

TECHNICAL LIBRARY

QUARTERLY NEWSLETTER



WINTER 2019 / VOL. 1, NO. 3



NASA | ART

HISTORY SPOTLIGHT

Langley & The Noble Order of the Green Cow
by Stephen J. Hales

50 YEARS OF SERVICE

An Interview with Research Physicist, Sheila Thibeault

...AND MORE!

T



With the flower I am in the present; with the book I am in the past. I go into my library and all history unrolls before me.

—Alexander Smith, 1863

The Odyssey Continues, by Robert Stevens, 1989.

"How truly fitting that, in the deep sweetness that does abide in all of us, this configuration and its entire meaning comes to life in the manner painted, and returns from the final void in dead silence, and in doing so reminds us always that we are all kindred in a way, on the long voyage."

NASA/Art : 50 Years of Exploration, 2008, p. 107.



PUBLISHED BY THE FLOYD L. THOMPSON TECHNICAL LIBRARY
AT NASA LANGLEY RESEARCH CENTER

EDITORIAL STAFF

EVELYN GREEN
CIRCULATION

JASON A. JACOBS
LEAD TECHNICAL INFORMATION SPECIALIST

GRETA LOWE
LARC STI & IT PROJECT MANAGER

DOROTHY NOTARNICOLA
LEAD CONTRACTOR LIBRARIAN

SALLY SCHWANER
INTERLIBRARY LOAN

MICHAEL PRITZ
PATRON OUTREACH



Information Management Branch (B702)
Office of the Chief Information Officer

www.library.larc.nasa.gov

TECHNICAL LIBRARY



QUARTERLY NEWSLETTER

Winter 2019 | Volume 1, Number 3

News

SPECIAL REPORT

08. *Technical Library Relocates to Building 1268A*

Print

BOOK-OF-THE-MONTH

10. *NASA/Art : 50 Years of Exploration*, by J. DEAN, et alia, 2008

RARE DOCUMENTS

12. *L'Avion-Automobile*, by R. TAMPIER, 1921

NEW TITLES

14. *Flyboys, celestial navigation, and leadership & communication*

History

FROM THE ARCHIVES

16. *Langley & The Noble Order of the Green Cow*, by S. HALES

LANGLEY HALL-OF-HONOR

18. featuring DR. FLOYD L. THOMPSON, LaRC Center Director, 1960-1968

People

RESEARCHER SPOTLIGHT

20. featuring SHEILA A. THIBEAULT, PH.D., Research Physicist

MEET-A-LIBRARIAN

23. featuring GRETA M. LOWE, LaRC STI & IT Project Manager

Digital

SEARCH & DISCOVERY

25. *What's New @ IEEE*

LIBRARY TUTORIAL

26. *Super Searcher Tips: Boolean Operators & The Advanced Search*

Artwork

FRONT COVER

01. *Tranquility*, by W. MICKLEY, 2019

NACA ILLUSTRATORS

16. *The Green Cow Celebrates at the Armory*, by D. SEVERANCE, 1945

NASA | ART

28. *Untitled Puzzle Cartoon*, by S. HOGGE, 1951

32. *Selected Christmas Covers*, by VARIOUS ARTISTS, 1944-1970

02. *The Odyssey Continues*, by R. STEPHENS, 1989

09. *Sky Garden*, by R. RAUSCHENBERG, 1969

11. *The Great Moment*, by P. CALLE, 1969

15. *Wildlife Preserve*, by J. MCCOY, 1970

19. *Maiden Flight of the B-1*, by N. GALLOWAY, 1989

22. *The Mating Room*, by L. DODD, 1969

24. *Florida Coast—Fire Pillar*, by J. CUNNINGHAM, 1981

27. *Gemini Recovery*, by R. MCCALL, 1965

29. *Astronaut Asleep in Tunnel*, by J. CHIZANSKOS, 1970

30. *Stardust*, by P. RAMIREZ, 2007

Among the Contributors



American artist **John W. McCoy** (1910-1989) painted landscapes, portraits and still lifes in oil paint, watercolor, tempera, and mixed media. Known for the “brooding quality” and “smoldering power” of his work, McCoy was one of the first artists to work with the NASA Art Program in 1963.



