



## A Tribute to Duncan McIver, Visionary for the Hall of Honor

June 2024

Prepared by Bo Walkley with Joel S. Levine and David Throckmorton

### INTRODUCTION—DUNCAN MCIVER

The passing of Duncan McIver has given us all pause to reflect on not only his vision for the Langley Research Center NACA and NASA Hall of Honor (HoH), but also on his friendship and character. Duncan was someone we always looked forward to seeing and talking with, a man of great persona and sense of humor—and an unending fan of kilts and North Carolina basketball!

### COME TO A MEETING FOR WHAT?

The exact date has been lost in time, but sometime in mid-2014, several of us began to receive phone calls from Duncan. In each call, Duncan began to tell each of us about his idea for a Hall of Honor to recognize distinguished NACA and NASA researchers at Langley. As each of us who received the call had been associated with NASA Langley for many, many years, we were all well aware that there were many very capable people who had made significant contributions to a wide variety of research areas at both the NACA Langley Memorial Aeronautical Laboratory and at the NASA Langley Research Center. The contributions of these researchers had paved the way for the advancement of atmospheric flight, space exploration technologies, the world's first human landings on the moon, and the world's first successful soft-landing of operational spacecraft on another planet.

### THE BALL STARTS TO ROLL

A meeting was soon convened—yes, of course, Duncan had set up a meeting—to further discuss his ideas. The first HoH committee was composed of several volunteers from the Langley Alumni Association (LAA), NASA Langley, the National Institute of Aerospace (NIA), and the City of Hampton.



*Duncan McIver*

Duncan related that he had conceived the Hall of Honor as an idea following the final LAA-sponsored NACA Reunion (XII) held in May 2008 at NASA Langley. After this successful final reunion, the LAA saw the opportunity to support a new initiative to establish an enduring Hall of Honor. There were funds remaining from the reunion, and LAA agreed to play a key role, including financial support, in furthering the HoH concept.

We met several times, and as Duncan's vision became clearer, we developed the preliminary concept for the HoH. We added a few more members as the discussions matured, and the final membership is shown in the box on the following page.

Duncan briefed NASA Langley leadership on the purpose and basic concept for realizing a permanent way to honor those truly distinguished individuals from NACA and NASA at Langley who had made enduring and significant contributions to the aerospace community. NASA Langley agreed to support the HoH initiative as a partner and

signed a Memorandum of Understanding to formalize the partnership—with Duncan signing as the representative for the LAA.

### THE FIRST INDUCTION CEREMONY GETS STARTED

With NASA Langley engaged as a partner with the LAA, the HoH Committee began to plan the first HoH induction ceremony for 2015 and to develop the necessary process for soliciting, receiving, and evaluating nominations, and for making the final honoree selections. Michelle Ferebee of NASA Langley joined the HoH committee to provide additional liaison with the Center.

In some respects, this first class of inductees was a “no brainer.” From its inception as the NACA Langley Memorial Aeronautical Laboratory, through its early days in support of the Nation's fledgling space program as the NASA Langley Research Center, there were many researchers, managers, and executives who had made truly significant contributions to the aerospace body of knowledge. Duncan noted an opportunity to emphasize NACA pioneers to complement the NACA Centennial Celebration and suggested several possible nominees. Other committee members suggested additional nominees as our discussions continued. And Jim Hansen's historical books “Engineer in Charge” and “Spaceflight Revolution,” and books and presentations by Joe Chambers, provided additional candidate names as well as details of the individuals' roles and accomplishments in their careers. Duncan provided thoughtful guidance throughout this process to ensure the final list of nominees represented the very best of the very best.

The HoH Committee identified the first group of 19 Honorees, and these

## Members of the First HoH Committee

- Duncan McIver, Chair
- Ira Abbott, LAA President
- Rob Calloway, LAA
- Joseph Chambers, LAA
- Fay Collier, NASA Langley
- Bill Gilbert, LAA
- James Hansen, Auburn University
- Gail Langevin, NASA Langley
- Dave Throckmorton, LAA
- Bo Walkley, NIA
- Mike Yaskowski, City of Hampton

potential Honorees were reviewed by former NASA Langley Center Director Del Freeman. They were also discussed with three visiting Smithsonian Historians to ensure we had left no significant candidates out of the first group. Subsequently, Gail Langevin coordinated the selection results with the History Office in NASA Headquarters and with the Director's office at NASA Langley.

