/Saturn V center were scheduled to start boarding at 7:15, so I figured we were doomed to not get a good seat. Those assumptions were wrong. The backup was only about a half mile long, and we were then stopped for a security check. What we didn't know at the time was that Vice President Pence was also going to be on hand to watch the launch. After a quick look at our tickets, we were waved through and arrived at the entrance about 6:10 AM

Finding a parking spot in the second row from the front, Barbara got in line and I went to the Rocket Fuel Food Truck and got a cup of coffee and a soft pretzel. When I caught up with her, she was chatting with a couple of old hands at the rocket-launch sce-

nario; one from Ocala and the other had driven down from Atlanta. They had Gantry tickets, but assured us that we'd not be disappointed at the Saturn V Center. The gates opened promptly at 6:30 and we went off to find our bus, managing to be the first couple to board.

Once we arrived, we made our way through the center and out to the bleachers, settling down for the wait until launch time, just over an hour from our arrival. The area consisted of three sets of bleachers of about 15 rows. We sat at the top row, as recommended by the two gentlemen we'd met earlier. To our left was a very large screen television; below it, was the countdown clock. On our right was a reserved section for Lockheed-Martin employees who had participated in the building of the satellite. The music playing from the speakers was vintage 1960's; *Hang on Sloopy*, *Feelin' Groovy*, *Johnny B. Goode*. I think they had all the songs written by Art Garfunkel.

At T-minus sixty minutes, a representative from NASA/KSCVC came out to give us information about the launch we were going to see. This was a SpaceX Falcon 9 rocket with 1.7 million pounds of thrust. It was a two-stage rocket with the first stage being reusable. The launch, however would not include a recovery of the first stage.

The fuel used to propel the rocket into orbit was a combination of super chilled liquid oxygen (LOx) and refined kerosene, known as RP-1. About seven minutes prior to launch, the super chilled LOx would start to mix with the RP-1 to prevent a cold shock to the propellant. The fuel feeds nine Merlin engines, which is where the Falcon 9 gets its name. The other part of its name is derived from the *Millenium Falcon* of *Star Wars* fame. The payload was a new generation of GPS satellites known as *GPS III* for the United States Military. The first of a series to be sent into space, this satellite has been designated *Vespucci* to honor *Amerigo Vespucci*, the Italian explorer for whom the Americas are named. *GPS III* technology will significantly enhance the ability to fine tune capabilities for tactical ground and air missions.

The gentleman at the microphone continued in-

forming us that after lift-off, the rocket would continue to accelerate until it reached *Max-Q*, which he explained was when the maximum amount of mechanical stress would be reached on the spacecraft. At that point, the engines would be throttled back for a short period; about three minutes. Then, the first stage engine cut-off occurs (also known as MECO-Main Engine Cut-Off), followed by the first stage release. SpaceX designed this stage to have the ability to return to earth and land on legs that extend from the cylinder just prior to landing. As previously explained, that was not part of today's scheduled launch. The second stage consisted of a single Merlin Engine that would push the payload, in this case, the *GPS III SV-01 satellite*, into the appropriate orbit. The second stage engine would ignite just shy of three minutes from lift-off, which would be followed by the fairing covering the payload being jettisoned. The second stage engine would continue to burn until SECO (Second Engine Cut-Off), which would happen about eight minutes after launch.

The second stage would continue to coast for almost an hour when the engine reignites for less than a minute for the final push of the payload into the proper orbit. In less than two hours, *Vespucci* would be released into an elliptical transfer orbit about 12,500 miles above the earth's surface.

Lastly, he informed us that the launch crew were watching high velocity upper level winds, but they had not impacted the launch as of yet. He also shared that we ought not be concerned, as they had about a half-hour launch window.