Research Physicist **Dr. Sheila A. Thibeault** began her career at NASA Langley working to design and run tests for the Rendezvous Docking Simulator. Fifty years later, she is still helping to keep astronauts safe by developing radiation shielding materials for vehicles, habitats, and clothing.



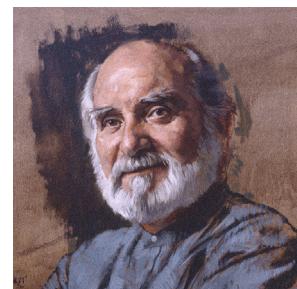
Graphic artist, calligrapher, and painter **Wesley T. Berryman, Jr.** (1921-2017) began his career at the NACA Langley Aeronautical Laboratory in 1950 and retired from LaRC in 1983. Berryman designed a number of the original Christmas covers for the Center's *Air Scoop* publication.



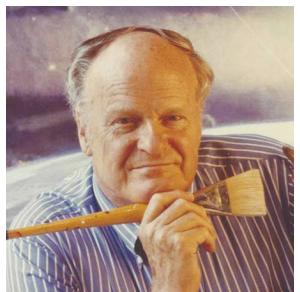
IT Project Manager and Librarian **Greta Lowe** graduated with her Master's in Information Studies from FSU, where she studied IT systems and information retrieval. After 15 years in academia, she joined Langley's OCIO in 2001. Greta's favorite thing about NASA is supporting big dreamers.



Painter and photographer **David A. Willment** (1913-1982) began his Langley career in 1948 and was appointed head of the Technical Illustrating Section in 1951. Before retiring in 1971, Willment painted murals displayed at both the original NACA Headquarters and the Virginia War Museum.



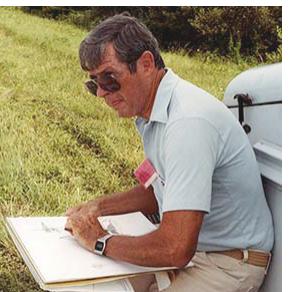
As the sole artist hired by NASA to cover the Apollo 11 astronauts up close, **Paul Calle** (1928-2010) was present for the crew's last few hours before they departed for the Moon on July 16, 1969, capturing their morning preparations in an intimate series of on-the-spot pen and ink sketches.



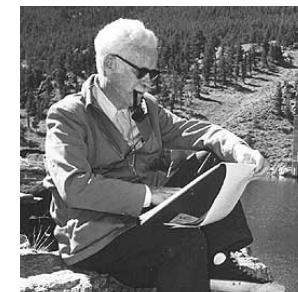
From giant murals to tiny postage stamps to mission emblems worn by astronauts, **Robert T. McCall** (1919-2010) has done more than perhaps any other artist to capture America's presence in space. Isaac Asimov once referred to McCall as “the nearest thing we have to an artist in residence in outer space.”



Before he gained notoriety for his radical LOR concept, **Dr. John C. Houblon** (1919-2014) was quite the social butterfly in his early years at the lab. In the 1940s, he chaired the Green Cow committee, played right field for the LMAL All-Star team, and starred in numerous plays at the Hampton Little Theatre.



Born into a family of pilots, **Nick Galloway** (1927-2003) elected to pursue his aviation career on the canvas. With paintings exhibited at the Kennedy Space Center, Air Force Museum and White House, the livelihood of his work was a whirlwind of wings and clouds splashed out in oils and acrylics.



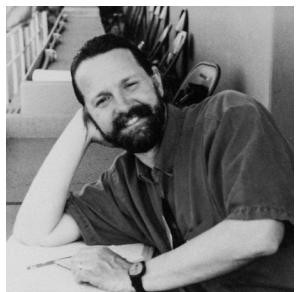
Few NASA artists have embraced the style of abstraction as much as Georgian painter **Lamar Dodd** (1909-1996). Still, his work for the program was fundamentally social, inspired by the truth in nature and interpreted through his subjective imagination to forge a poetic unity on the canvas.



