

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

Vol. 9 Issue 2

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June 2023

MASM Museum Holds Grand Opening



MASM President Georgia Pappas cuts the ribbon marking the Grand Opening of the new museum in Hyannis

In a St. Patrick's Day celebration, MASM had a grand opening of the new museum facility in Hyannis on Cape Cod. Museum directors and volunteers have been working tirelessly to renovate and refit the facility at 438 Main Street to accommodate the requirements of the museum. Not only is there ample display space for exhibits, but a classroom/ conference room area to help fulfill the goal of inspiring future generations to pursue opportunities in science and technology.

On hand for the ceremonial aspects of the day

" Cambridge, We have a problem"

How NASA almost built a huge campus in Cambridge, Massachusetts



President John F. Kennedy Reaching for the stars

Excerpted from "Where Futures Converge: Kendall Square and the <u>Making of a Global Innovation Hub</u>" by Robert Buderi Reprinted with permission from The MIT Press Copyright © 2022

The story of NASA in Kendall Square would be told and retold countless times by locals—even more than fifty years later. People shake their heads and point to the eye-sore compound with a gigantic tower building opposite the Marriott Hotel between Broadway and Binney Street. The most common version of the myth runs something like this: The space agency needed a headquarters, and with Massachusetts's



With our Grand Opening behind us the museum doors are wide open now. We have new and exciting exhibits that help tell the fascinating story of the Bay State's key place in the rich history of both aviation and space endeavors. Women from Massachusetts have played key roles in promoting these pursuits, and their stories are also on display.

Our new home at 438 Main Street in Hyannis is an expanded space that has allowed us to provide more of our collection of artifacts. But the real value for visitors is the interactive elements that include not only flight simulators, but our knowledgeable docents who provide museum goers with an informative and fun experience. Stop by and see for yourself that a visit to the Mass Air and Space Museum is always a great family adventure!

> *Kerin Currie,* Chairman of the Board



Board Chairman Kevin Currie <u>kcurrie@massairspace.org</u> Board Vice-chair Joe Dini <u>jdini@massairspace.org</u> President Georgia Pappas <u>gpappas@massairspace.org</u> Curator Barbara Jagla <u>bjagla@massairspace.org</u> Interim Exec. Director Keith Young <u>kyoung@massairspace.org</u> Operations Manager Bryan Mckay <u>bmckay@massairspace.org</u>

Museum located at:

438 Main Street Hyannis, Massachusetts (508) 827-6300

Museum Hours:

Tuesday through Saturday 10:00 AM to 4:00 PM Admission: Adults \$10.00 Children (ages 5-11) \$6.00 Active Military with ID: Free

MASM Business Mailing Address:

200 Hanscom Drive, Bedford, Massachusetts 01730

Horizons is a production of **Berkshire Cottage**, **LLC** 148 Union Street, Milford, NH 03055-4430 *Exclusively for* the Massachusetts Air and Space Museum Editor-in-chief: Paul D. Bagley, *esq*. email: <u>paul@berkshirecottage.com</u> or: <u>horizons@massairspace.org</u>

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own John F. Kennedy serving as president of the United States, he arranged for it to be in Kendall Square. The site was built, NASA moved in, but then, after Kennedy's assassination, new president Lyndon Johnson moved it to his native Texas, where it remains today.

That makes for a nice, neat story—and there is some truth in it. But it misstates what really happened in important ways. Kendall Square was never supposed to have been NASA headquarters. Rather, it was chosen to host the space agency's Electronics Research Center (ERC), which was built. The ERC opened in September 1964 and was closed less than six years later on June 30, 1970. It was given the axe under the Nixon administration, though, not by Lyndon Johnson. And what few likely realize is that the center never came close to reaching the size and scope it was supposed to have achieved. Had it done so, Kendall Square might be on a dramatically different trajectory than it is today.

The space race was in full bloom in the early 1960s. Russia had launched its Sputnik satellite in 1957, shocking the United States with its technological prowess. NASA had been established the following year. In May 1961, barely four months into his presidency, John F. Kennedy had declared to Congress that the United States should set the goal "of landing a man on the Moon and returning him safely to the Earth" before the decade was out. The mission sparked a reorganization of NASA to focus on the manned space imitative. In concert with the restructuring, NASA administrator James Webb and other key officials believed the agency needed to dramatically up its electronics game. "NASA's fundamental dependence on electronics and its need for internal expertise drove the agency to create an entirely new center, the Electronics Research Center," a NASAcommissioned historical paper noted.