The countdown continued until T-7:01 minutes, where it stopped. It sat at that number for about two minutes and was then reset to T-15:00. This did not bode well, but was still inside the launch window. The countdown clock continued to remain at T-15:00 until the time on my watch slipped past 8:34; the time when the launch window presumably closed. The man came back to the microphone and told us the launch was scrubbed for the day and expected to be rescheduled for the following day. Now my mind began to race. Was it possible that I might actually get tickets to the Gantry Viewing Area after

all?

As the other spectators began to descend the bleachers. I was determined that I was not going to be denied a second time. I immediately went to the ticket area of the Kennedy Space Center Visitor Complex website on my phone. It still had information about that day, and that the Gantry viewing area was sold-out. I refreshed my screen; no change. Refreshed again. I was determined to be one of the first in line. Again, no change. Refresh, refresh, refresh ... nothing! I waited five minutes, tried to find information from other websites: SpaceX listed nothing, NASA listed nothing. Time was wasting. I refreshed the KSCVC site; no change. I then had to relieve myself of the earlier coffee.

By this time, Barbara had left me in my frantic state to go see the exhibits in the Apollo/Saturn V Visitors Center. I slowly descended the bleacher stairs, continuing to check my phone. I met Barbara under the business end of the Saturn V rocket suspended above the floor of the visitor center. I told her I had to find a men's room and we selected a place to meet, as the crowd was still fairly thick with disappointed launch viewers. The buses were not yet running for regular customers, but were bringing the viewers back to the main area where they could get discount coupons for the Space Shop. When we reconnected, Barbara suggests calling the information number for the KSCVC to see if they could tell me what typically happens regarding availability of seats after a scrub. The young man was very helpful, and I mean that sincerely, but he told me that they would not have any information until a decision was made by the launch team. Once that determination had been relayed to them, they would update the website. We decided to remain at the Saturn V Center checking out the exhibits while I periodically retried the website. I even convinced her to call the KSCVC information line again, but she received the same information.

After a pleasant



Saturn V Rocket

early lunch from the Moon Rock Cafe, we headed back to the main part of the complex via one of the shuttle buses. As we drove along, I continued to try the tickets section of the website. I can be somewhat manic (did I mention that Barbara deserves *Saint-hood*?). As we were just about to turn into the shuttle bus terminal area, the website changed and Gantry tickets became available for the next day's launch. I hastily entered my information into the website purchase page as the bus emptied. After being the last person off the bus, I entered my credit card info. I pressed the "Buy Tickets" button on the screen and *voila*, we had tickets to the Gantry Viewing Area for a 9:07 AM launch the next morning!

We spent the remainder of the day taking in the sites at the Space Center Complex, including the Space Shuttle lift-off simulator inside the Shuttle Atlantis® Gallery, NASA Now, with its display of manned capsules, including the Boeing CST-100 Starliner, NASA's Orion and the SpaceX Dragon. We took a few solemn moments in reflection and respect at the Space Mirror Memorial Wall.

The next morning found us getting up ten minutes earlier than the previous day. I had prepped with coffee and a microwaved breakfast sandwich before we left, so as not to have a repeat of the previous day. We were out of the hotel and heading north by 5:50 AM. This morning, nothing was going to prevent me from getting out to the Gantry Viewing Area and securing a premium seat for the launch. The night before, at the hotel, we had met one of the crew on an observation plane that flew out to sea about 200 miles to record the launch. He said that the problem had been a faulty sensor when the supercooled LOx had started to mix with the RP-1. The sensor failed and it aborted the countdown. He had been told that part was already on its way from California and would be installed overnight. As far as he knew, everything was a *GO* for the next morning.