Acclaimed woodcut print artist **J.J. Lankes** (1884-1960) joined NACA in 1943. A good friend of the poet Robert Frost, Lankes' *Brief History of Aeronautics* panels, now on display at the Kennedy Space Center, once graced the rotunda of the LMAL Administration building.



Towards the tail-end of WWII, illustrator **Dorotha C. Severance** (1922-2005) served as Art Editor for the *Air Scoop*. In 1945, she was named Art Director of the Green Cow social club, where she created a series of whimsical cartoons that portrayed the more spirited, playful side of Langley in its early years.



Indiana artist **James L. Cunningham** (1948-1991) was selected for his first NASA assignment with the Apollo-Soyuz launch on July 15, 1975. His hard-edged abstract paintings combined the physical with the metaphysical, creating a lasting imagery that equaled his soaring imagination.



In 1969, NASA invited **Robert Rauschenberg** (1925-2008) to witness the launch of Apollo 11, inspiring his *Stoned Moon* series of lithographs—an assemblage of diagrams, drawings, and photos that evoke the trepidation and wonder conveyed by the technological and astronomical sublime.



Painter and sketch artist **Nettie J. Chandler** (1912-2009) began her career with Langley's Technical Illustrating Section in 1956. She composed hand-drawn portraits of Samuel P. Langley and Floyd L. Thompson and won an award in 1968 for her logo design for the NASA Activities Association.



As the third Director of NASA Langley, **Dr. Floyd L. Thompson** (1898-1976) played a critical role in guiding the Center's research during the challenging beginning of the crewed space flight era. He was inducted into Langley's Hall of Honor in 2017 as part of the LaRC Centennial Celebration.



As a graphics specialist at NASA Langley's Media Solutions Branch, **Wade A. Mickley** designs unique materials to help leaders, scientists, engineers, researchers, and more communicate critical information both to each other and the public. Steve is an avid fan of the good ol' British pastimes of cricket & rugby.



As a graphics specialist at NASA Langley's Media Solutions Branch, **Wade A. Mickley** designs unique materials to help leaders, scientists, engineers, researchers, and more communicate critical information both to each other and the public. Steve is an avid fan of the good ol' British pastimes of cricket & rugby.

NEWS: Technical Library Relocates to Bldg. 1268A

SPECIAL REPORT



The Technical Library will reopen on January 21, 2020 in Bldg. 1268A, 2nd Floor, Room 2109.

After spending the past 50 years in Bldg. 1194, the Technical Library and its staff said their final goodbye to the old facility on November 18th. The Library plans to reopen its doors at its new quarters in Bldg. 1268A on January 21, 2020, with an official "grand-opening" currently slated for early February. During the temporary closure, Center employees will still retain access to the Library's online resources and services, including E-Requests, E-Databases, and E-Journals—although some services such as Interlibrary Loan may be delayed or postponed.

Why We Moved

Constructed in 1942, Bldg. 1194 is one of Langley's oldest facilities. Before its conversion to a Library in the late 1960s, the 44,500 ft² building housed many tenants, including the West Area sheet metal shop, the model finishing shop, the technical service office, and the Equipment Engineering Shop. Other occupants even included some of the first engineering branches in Langley's West Area. In 1969, the second floor underwent a major renovation to house a new Technical Library (which, prior to that, was located at the LaRC hangar in Bldg. 1244). Fast forward to 2019, and despite the Center's best efforts to maintain its operational utility, internal systems have slowly begun to fail, resulting in a decrease in the Library's ability to reliably preserve its collections or accommodate modern communications technology. After a rich 77-year history, Bldg. 1194 will be scheduled for disposal beginning next Fall.