## AND THE FIRST INDUCTION TAKES PLACE!

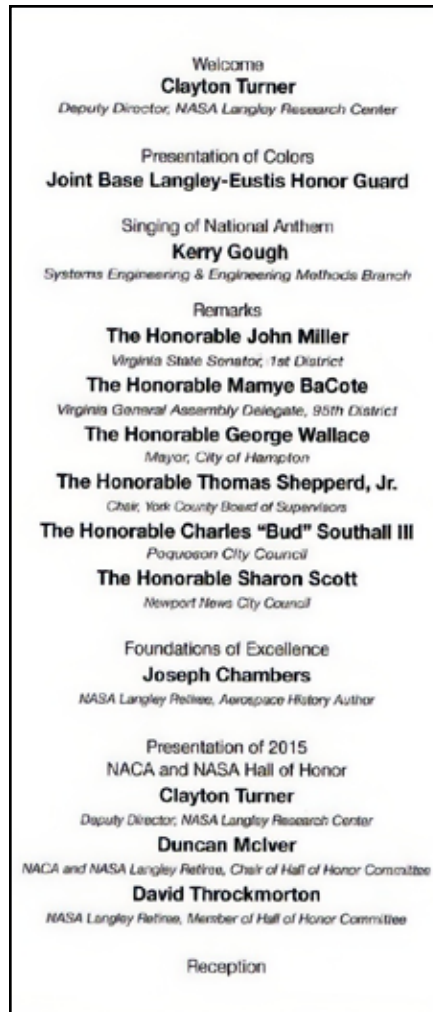
The first Hall of Honor induction ceremony for the Class of 2015 was held on August 13, 2015, led by Duncan and the first HoH Committee. Several NASA Langley personnel provided additional support in key areas, as shown below.

## NASA Langley Support for the First Induction Ceremony

- Cheryl Cleghorn, Protocol
- Randy Cone, Art Team
- Mary Gainer, Art Team
- Bill Kluge, Art Team
- Melanie Robinson, Protocol
- Rob Wyman, Website

The program included several local and state dignitaries as well as remarks by Clayton Turner, who was the Deputy Director of NASA Langley at that time. Joe Chambers provided the keynote address.

The honorees represented diverse areas of aeronautics, aircraft handling qualities, flight testing, flight dynam-



*Program from HoH Class of 2015*

ics, simulation, lunar orbit rendezvous, supersonic design techniques, manned spaceflight mission controls, manned space systems, and Space Shuttle technologies.

The citations recognizing their accomplishments and contributions are shown below:

**Max M. Munk** – In recognition of the development of thin airfoil theory and the revolutionary Variable Density Wind Tunnel.

**Henry J. E. Reid** – In recognition of development of the NACA V-G Recorder and exemplary leadership during a storied career as “Engineer-in-Charge” of the NACA Langley Memorial Aeronautical Laboratory and Director of the NASA Langley Research Center.

**Pearl I. Young** – In recognition of enduring contributions to the NACA and NASA resulting from her personal establishment of systems that ensured the accuracy, thoroughness, and quality of technical publications.

**Fred E. Weick** – In recognition of pioneering full-scale propeller research, development of the low-drag NACA engine cowling, and spin-resistant aircraft design.

**Eastman N. Jacobs** – In recognition of pioneering development of the NACA series of airfoils—especially the laminar flow series—and design of important Langley wind-tunnel facilities.

**John Stack** – In recognition of pioneering research and leadership related to the challenges of supersonic flight, including leadership of the X-1 Program, and contributions to development of the slotted-wall wind tunnel.

**Theodore Theodorsen** – In recognition of groundbreaking research on the phenomenon of aircraft flutter, and development of the use of Freon in wind tunnels to enable aeroelastic testing in simulated flight-like environments.

**Ira H. Abbott** – In recognition of outstanding contributions to the development of the NACA series of airfoils, and exemplary leadership of NACA and NASA programs of critical national importance.

**Robert T. Jones** – In recognition of extraordinary contributions to the fundamental understanding of aerodynamic principles, and development of the “swept-back” wing enabling efficient supersonic flight.

**John V. Becker** – In recognition of pioneering contributions to the technology of hypersonic flight, including design of the 11-Inch Hypersonic Tunnel and visionary leadership that culminated in the X-15 research aircraft.

**Samuel Katzoff** – In recognition of pioneering contributions to the theoretical understanding of fundamental aerodynamic phenomena and leadership to ensure the quality of NACA and NASA research publications.