We travelled up the coastal road, hoping to avoid a similar backup of the previous day, still unaware that it was because of the Vice-President; we would learn that later while in line. We not only avoided any traffic, we arrived at the entrance at 5:35 AM ...

we were third in line to get in. The wait was twenty-five minutes for the parking lot gate to open, and for the attendant to collect our parking pass, but we were going to be right up front when the gates opened at 6:30. As we got out of the car, John, from Atlanta whom we had met the previous day, parked beside us. The three of us made our way to the front of the complex entrance awaiting the gatekeepers to let us in. It was chilly, but not as cold as New England, as the crowd began to expand behind us. At 6:20 AM, a rather husky guy wearing a cowboy hat came out from behind a wrought iron gate used for handicapped persons and exclaimed in a loud voice, "Can I have everyone's attention. This is a scrub day!"

Well, I knew that. The day before the mission had been scrubbed, so this was the next date.

He continued, "No really, this is not a joke!"

Wait, what does that mean, *scrub day*? People began looking bewildered at each other.

"I wanted to come out and let everyone know - I just saw it on my email feed. The mission was scrubbed this morning at 4:50 AM. There is no more information regarding the launch. We will refund tickets at the *Will-Call* windows or at Customer Service. We are still planning to open the Center at 6:30 as planned. I'm sorry to be the person who has to tell you, but today's mission has been scrubbed."

All of the people behind us shifted to the right and formed a new, very long line at the *Will-Call* windows. We had intended to finish seeing the sites that we had missed. After the entrance opened and we cleared security, we headed directly to customer service to obtain our refund for the Gantry tickets. We spent the remainder of the morning visiting the Mars exhibits, strolling through the Rocket Garden and exploring the Heroes & Legends building.

The Kennedy Space Center Visitor Complex is a remarkable place. The people who work there were always friendly and courteous. The grounds were clean and the exhibits were impressive. Two days was not nearly enough to visit all the nooks and crannies with as much information one could desire on the American space program.

Although the launch had been rescheduled for the

following morning, we had had enough of getting up before dawn during our vacation. It was just as well, as the launch for the next morning, Thursday, was also scrubbed. Later that morning, we headed back to Orlando Airport (MCO) and flew home to Logan.

Saturday's launch date was scrubbed as well. But, on Sunday morning, December 23rd, Barbara and I sat on our couch, in our pajamas, with our Christmas tree sparkling multi-colored lights beside our television, and watched on NASA-TV as that *Falcon 9* Rocket lifted off launch pad LC-39A at Cape Canaveral, Florida, rose into the sky and deployed the *GPS III SV-01 "Vespucci"* Satellite into orbit around the earth. Everything went just as planned; except for the intended launch date. I guess the 5th time really is the charm. ↓



MASM Flight Simulator Finds a New Home

by Keith Young



I am pleased to report that one of the two flight simulators donated to the museum has found a home. Since mid-December 2018, I have been working with **Avier Flight School** (avierflight.com) at Beverly Airport (BVY) to install and troubleshoot one of the simulators. It is still on a trial basis and has yet to be used by any customers. But, Paul Beaulieu and Esteban Monterroso, co-owners, are looking forward to being able to use it on a regular basis. The unit shares a room in their newly acquired facility with a One-G simulator used for instrument training. Although the museum-owned *sim* uses some older technology, the features are significant and

the level of technological functionality is simply amazing. The full-size device is designed to accurately simulate the cockpit of a Cirrus SR20/22. Paul and Esteban were interested in trying out the *sim* as they have an SR22 as part of their fleet. Once the *sim* was partially up and running, Paul took it for a "test flight" and declared that it handles like the real plane.

To get the unit to that stage took quite a bit of work and technical know-how. This is an incredibly complex simulator utilizing a real-world stack of Garmin equipment, including two GNS 430 all-in-one GPS/NAV/Com radios. These are not simulation units but actual equipment that the simulator computer fools into thinking they're in the real world. The simulator console is driven by two Dell computers with Xeon processors; one for the simulator software, which is X-Plane 8, the other is to handle all of the inputs from the simulator unit. This computer drives six

separate screens incorporated into the system, including the two main Dynon glass cockpit EFD's, a "backup" for the altitude, attitude and airspeed indicators, and the main console screen which controls the *sim*'s virtual location and allows the instructor to fail systems.