How We Moved

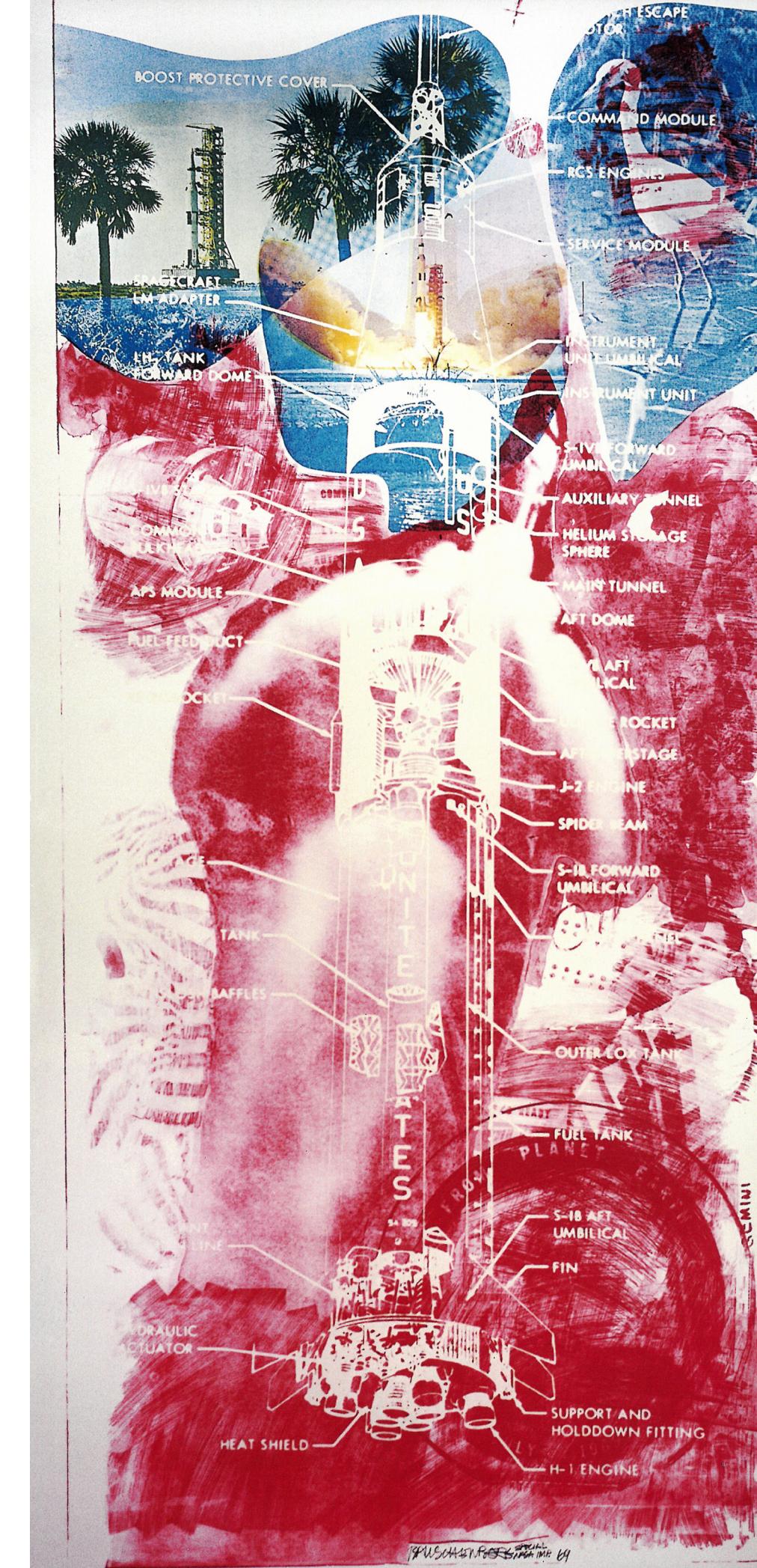
Thanks to the communication and collaboration efforts of many internal and external organizations, the library has sought to preserve as much of its physical collection as possible despite a notable reduction in overall storage capacity. Collaborators include:

- NASA History Office and NASA Archivist
- LaRC Center Operations Directorate
- Smithsonian Institution
- Federal Records Center
- National Archives and Records Administration

Subscription Consolidation

While the library's physical footprint has been reduced, there is optimism that NASA will increase access to subscription content beginning January 2020. To that end, the Agency Library Program Manager is collaborating with the NASA Chief Scientist to identify Agency-level funding for research-critical subscriptions. The NASA CIO is also working with the Agency Library Working Group to develop a more centralized library portal for accessing Agency and Center-specific subscriptions and primary research applications. □