As the paper continued, "it is not clear how the Boston area was chosen, or even if NASA considered other locations." However, the long work MIT had done to bolster its ties to the military and other branches of the government served it well. Three of Webb's top advisors—Associate Administrator Robert Seamans; Raymond Bisplinghoff, director of NASA's Office of Advanced Research and Technology; and Director of Electronics and Control Albert Kelley —

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had direct ties to MIT. Seamans had gotten his doctorate at the institute and been an associate professor there (he would later serve as Air Force secretary and return to MIT as dean of engineering); Bisplinghoff had been a professor; and Kelley was a Boston native who had also gotten his doctorate at MIT. Webb himself served on the board of visitors of the Joint Center on Urban Affairs of Harvard and MIT.

But locating the center near MIT made sense for more objective reasons, given MIT's decision to cultivate deep expertise in electronics and computing after World War II. "Regardless of the politics, Camcation for the feds and had approvals by the end of 1965. In all, twenty-nine acres in the heart of Kendall Square were earmarked for NASA. The area in question was a large tract bordered by Third Street on the east, Binney Street on the north, Broadway on the south, and the railroad right-of-way on the west. The Broad Canal ran through the parcel, and much of its length would have to be filled in. The land was occupied by a fairly large number of mostly small and aging commercial businesses, though very few residents.

A key part of the plan involved the commercial development of an adjacent parcel of land—thirteen

acres in the triangle

and Main Street, with

Galileo Galilei Way as

its base. This lay be-

designated land and MIT, where the Mar-

riott Hotel and vari-

ous office buildings

stand today, and also

the Broad and White-

head research insti-

tutes. At the time,

like the NASA parcel,

it contained older

businesses, but also included a number of

working-class homes.

Broadway

NASA-

between

tween the

bridge was the best logical location for an electronics research facility," the same historical paper noted. "The area abounded with electronics resources and talent: MIT and Harvard, the industries along Route 128, the Air Force's Cambridge Research Laboratory and Electronics System Division at Hanscom Field, MIT Lincoln Laboratory, the Mitre Corporation, and the MIT Instrumentation



Kendell Square Cambridge, Massachusetts in 1962

Laboratory (Draper Lab), which already had undertaken responsibility for the Apollo guidance computer."

In 1964, Cambridge initiated the Kendall Square Urban Renewal Project under which the effort would proceed. This was a seminal step in the future development of Kendall Square—though once again, things would not play out as envisioned. As an architect of the plan, Robert Rowland was asked to help get it off the ground and in April 1965 took a threemonth leave from his Boston job to work for Cambridge. At the end of the first three months, things were on track, so he requested another three months. He never went back to Boston, heading the Cambridge Redevelopment Authority from 1965 until 1983. This land would stay on the tax rolls and, the hope was, more than make up for what was lost to the federal government as revitalization took place. The vision was to offer a blend of commercial, retail, and residential space that would create a dynamic, almost 24–7 urban neighborhood right next to MIT.

That more than fifty years later planners, university officials, city officials, and residents would still be fighting to fulfill that dream for Kendall Square is a testament to how far off the mark things ultimately went.

It was all systems go at first. NASA opened the Electronics Research Center on September 1, 1964, moving into temporary quarters in Tech Square while its permanent site could be readied. The following

Rowland's team finalized the loan and grant appli-

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August, the city formally approved a plan that designated the twenty-nine-acre site for the space agency and also allowed for commercial development of the thirteen-acre triangle next to it.

Over the next three years, half the allocated property — 14.5 acres — was conveyed to NASA as it became ready. "In this period, approximately 110 businesses were relocated, the existing buildings were razed, and the Broad Canal partially filled," writes historian Susan Maycock. The Cambridge Redevelopment Authority reported that the companies displaced employed more than 2,750 workers. That was significantly more than the 2,100 jobs to be directly created over time by the NASA center, but presumably most of the old jobs were preserved elsewhere and the NASA-created positions would be more modern, longer-lasting, and higher-paying—and that did not count additional jobs created by the expected boon to the neighborhood the ERC would provide.