**Robert R. Gilruth** – In recognition of pioneering contributions to the quantitative understanding of aircraft handling qualities, concepts for flight testing in lieu of wind-tunnel testing, and leadership of America’s manned spaceflight program.

**John P. Reeder** – In recognition of an exemplary career as NACA and NASA’s preeminent test pilot and his critical role in the development and implementation of the Terminal Configured Vehicle Program.

**W. Hewitt Phillips** – In recognition of pioneering research in aircraft flight dynamics and development of multiple, unique simulation technologies at Langley—specifically, the Lunar Landing and Differential Maneuvering Simulator Facilities.

**John C. Houbolt** – In recognition of single-handed, unwavering advocacy of the lunar-orbit rendezvous concept that enabled accomplishment of President Kennedy’s objective of a manned mission to the moon and back during the decade of the 1960s.

**Richard T. Whitcomb** – In recognition of revolutionary contributions to the science of aerospace—the area rule, supercritical wing, and winglets—that enabled supersonic flight of military aircraft and energy-efficient flight of commercial aircraft.

**Christopher C. Kraft** – In recognition of early research in aircraft handling qualities and subsequent creation of the concepts and processes for the planning, execution, and control of manned spaceflight missions.

**Maxime A. Faget** – In recognition of extraordinary engineering insights and innovation that enabled Project Mercury and technical leadership of development of NASA’s manned space systems from Mercury to the Space Shuttle.

**Eugene S. Love** – In recognition of pioneering contributions to the technology of lifting bodies for controlled entry from space—especially the HL-10—and leadership of Langley’s critical roles in development of the Space Shuttle.



Langley Research Center NACA and NASA Hall of Honor, Class of 2015



NACA and NASA Wall of Honor in the Langley NACA Room, Building 2102

**ONE DOWN, MORE TO COME—  
DUNCAN CONTINUES ONWARD**

The first induction ceremony was a resounding success, and Duncan continued to serve as Chair of the HoH Committee through two subsequent HoH Classes—the second was held June 1, 2017 (to align with celebration of the Center’s 100<sup>th</sup> anniversary), and the third on July 14, 2022.

Duncan’s initial thoughts were to establish a dedicated, permanent wall of honor to display a plaque for each honoree; and this, too, was realized in the NACA Room at NASA Langley

Building 2102—with the theme of the original NACA logo.

**DUNCAN’S LEGACY**

Duncan does not have a plaque on this wall, but surely for the fourth induction ceremony, the LAA and NASA Langley will find an appropriate way in which to honor Duncan as the visionary and leader of the NACA and NASA Hall of Honor—one man’s idea, initiative, and follow-through resulting in a significant series of events recognizing many for their exemplary contributions to aeronautics, space, and earth and space sciences—**Duncan McIver!** ♦

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Rich Antcliff

**Vice President's Report**

*By Kathy Ferrare, Vice President and Programs Chair*

We had another enlightening line-up of speakers these past few months that focused on both past, present, and future NASA Langley endeavors. We learned the history and strategic planning since 2000 for NASA Langley's facilities with Loretta Kelemen, the progress of the Low-Boom (X-59) Flight Demonstrator Project over the past 80 years with Dave Richwine, and the personal, inside look at NASA Langley's role in the recent Intuitive Machines Lunar Mission from Robert Maddock, Daniel Litton and Glenn Hines who lived through it! We were very grateful to have such exceptional presentations and discussions!

An exciting line-up of speakers and events are also scheduled for the remainder of 2024. The Reminder list on page 5 of this newsletter provides a quick view of our upcoming activities. We also have additional details on events for the remainder of the calendar year on our website

at <https://larc alumni.org/21-events>. We hope to see you there!

If someone or an activity caught your attention that you feel other LAA members would be interested in, we welcome your suggestions as we start planning for 2025! Please share your thoughts with me ([kferrare@verizon.net](mailto:kferrare@verizon.net)) or any board member. We are dedicated to engaging all LAA members in our planning process.

Thank you for everyone's participation at our monthly meetings and feedback on our presenters! It has been wonderful to see so many people attend in person and virtually.

The LAA Board appreciates your participation! ♦



**Treasurer's Report**

*By Ray Rhew, Treasurer*

An update from the Treasurer begins with a thank you to all of those who provided inputs on a new initiative to develop a budget plan. We have had a couple of discussions at Board meetings and recently using Microsoft Teams to estimate our anticipated income and expenses over the next five years. Our primary objective is to help plan the use of our funds to maximize the LAA impact in the community that is in line with our mission and by-laws.