If you have questions or comments regarding the library's transition to Bldg. 1268, feel free to email us anytime at: LaRC-DL-Infoservices@mail.nasa.gov



ROBERT RAUSCHENBERG
SKY GARDEN

Six-color lithograph on paper, 1969

This work, believed to be the largest hand-pulled lithograph printed at the time (89 x 49"), is part of the "Stoned Moon" series, which consists of thirty lithographs done by Rauschenberg in the four months following the first manned landing on the Moon. It gives a kaleidoscopic impression of images at the Kennedy Space Center. Rauschenberg was invited to the launch site by the NASA Art Program for the start of the Apollo 11 mission to the Moon in July 1969.

TL789 .U5 D43 2008
Dean, James D, et al. NASA/Art: 50 Years of Exploration. Abrams : In Association with NASA and the Smithsonian Institution, 2008, p. 75.

PRINT: Book-of-the-Month

FEATURED ITEMS FROM THE LIBRARY STACKS

NASA/ART: 50 Years of Exploration (2008)

Authors: James Dean and Bertram Ulrich

Call Number: TL 789 .U5 D43 2008

Publisher: New York : Abrams : In association with NASA and the Smithsonian Institution.

Contents:

Foreword: The Next Step, by Michael Collins

Preface, by Tom D. Crouch

Introduction, by James Dean & Bertram Ulrich

I. Blazing the Trail: Mercury and Gemini

II. On to the Moon: Apollo and Future Moon Missions

III. Soaring to the Skies & Heavens: Aeronautics & the Shuttle Era

IV. New Worlds: Exploration Beyond our Home Planet

Afterward: Witness and Celebrate NASA's Future, by Ray Bradbury

The spring of 1962 was a heady time for the men and women of NASA. On February 20, John Glenn became the first American to orbit the Earth. For the first time since the launch of Sputnik on October 4, 1957, the United States was positioned to match and exceed Soviet achievements in space. NASA was an agency with a mission—to meet President John F. Kennedy's challenge of sending human beings to the Moon and returning them safely to Earth by the end of the decade. Within a year, three more Mercury astronauts would fly into orbit. Plans were falling into place for a follow-up series of two-man Gemini missions that would set the stage for the Apollo lunar voyages.

With some noteworthy successes under his belt and the prospect of an even brighter future before him, NASA administrator James Webb paused to consider ways in which his agency could better capture and communicate the excitement, energy, and significance of the space effort. On March 16, 1962, he sent a memo to his staff suggesting that they consider "just what NASA should do in the field of fine arts to commemorate past historic events such as Shepard's and Glenn's flights, as well as future historic events that we know will come to pass."

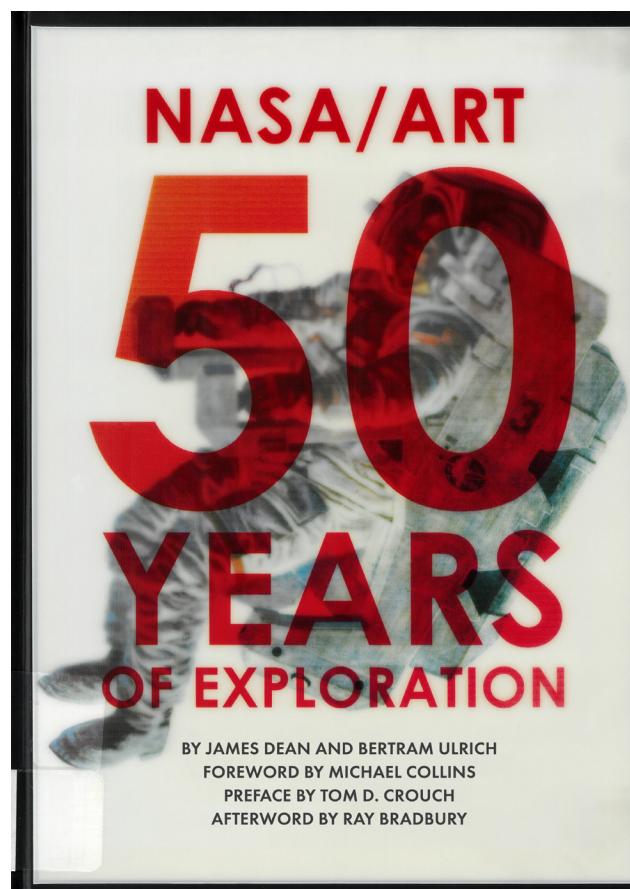
John Walker, the director of the National Gallery of Art, applauded the idea, urging NASA to enlist artists who could interpret what would surely "rank among the more important events in the history of mankind." While cameras would document every detail of the space program, artists could tell a deeper story; they could record "not only..the physical appearance of the strange new world which space technology is creating," but could also "edit, select, and probe for the inner meaning and emotional impact of events which may change the destiny of our race."