With the project's liftoff going more or less as anticipated, Congress appropriated funding for the Electronics Research Center for the fiscal years 1965, 1966, and 1967. For the next three fiscal years, however, with NASA facing mounting pressure over its skyrocketing budget, no additional funds were approved for construction, although the center continued to add personnel even as other NASA operations were forced to contract. Then, on December 29, 1969, the abort signal came. President Richard Nixon, who had taken office the previous January, issued an executive order without warning to close the center by June 30, 1970.

When the order came through, only one twelvestory tower and five low-rise, concrete perimeter structures had been completed. For the most part, they sat in an urban flatland amid sprawling parking lots. The center itself employed just 850 workers one hundred of whom held doctorates. They were working on a range of projects that spoke directly to the hopes of transforming Kendall Square into a leading-edge, high-tech center. These included an array of satellite programs, as well as research into nuclear propulsion systems, hybrid computers, holographic displays, and automated landing systems for jet aircraft and the space shuttle.

The closure spurred rumors and conjecture about what had happened. In future years, the story some-

how became that Lyndon Johnson put the kibosh on the center to move operations to his native Texas. But at the time, many people figured Nixon had ordered it shut down as a political strike against the Kennedys and Massachusetts, the only state that didn't vote for him in the 1972 general election. "At least that was the general conclusion," says Rowland.

Whatever the motive, Nixon's executive order stunned Cambridge officials. "The closing, bitterly protested by Cambridge as a flagrant breach of contractual obligations, necessitated a replanning and reprogramming of the entire renewal project area," the Cambridge Redevelopment Authority sums up. The city, presumably joined by MIT and others, put pressure on the Nixon administration not to totally abandon the site. Nixon's new secretary of transportation was John Volpe, who had just ended his second stint as governor of Massachusetts. Against the advice of some key lieutenants, Rowland says, Volpe paved the way for his department to take over the facility—which was renamed the John A. Volpe National Transportation Systems Center. The Department of Transportation (DOT) took possession on July 1, 1970. Leading up to that point, 611 NASA staffers remained. Of those, 425 transferred to work for the D.O.T.

MASM Grand Opening

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were Georgia Pappas, President, Kevin Currie, Chairman of the Board, Joe Dini, Vice-Chairman of the



Apollo Flight Suit Display

Board, Barbara Jagla, Museum Curator, and Keith Young, Interim Exec. Director. Also on hand was an enthusiastic crowd people who of were the first to enjoy all the new exhibits and the spacious new quarters of the museum. 📢

Perseverance and Ingenuity



Perseverance: NASA's Martian Rover

NASA's most recent autonomous roving lander has been touring the surface of Mars for over two years now. While Mars isn't even the second closest planet to the big blue ball we call home, its location in our solar system and size seem to suggest that it might actually be the only possible inhabitable planet by life of any kind other than Earth.



Just like Earth, not all of Martian Rocks are Red

In July of 2020, NASA launched an Atlas V Rocket carrying *Perseverance* on its exploratory mission to the *Jezero* Crater on Mars. The site was chosen because of the features that appear as though they were formed by water in great abundance. Where there is water, life is possible, and this would move man closer to answering the age-old question, "Does life exist beyond earth?"

Arriving seven months after leaving Earth, Perseverance made a spectacular landing aided by both parachute and rocket engines in February 2021. Since then, it literally gave birth to its flying offspring, *Ingenuity*, which has already completed 50 flights over the surface of Mars that have helped map the landscape so that the artificial intelligence software aboard Perseverance could use it to identify and select the best and safest route to travel. Perseverance has drilled for numerous core samples from various types of rocks on the Martian landscape that will eventually make a return trip from Mars to Earth in order to be properly analyzed under laboratory conditions.

Ingenuity is a specially designed helicopter that is



Ingenuity: Perseverance's Eye in the Sky

both an exploring tool and a guide for Perseverance as it maps viable routes for the rover on the surface. It has thus far managed to climb 14 meters above the surface, and traverse a distance over 11,000 meters (roughly 7 miles). It has performed far above expectations and is still going strong. Ingenuity is paving the way for future powered flights on Mars by providing volumes of data that is aiding the design of future flying crafts that will take to the Martian skies.