One recent outcome from these

discussions was the formation of an ad hoc committee on Education and Outreach that is being graciously led by Lil Richwine. We look forward to rolling their input into the overall budget plan and sharing with our members on a regular basis. Additionally, if you have any input or suggestions for the LAA budget plan, please let us know.

Finally, thanks to all those who have paid their dues. And a friendly reminder to those who have not to kindly provide your payment as soon as possible. ♦

## VASBA Update

By Jack Schlank

On March 27, VASBA, in conjunction with the Peninsula Chamber of Commerce, was the featured organization for a Spotlight on the Peninsula event at the Newport News/Williamsburg Airport. The Spotlight on the Peninsula series is designed to highlight the critical components of the economic growth engine on the Peninsula, and to bring community leaders together to listen, learn and engage. VASBA sponsored four presentations at the two-hour event:


- 1) Virginia AeroSpace Business Association Overview, Jonathan Kelly, President of VASBA
- 2) Introduction to the Virginia Space Grant Consortium (VSGC), Chris Carter, Director
- 3) TruWeather Solutions work with City of Hampton, Don Berchoff, CEO and co-founder; Chris Carter, VSGC

- 4) 4-D Visual Image Correlation in Aerospace, Dr. Dave Dawicke, Senior Research Scientist, Analytical Services & Mechanical, Inc. (AS&M)



Chris Carter, VSGC

VASBA hosted its second luncheon of the year on May 29. Our two featured speakers were Rosemary Baize, Director of the Strategic Partnerships Office at NASA Langley, and Nancy Grden, President and CEO of the Hampton Roads Executive Roundtable. The focus of the presentations was on the future of NASA and the aerospace industry in the Hampton Roads region. ♦



### Reminder— Upcoming events

**June 11 (tour only):** Flight Dynamics Research Facility Member & Board meetings are canceled!

**July 9:** LAA Picnic (Langley Cafeteria—see below)

**August 13:** Let's Jump into Fall! Balance, Stress, & Mental Health (Angie Claud); York-Poquoson Master Gardener (Becky Bales)

**September 10:** Culture and Safety Concerns (Charlie Camarda)

## Annual LAA Picnic

By Kathy Ferrare, VP and Programs Chair

Summer is right around the corner and that means it is picnic time!

Come join your fellow LAA families in a night of food, friendship and fun!

We look forward to seeing you there! A sign-up form will come out in June. ♦



### LAA Picnic

July 9, 2024  
4:00 pm – 7:00 pm

Dinner served  
at 5:00 pm

### NASA Langley Cafeteria

Seating inside and  
out on the deck

\$30 per person

### Main Menu

Pulled pork barbeque  
with buns

All beef hot dog bar –  
hot dogs, buns,  
chili, sauerkraut,  
cheese, and fixings

Cole slaw

Potato salad

Baked beans

Ice water and iced tea

### Vegetarian Option

Shredded jackfruit  
in barbeque sauce

### Dessert

Fresh baked cookies

## X-43A 20<sup>th</sup> Anniversary Celebration at NASA Langley

By Dave Reubush

March 27 was the 20<sup>th</sup> anniversary of the first successful flight of the X-43A. This flight demonstrated that scramjets (supersonic combustion ramjets) can accelerate a vehicle at approximately Mach 7, which people had been trying to do for over 40 years. This flight was followed by another successful flight at approximately Mach 10 on November 16.



*X-43A team at the 20<sup>th</sup> anniversary celebration*

The X-43 project grew out of the cancellation of NASP (National Aero-Space Plane, X-30). While the NASP project never reached its goal of developing a single stage to orbit (SSTO) vehicle before cancellation, many technologies were developed which offered the hope of scramjets that worked. Hypersonics had a history of interest being generated, projects being initiated, money being spent, projects being cancelled, followed by teams being disbanded and a lot of the acquired knowledge being lost. Lana Couch, Director of the NASP Office at Langley, did not want this to happen again with the end of NASP. At this time, the NASP Office had a design contract with what was McDonnell Douglas, St. Louis to do a design of a Dual Fuel attack vehicle using the NASP technology. Lana obtained some money and added a task to the contract to do a preliminary design of a small demonstrator vehicle which would demonstrate that scramjets do work.