The two units were donated to the museum in late 2015 and moved to Woburn for storage in 2016. In the early part of 2017, one of the units was moved to another FBO for trial, but was never installed. When the point person for the simulator left the FBO, I retrieved it, returning it to storage in Woburn. I continued trying to find a home for one or both of the units and, when Avier moved into their new facilities in the summer of 2018, I broached the subject with them. Last fall, they met me at the storage unit to look at the simulators and were impressed with the accuracy of the cockpit layout. I was careful to explain that I did not know the status of either of the simulators, that there was minimal documentation and that, although I was told that they were both working when donated, I could only promise that I would do my best to get one of them functional. They agreed they were willing to give the *sim* a try.

Paul, a veteran flight instructor with more than eleven years of experience and top ratings, started Avier Flight School with a different mind-set about learning to fly. He, along with Esteban, a first-generation American who moved with his parents from Colombia when a child, began creating a lifestyle for the aviation community. They wanted an atmosphere where anyone, not just pilots, could feel welcome. They established an open, welcoming space where people come in, relax and have a cup of coffee or espresso. If one happens in around at lunch time, you are invited to join the crew, who take their meal together as a team. The place is buzzing with people who stop by to chat, grab a pastry or muffin and stay for a bit. Oh, flying lessons happen as well, but it occurs in a feeling of community and positive reinforcement.



From their website: *AVIER is formed from the idea that learning how to fly is not difficult; becoming a pilot, the decision maker, is where the challenge is. We focus on helping each pilot find her or his strengths as well as weaknesses, and so find their way along the path toward becoming the safest pilot they can be.*

One morning in December, Esteban met me at in Woburn where we loaded the former Bedford *sim* onto my trailer. After opening the brand-new sliding doors into Avier, with the help of 3 more young men, we were able to lift the main section from the back of the trailer into the pilot's lounge. Carefully sliding the simulator across the new floor with a mover's blanket and tilting the system onto its side, we gently slid the unit into the side room with the One-G *sim*. A couple of days later, I began the laborious process of sorting out the connections and assessing what was necessary to get it functional. I also reinstalled the seat which had been removed for easier transport some time ago. Following another day's work and obtaining all of the required adapters and power cords, I was finally ready to give a power-on test. The initial power-up looked promising, but the system failed when trying to make the two computers sync. Several more days of testing identified a problem with the network connection between the two computers. Once this was resolved, the simulator's power came on and it functioned, but not without issues.

The airspeed indicator screen would not display an image and the attitude indicator screen showed a sideways image. Additionally, and more problematic, when trying to "relocate" the airplane from it's default airport in Florida to KBVY, the computer controlling the simulator gauges would fail. Other issues included a faulty flaps switch, alternate air source lever and several other pieces that required tightening. Over the course of several weeks and multiple trips to Woburn for parts from the Norwood simulator, I was able to get the unit in decent shape. I installed the touch screen monitor and riser bar, also previously removed, and set about to eliminate the large grey box where all the power and computers were housed.

In late January, it all came together and the *sim* is up and running. There are still a few problems to be hammered out, but I suspect it will be fully functional by the time you read this article. Stop by some time to check it out, have a cup of *Joe* and a brownie, relax for few minutes and maybe book a lesson in their beautiful Cirrus SR22 "Miley" while you are there. But you'll have to prove yourself on the simulator first. 🛩️

Flying Turtles?

Reprinted with permission from AOPA, David Tulis, Associate Editor

Pilots instrumental to winter sea turtle rescues

Unusually early cold weather rushed in before winter started Dec. 21, and the accompanying frigid waters paralyzed migrating sea turtles along the East Coast in New England, said TurtlesFlyToo.org Founder Leslie Weinstein.