Stay tuned for further updates on these two remarkable spacecraft as they explore one of our more interesting neighbors in the cosmos. Both Perseverance and Ingenuity are being given new and challenging missions by NASA's controllers that will offer true insight for future human exploration of the planet.



Destination: Mars!

The first iteration of the SpaceX Starship ascent vehicle was launched from Florida on April 20, 2023. Within four minutes the vehicle began to wobble and topple predictably and eventually the self destruct button at ground control was activated and the rocket exploded into a giant ball of fire. Although this may have appeared to the casual observer to be just another rocket failure, this was actually a calculated and measured occurrence designed to glean insight into the potential for anomalistic actions by the largest single space vehicle ever to be launched from earth.

Although the International Space Station is a fairly large spacecraft which provides a living environment for human habitation, it needs to be remembered that this vessel was actually constructed in space from smaller payloads delivered during multiple launches. The SpaceX Starship is both a giant rocket and an equally giant payload. The scientists and engineers responsible for its development needed to know that launching such a behemoth was not just theoretically possible, but actually doable before risking an live human crew.

Like a toddler learning to walk, our endeavors in exploration beyond our atmosphere have endured many falls and slips along the way. During Project Mercury, the first American manned space missions, NASA had considerable trouble getting anything but the tiny Redstone rocket to work very well. The Redstone was fine for the pair of suborbital flights handled by Alan Shepard and Gus Grissom. Something bigger and better was needed, however, if man was going to move to the next level.

North American Aviation's Atlas rocket had suffered many botched launches prior to its use in John Glen's historic threeorbit flight. The power and drive of the Atlas was the only rocket powerful enough to launch a Mercury spacecraft into orbit. Despite the risks, NASA stretched the envelope and got an American to orbit the Earth for the first time. After Astronaut Gordon Cooper's flight, the last of Project Mercury, where Cooper spent 34 hours in space proving that man could withstand the rigors of prolonged space travel, Cooper went on to command Gemini V. Project Gemini consisted of two-man crews that were launched via Titan II rockets designed initially as ICBM delivery systems. Cooper spent the equivalent of 9 days in space, proving that man could endure sufficient time there to accomplish a roundtrip journey to the Moon.

The Apollo Project was next in line for manned space flight. It began with the fatal mission of Apollo 1 which never even launched. Three astronauts perished in an onboard fire on the launch pad during the final "Plugs Out" test where the spacecraft was fully oxygenated and pressurized and disconnected electronically from anything on the ground. The giant Saturn 5 rocket wasn't even fueled at the time and was not involved in the fire. This was a devastating blow to the program, and a setback to be sure. Nevertheless, it offered important lessons for NASA and the many engineers who would press forward and land Apollo 11 on the Moon.

Project Apollo wasn't out of the woods yet. Apollo 13 suffered a catastrophic incident due to an explosion while enroute to the Moon. The mission was ultimately scrubbed because of equipment failure and the three astronauts were fortunate to return to Earth unharmed. Again, NASA and the engineers learned much from this failure, many of those lessons were applied in subsequent manned space flights.

<u>Skylab</u> was a short-lived experiment to allow astronauts to remain for longer periods in space and was eventually followed by the International Space Station [ISS]. On display at the Mass Air and Space Museum is equipment used during flight STS-73 supporting <u>SpaceLab</u>.

In between these undertakings, NASA launched the Space Shuttle program which helped build and maintain the ISS. Of the five shuttles that were built, two were destroyed along with their crews; one just after launch, the other during reentry.

While NASA is currently scheduling a return to our Moon [Artemis Program], it also has plans for a manned mission to Mars in the not-too-distant future. In order to minimize the risks to the crew, testing and retesting of every system under every imaginable condition must be conducted to insure the optimum chances for success. The recent Starship launch and subsequent destruction was merely one of the thousands upon thousands of quality assurance tests that will need to be successfully completed before men and women can set foot on the Red Planet.

Boeing Business Jets



Boeing's 737-BBJ with long-range luxury

Boeing has captured yet another niche market in the aviation industry, the long-range business class jet, with the 737-BBJ, which stands for Boeing Business Jet. Among this aircraft's biggest fans is none



other than aviator/actor John Travolta who rose to fame in the aviation world by becoming a flying ambassador with a commercial ticket and 747 certification with Qantus Airlines. While he was offered his own 747 at one time, Travolta had to refuse due to the high cost of maintenance and operation of the

jumbo. Regardless, he loved that airplane.