The maximum size of the vehicle was set at 12 feet, not only to keep

the cost down, but also 12 feet was the maximum size of a model which could be tested in the 8-ft. High Temperature Tunnel, allowing a direct wind tunnel-to-flight correlation. Due to scheduling issues, this was not possible, so a full-scale model was tested in the tunnel. Shortly after the preliminary design was completed, Dan Goldin, the NASA Administrator, gave a speech at what was then Dryden Flight Research Center saying that the skies over Dryden would be darkened with X-planes. The reality was that Code R (the Office of Aeronautics and Space Technology) was given enough money for two X-planes. Code R held a competition. Since Langley already had a preliminary design for what became the X-43, LaRC won one of the two.

In the early days, the project was evaluating where the flights would occur and was looking at both Wallops and Dryden. NASA Headquarters decided that the flights would be on the Pegasus/Dryden B-52, and Vince Rausch, who had been the head of the NASP Division in Code R, was appointed as the Project Manager. A competition was held to pick the prime contractor and MicroCraft of Tullahoma, TN, supported by the former Rockwell International piece of Boeing, won the competition. In 1997, Boeing bought McDonnell Douglas, so the folks who had done the preliminary design joined the team.

Design and construction continued through the late 1990s and early 2000s. The first flight was attempted on June 2, 2001. Unfortunately, the first flight went out of control and was destroyed. An Accident Investigation Board was convened, and work was undertaken to determine what had caused the mishap. Data from tests in the 16-ft. Transonic Tunnel predicted what had happened.



*X-43A 20<sup>th</sup> Anniversary celebration*

The decision was subsequently made to remove some of the propellant from the Pegasus such that it did not have to be launched at the low altitude/high dynamic pressure condition of the first flight. So, on March 27, 2004, the second flight was attempted and was successful. The X-43 was boosted to about Mach 7 at an altitude of about 100,000 ft. on the front of the Pegasus; the vehicles separated, and the X-43 accelerated under scramjet power, resulting in the first successful flight of a scramjet powered vehicle. ♦

## You Just Never Know ...

By Kathy Ferrare, Vice President

You just never know where you are going to see a NASA Langley retiree. My daughter dragged me to the YMCA because she wanted to go to a yoga class on Saturday morning. She was home for 48 hours so I said “of course” with a smile on my face! Who is next to her but a lawyer from NASA Langley—Eric Rissling! At the end of class, he asked if I was still working at NASA. I said no and he said he retired around 2022. I asked if he joined the LAA? He said no, that he asked a friend of his for information but hadn’t heard back. My daughter took his number down and I sent him the LAA link. He texted me back and said that he just filled out the paperwork! A good Saturday morning—got some exercise and a new LAA member! ♦

## HUNCH Critical Design Review

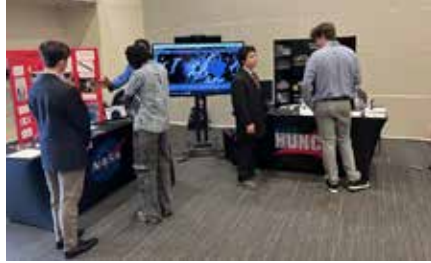
By Dave Hinton, Membership Chair

NASA Langley Research Center held its HUNCH (High Schools United with NASA to Create Hardware) Critical Design Review (CDR) on February 27. The HUNCH mission is to empower and inspire students through a project-based learning program where high school students learn 21<sup>st</sup> century skills and have the opportunity to launch their careers through the participation in the design and fabrication of real-world valued products for NASA. The CDR was similar to a science and engineering fair. Each team had a table to display their project. The LAA was invited to attend and assist in judging the projects.



The teams had an impressive array of projects and small prototypes on display. These included a Lunar Bamboo Greenhouse, Robotic Duster for Space Stations, a Mobility Arm, Edible Packaging for Long Duration Missions, Biomedical: 3D Printed Instruments, a Virtual Reality Lunar Habitat, and several others that I did not have the time to visit. There were roughly 20 teams displaying with two to five students per team and representing numerous high schools including Grafton, Warhill, Independence, Tuscarora (Leesburg), and Landstown Governor's STEM Academy. The teams had been given a set of space technology challenges and were expected to conduct their research, design a prototype, conduct testing, and provide an informative presentation including oral and printed brochure formats. The judges were given a form with attributes to

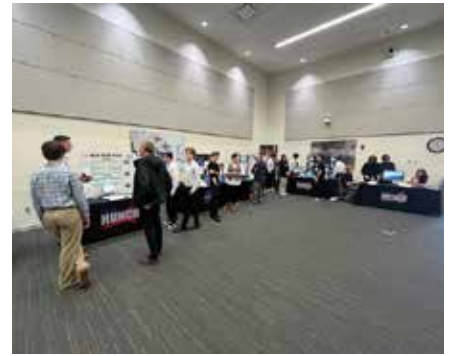
score and space to enter feedback that will go to the teams.