ENDANGERED



[Link to AOPA Story](#)

"This year has started off a little earlier than expected," noted Weinstein, a pilot who transformed an early fascination with the slow-moving creatures into a lifelong pursuit. He merged volunteer aviators' big hearts with the creatures' needs for transportation and began organizing flights to special rescue centers in 2014. "Unfortunately, this season has signs of becoming another emergency stranding."

The first wave of volunteer general aviation pilots began their journeys south in [November](#) after dozens of cold-stunned reptiles congregated near Massachusetts beaches. "Last year we were transferring them into February, but it's different every time," said Weinstein. He added that most of the sea turtles recently rescued were Kemp's Ridley sea turtles, frequently cited by biologists as one the most endangered sea turtle species. "General aviation has played a major role in prolonging the life of the Kemp's," he said.

Dave Dinneen, manager of [Marshfield Municipal-George Harlow Field](#) in Massachusetts, concurred. "This year has been rough on the sea turtles that have been migrating to and from Cape Cod Bay." He said that the numbers were "up considerably" compared to previous years. [The Cape Cod Times](#) reported more than 750 turtles had been recovered by mid-December during the height of the stranding season.

Dinneen and Weinstein complimented pilots who provided their GA aircraft and other volunteers during rescue missions to specially equipped sea turtle centers. The rehabilitation facilities included the New England Aquarium in Boston, North Carolina's Network for Endangered Sea Turtles in Kitty Hawk, the Georgia Sea Turtle Center in Jekyll Island, Florida's Mote Marine Laboratory's Sea Turtle Rehabilitation Hospital in Sarasota, and elsewhere.

Baby sea turtles have "a tough road" ahead of them, said Richard Fowlkes, the former policy coordinator for Florida's South Walton Turtle Watch organization. He explained that turtles are reptiles, so they are cold blooded. Sudden temperature changes often confuse them and can lead to death from exposure, said Fowlkes. "When a cold front sweeps through, they can get stunned by the lower air and water temperatures and then they just can't function properly."

TurtlesFlyToo.org now counts more than 500 pilots in a database, and they are called upon when the weather suddenly turns cold. Pilots can sign up on the organization's website and monitor the PilotsNPaws.org mission list for the latest needs, especially during the winter.



TurtlesFlyToo.org, a sea turtle rescue organization founded by True-Lock aviation's Leslie Weinstein, matches stranded sea turtles with pilots, aircraft, and wildlife medical facilities. Photo courtesy of TurtlesFlyToo.org.

Weinstein, who owns the True-Lock aviation fastener company in Idaho, said the turtle rescue organization helps educate the public about the importance of GA. “I would love everybody in general aviation to understand the program and to participate. It’s so unique.”

He has plans for a future Boston Aquarium fly-in to honor pilots and other volunteers, and a beachside barbecue on the Georgia coast near the Jekyll Island rescue center to coincide with a turtle release. “We’re talking about a behind-the-scenes opportunity with the aquarium and with Jekyll’s sea turtle center. What could be better than that?” 🐢



David Tulis



Associate Editor Web/ePilot

AOPA Associate Editor Web/ePilot David Tulis joined AOPA in 2015 and is a seaplane-rated private pilot who enjoys vintage aircraft, aerobatic flying, and photography.

C.A.V.U

Most people familiar with aviation know that the abbreviation “CAVU” stands for “*Clear, and visibility unlimited.*” In this new recurring feature of **Horizons**, we will test your ability to see clearly into the history of aviation by identifying flying machines that once were. The first reader who submits the correct answer will be entitled to bragging rights and have their name and answer published in the subsequent edition of **Horizons**. Submit your name, the name of the aircraft, the type or version (if applicable), and the country where it was manufactured to the editor-in-chief of **Horizons** at:

horizons@massairspace.org

**Here is your challenge
for this edition: ➡**





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August 29, 1960–JFK @ HYA



Tom Simmons—Airline Pilots!



LH454 landing KSFO



Wings of Freedom @ HYA



TU-144 vs. Concorde



Final Shuttle Launch