But the 737-BBJ is a different story. Both operational and maintenance costs of the entire 737 family are well within the reach of this seasoned pilot, not to mention the range and performance of such an aircraft. They're easy to fly, can be outfitted with luxury interiors, land and park easily at any commercial airport, and offer a big bang for the buck over virtually all midsized twin engine jets. Go John!



Thurston Teal N501ME

MASM Great Raffle Results & Winners

The Massachusetts Air and Space Museum giant raffle had a grand finish on April 3, 2023 when three lucky winners had their tickets drawn for the prizes.

Third prize, an iPad Mini & ForeFlight system went to winning ticket # 10160-MASM-2028 and awarded to Richard D. of Massachusetts.

Second prize, a Bose aviation headset was taken with ticket 10360-MASM-2164 and won by Del M. of Texas.

And first prize, the Thurston Teal N501ME and cash to acquire floatplane certification was won with ticket # 10957-MASM-2673 and taken home by Gregory R. of Kentucky.

MASM offers congratulations to all three winners and extends its hopes that all will thoroughly enjoy the prizes they have won. MASM's Board of Directors and Officers also wish to extend their heartfelt thanks to everyone who participated in this fundraiser by purchasing tickets for this raffle. The museum had a fantastic response to this offering and raised some much-needed funds for numerous pending projects. MASM hopes to be able to offer similar promotions in the future.



NIFA and SAFECON

by

Barbara Jagla, MASM Curator

The National Intercollegiate Flying Association was formed for the purposes of developing and advancing aviation education; to promote, encourage and foster safety in aviation; to promote and foster communications and cooperation between aviation students, educators, educational institutions and the aviation industry, and to provide an arena for collegiate aviation competition.

The NIFA adopted the motto, "Competition in the Spirit of Safety and Excellence," and the regional and national competitions became known as SAFECONs (Safety and Flight Evaluation Conferences).

The Massachusetts Air and Space museum is proud of our volunteer, Jack DaCorte, majoring in aviation science at Bridgewater State University who competed at the KOSH Wittman Regional Airport, Oshkosh, Wisconsin <u>SAFECON</u> event in May 8-13, 2023.

The National Intercollegiate Flying Association (NIFA) exists today as a forum for collegiate aviators to expand their studies and further their careers by participating in competitive and non-competitive events, networking with industry and contemporaries, and applying themselves to go above-and-beyond their ordinary curriculum. But, its history began over a century ago.

NIFA traces its roots to early post-World War I powered flight. Young aviators, returning from the war to their collegiate studies, sought to expand upon and use their training and experience to further the nascent cause of civil aviation. *"We, students of Co-*

lumbia University, being ex-army and navy aviators, have organized the Aero Club of Columbia University," twelve students declared in their May 1, 1919 petition to the University Secretary. Similar clubs were born in the early days of flight at Harvard, Princeton, Yale, Lehigh, and other universities and colleges across the United States. On May 7, 1920, nine schools competed at **Mitchel Field** in the first contest held by the Intercollegiate Flying Association. They charged a small admission fee and a huge crowd contributed a net of \$5,000 to see the show. Yale took first place, assisted by naval aviator and future founder of Pan American Airways, Juan Trippe in a war-surplus Curtis Jenny.

The National Intercollegiate Flying Club (NIFC) was formed in 1928 at Yale by representatives from ten colleges. In 1929, **Grover C. Loening** of the Loening Aeronautical Engineering company, who had been America's first candidate for an aeronautics degree just seven years after the Wright Brothers historic flight, established the Loening Intercollegiate Flying Trophy. His wish was to encourage flying and exceptional achievements among the now many collegiate aviation programs nationwide. The award was judged that first year by Loening and his friends, Charles Lindbergh, Amelia Earhart, and Navy Commander John Towers. The pure silver, Tiffany-designed trophy is still judged and bestowed today at the annual SAFECON.