The skills demonstrated by these teams were phenomenal, far beyond any science fair project I experienced in my high school or early college years. I found students that not only well articulated the trades involved in their projects but were also able to offer sound replies when asked about application in other domains. For example, one team produced a pneumatically actuated, flexible arm and end effector for use inside the ISS. When asked about applications to other environments (Mars surface, for example), they demonstrated knowledge of the priorities of various materials at low and high temperatures. Other teams produced semi-operational subscale models of greenhouses for growing bamboo and food crops on the moon, and they had well-considered the integration of numerous disciplines including properties of the structure, energy requirements for lighting, optimal water usage and recycling, plant growth in various soil types (they were given lava rock to crush to emulate moon soil), and use of the greenhouse to aid in carbon scrubbing of the air.



This program gives the students practical exposure to a wide range of skills that will be necessary in their future careers, including teamwork, analyzing requirements, seeking subject matter expertise in multiple fields, prototype development and testing, and effective communication to others. I found that most students did not simply design a system to a set of printed requirements but also seemed to have done their research to understand the context and environment in which an actual system would be used.



I would encourage all LAA members to participate in events such as this for the Center. It is of great benefit to the Center and the students as we have significant experience in multi-disciplinary project management, development and testing, and effective presentation. We know how to ask questions of researchers and engineers and provide constructive feedback. I believe that the more judges present, the richer the experience would be for the students.

Second, for those of us that are not quite ready to declare our careers done, it was a great experience to dive back into the technology and mission application domain. I asked each team a final question: "So, was this project fun to do?" They all said yes. Frankly, for me, the interaction with the students and participating in this CDR was fun! ♦

Langley History ... from 1936

Contributed by Bill Tennis and Kathy Ferrare

The New York Times

THURSDAY, MAY 21, 1936

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WASHINGTON, May 21.—The new 700-mile-per-hour wind tunnel at Langley field, Va., was put to a severe test today when a model of a biplane was put under a strain of 500 miles an hour, according to engineers here.

The new tunnel was put to a severe test today when a model of a biplane was put under a strain of 500 miles an hour, according to engineers here.



At the end of a record-breaking flight.

HUSBAND AND WIFE WIN COLLEGE HONORS

Both With Average Grade of 95, in the Scholarship Society of N. Y. U. Engineering Dept.

George Fuller P. White of the New York University College of Engineering received a scholarship award for his first term in the College of Engineering.

BROOKLYN MAN MISSING

Search Underway for Missing Man Who Was Last Seen in Manhattan.

SEARCHERS are looking for a missing man who was last seen in Manhattan on Monday night.

AT THE END OF A RECORD-BREAKING FLIGHT

Left Washington carrying the record which resulted from landing at the Cranston Airfield, Cranston, London, after 300 hours from Cape Town.

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WASHINGTON, May 21.—The new 700-mile-per-hour wind tunnel at Langley field, Va., was put to a severe test today when a model of a biplane was put under a strain of 500 miles an hour, according to engineers here.

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**Why every gin drink**

need G

6620 ASSOCIATED PRESS PHOTO G-UTION: USE CREDIT. FROM NEW YORK

WORLD'S LARGEST HIGH SPEED WIND TUNNEL. LANGLEY FIELD, VA., MAY 20— THE NEW 700 MILE PER HOUR WIND TUNNEL WAS SHOWN FOR THE FIRST TIME TODAY AT LANGLEY FIELD BY THE NATIONAL ADVISORY COMMITTEE FOR AERONAUTICS. THE WALLS ARE MADE OF REINFORCED CONCRETE 18 INCHES THICK AND LINED INSIDE WITH STEEL PLATES. AT FULL SPEED, PRESSURE INSIDE LOWERS TO THAT ENCOUNTERED AT 14,000 FEET.

ASSOCIATED PRESS PHOTO

A LIST 5/20/36 8:30PM SS PULL.



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The LAA Newsletter is published quarterly. Please submit articles for publication to [rick.ross@verizon.net](mailto:rick.ross@verizon.net) no later than the 10th of February, May, August, or November for publication the following month. Please contact [mhueschen@gmail.com](mailto:mhueschen@gmail.com) to subscribe or unsubscribe.