In December of 1934, twenty three colleges and universities met in Washington, D. C. to broaden the competition beyond what had been mainly Ivy League schools. They elected officers, chose an airmeet location for the following June, and, under sponsorship of the National Aeronautic Association (NAA), formally declared the National Intercollegiate Flying Club (NIFC) a going concern. Bill Strohmeier of Amherst was NIFC's first president and Purdue hosted the first National Air Meet taking top honors. Competitive events included spot landings, navigation, and "bomb" dropping.



Practicing safe gas up at a recent SAFECON meet



Booklet cover from Lydia E. Pinkham Medicine Co., Lynn, Massachusetts

From the Collection by Barbara Jagla, Curator

Lydia Pinkham Gove – First Woman to Cross the Country in an Airplane

The Salem Evening News of August 31, 1926 reported that *Lydia Pinkham Gove* was the first woman to cross the country in an airplane. MASM's collection contains a photocopy of this article as well as a photocopy of the booklet "Pinkham Pioneers 1873-1926" published by Lydia E. Pinkham Medicine Co. Lynn, Mass.

Ms. Gove flew from Los Angeles to Boston, 4,000 miles in five days, or 31 hours of actual flying time in a Travel-Air. The pilot was Charles R. Bowman, a former aviator in World War I and well known in flying circles of California. Gove was accompanied by James Luther Adams, pastor's assistant of the Second Unitarian Church of Salem, Mass.

Lydia Pinkham Gove was the oldest daughter of Mrs. Aroline Pinkham and granddaughter of Lydia E. Pinkham. Ms. Gove was the Assistant Treasurer and Advertising Manager of the Lydia E. Pinkham Medicine Company and was very active on the Board of



Lydia Pinkham Gove-1929

Directors. Lydia E. Pinkham was an American inventor and marketer of an herbal-alcoholic "women's tonic" known world wide.

As described in the booklet, Miss Gove made a trip in July 1926 to the Pacific Coast with a party of relatives. For six weeks, they climbed mountains, descended canyons, rode on horseback and in speed boats, arriving at last in Southern California. Here they found a new and fascinating sport - riding in aeroplanes. Miss Gove and one other member of the party were thrilled by the experience of skimming like birds through the bright California sunshine.

In August Miss Gove conceived the daring idea of flying all the way home and thus escape the tedious heat of the desert and the dust of train travel. She soon won her companion to her way of thinking and the next morning the astonished manager of the Los Angeles Airport heard two passengers asking for a price on a trans-continental trip.

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"Within twenty-four hours we were rising into the balmy afternoon atmosphere of Southern California. Flying over the oil fields and heading for the desert of Arizona and the Grand Canyon. Each day we descended at least twice, once for lunch and gasoline and in the evening for rest. We slept every night in a hotel." said Gove. Coast to coast newspapers blazed the story of these pioneers of the sky.

Enthusiastic over the public's interest of flying, upon their return Ms. Gove promptly announced a prize contest, offering free trips by aero plane from Boston to California to the two students of any New England College who should write the best 250 word letters telling why they wanted to go. Within 48 hours after the contest was announced, over 1000 letters were received at her residence in Salem. Ms. Gove then increased the prizes to four. Two girls were to fly from East to West and two boys from California back to Boston. All expenses of the trip were paid by Ms. Gove and each of the winners also received \$500 spending money.

The prize winners included Paul Theodore Wilson of Boston, a senior at Massachusetts Institute of Technology studying aviation, Miss Margaret C. Sheehan of Manchester New Hampshire, a graduate of Trinity College, Miss Helen Albro Park of Brooklyn, NY, a student at Boston University School of Religious Education and a fourth prize winner unnamed in the article who did not make the flight.

At 7 o'clock in the morning on September 7, 1926 a fleet of automobiles bearing Ms. Lydia P. Gove, her family and friends, and prominent citizens of Salem escorted the four lucky young people to East Boston Airport. Passing the laboratories of Pinkham Medicine Company in Lynn, they were joined by five buses and many private cars carrying employees and officials of the company, escorted by mounted police.

At East Boston Airport an excited and enthusiastic



Editor's Note: Horizon's Editor-in-Chief's mother was a stewardess for United Airlines when this transcontinental route was used by that airline. She was assigned to the Los Angeles to Denver to Salt Lake City legs of the route in both directions. She subsequently gave up flying to practice medicine in Boston and raise her family in Massachusetts

crowd congratulated the winners and explored the waiting plane with the great white letters along its side, "Lydia Pinkham Gove Transcontinental Flyers".

The girls flew off on their great adventure with pilot Edward Conerton. Their trip was delayed by fog, rain and engine trouble, and one set of mules used to pull the aircraft out of the Salton Sea, arriving in Los Angeles on October 1st. After their adventurous trip, they returned East by train.

The return trip to the East Boston Airport was made by Mr. Paul Wilson in about two weeks. There were no mishaps and no hilarious adventures such as those that befell the girl fliers. However, there was one interesting night when the hotel that Wilson and Conerton were sleeping caught fire.

Note from the Curator:

If you have in your possession an original copy of the booklet "Pinkham Pioneers 1873-1926," we would be very interested in adding it to our museum collection. Please contact bjagla@massairspace.org.

What Should We Consider Before Returning to the Moon?



The Moon, as seen from Earth

First and foremost, we will need to absorb as much of the available information about this celestial body as is humanly possible. Currently, the primary objective of a return to the lunar surface is to further assess the potential for harvesting the Moon's natural resources that include minerals, rare elements, and water. Why water? It's simple. Water is comprised of two hydrogen atoms for every one of oxygen, and these two elements can literally be transformed into rocket fuel. With a gravitational pull one sixth that of Earth, it will be easier to lift this fuel source off the Moon's surface as opposed to dragging it up to space from Earth. This becomes an essential move if man hopes to undertake interplanetary travel.

During man's entire reign here on Earth, the Moon has helped hunters and sailors and lovers find their way through whatever endeavor they undertook. Now it is poised to help man find his way to Mars, one of our closer neighbors in the cosmos. How? By becoming our own personal filling station in the sky. Sure, it will take an abundance of work before that station will be up and ready to service customers, not to mention the equipment and material and manpower that will be needed to transport everything there that will make our filling station operational. But harvesting the vast hordes of ice that lie at the bottom of huge impact craters where sunlight has never fallen is one of the primary targets for water.

Yes, it will only be 238,000 miles to the next rest stop where us humans will eventually be able to tap into a vast fuel reserve that is just lying around on the Moon's rugged surface waiting to be picked up and used. If only reality was that simple. It will be a giant struggle at its best, but certainly a challenge that man can undertake and achieve. After all, we've been there and done it before.



June 8, 2023 (rain date June 15th):

Festivities on the Flight line (Previously held as Cigars & Whiskey event)

Click for Tickets

June 10, 2023:

Chatham Airport Open House (Volunteers Needed)

Click for Information

June 28, 2023 at 10:30 AM MASM Scholarship Award At the Museum 438 Main Street Hyannis, MA

September 22, 2023

Southeastern Massachusetts Aviation Career Day (Volunteers Needed)

<u>September 23, 2023</u> Great Day at the Gateway Cape Cod Gateway Airport (Volunteers Needed)

October 14, 2023 Hangars and Hamburgers - At Museum & Cape Cod Gateway Airport (Volunteers Needed)

C.A.V.U.

Most people familiar with aviation know that the abbreviation "CAVU" stands for "*Ceiling and visibility unrestricted*." In this recurring feature of *Horizons*, your ability to see clearly into the history of aviation will be tested through identification of 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:

For additional content, click on many of the photos in this edition except this one. You'll find videos and links for more information!

March 2023 Edition's Answer

Caproni Ca.90—Italy, Heavy Bomber Largest biplane to ever fly—Max. speed: 127 MPH (205 km/h) Ceiling: 14,700 ft (4,500 m) Range: 800 mi, 700 nmi (1,290 km) Dry weight: 33,069 (15,000 kg) Max. take-off weight: 66,139 lb (30,000 kg) Dimension: Upper wing span: 114 ft 6 in (34.9 m); Lower wing span 152 ft 11 in (46.6 m); height 35 ft 5 in (10.8 m); wing area 5,345.4 sq ft (496.6 m²) Powered: $6 \times Isotta Fraschini Asso 1000$ water-cooled <u>W-18</u> piston engines, 750 kW (1,000 hp) each

Armament: Guns: 12 defensive machine-guns Bombs: 8,000 kg (18,000 lb) Correct Answer: No one offered an answer to this challenge