Webb's memo ultimately led to the establishment of the NASA Art Program in 1963. Since then, NASA's art collection has grown to include works by artists as diverse as Mitchell Jamieson, Norman

Rockwell, Annie Leibovitz, James Wyeth, Andy Warhol, and Nam June Paik. For half a century, artists participating in the program have been documenting the extraordinary adventure of spaceflight in ways that no camera could match. Selected works from the collection are featured on the following pages of this newsletter:

02. *The Odyssey Continues*, by Robert Stephens, 1989
09. *Sky Garden*, by Robert Rauschenberg, 1969
11. *The Great Moment*, by Paul Calle, 1969
15. *Wildlife Preserve*, by John McCoy, 1970
19. *Maiden Flight of the B-1*, by Nixon Galloway, 1989
22. *The Mating Room*, by Lamar Dodd, 1969
24. *Florida Coast—Fire Pillar*, by James Cunningham, 1981
27. *Gemini Recovery*, by Robert McCall, 1966
29. *Astronaut Asleep in Tunnel*, by Joseph Chizankos, 1970
30. *Stardust*, by Paul Henry Ramirez, 2007

Published in celebration of NASA's 50th anniversary, *NASA/Art: 50 Years of Exploration* (Abrams, 2008) presents a selection of nearly 150 paintings, drawings, photographs, and sculptures chosen from the archives of NASA and the National Air and Space Museum. Featuring essays by astronaut Michael Collins, curator Tom Crouch, and novelist Ray Bradbury, *NASA/Art* stands as a lasting record of the impact of space exploration on the artistic imagination. □



PAUL CALLE

THE GREAT MOMENT

Oil on panel, 1969

On Sunday evening, July 20, 1969, at 10:56 p.m. (EDT), Apollo astronaut Neil Armstrong became the first human being to set foot on the Moon. "That's one small step for man, one giant leap for mankind," he radioed back to Earth. Armstrong and fellow astronaut Buzz Aldrin placed scientific instruments on the Moon and gathered soil and rock samples.

PRINT: Rare Documents

UNIQUE TREASURES FROM THE DOCUMENTS ARCHIVE

L'Avion-Automobile (1921)

Author: René Tampier

Report Number: 86H33668

Format: 24 p.: photographs; 35 cm.

Classification: Unclassified

On November 11, 1921, René Tampier unveiled his Avion-Automobile at the 7th Salon de l'Aéronautique at the Grand Palais in Paris. After displaying the aircraft's capabilities in flight, Tampier surprised the crowd when, upon landing, he folded its wings, let down the rear wheels, and drove the machine tail-first through the congested streets of Paris, stopping only after he climbed 130m atop the hill at Montmartre. Fitted with a small auxiliary engine housed below the main Hispano-Suiza 8F, the Aeroplane Motor-car reached a maximum groundspeed of 25 mph.

continued on next page

Tampier took out his first patent for the design on November 10, 1909. After a series of failed experiments, World War I forced Tampier to temporarily shelve the project. After the war, he realized the hopelessness of his original scheme: the wing loading and drag values were such that no matter what he did, the result would always be flawed. It was also unfeasible to operate the machine on the ground via the aero-engine, which, even throttled down to its minimum revs, was far too powerful for road travel.

He then turned his attention to tackling the problem of designing an aircraft that was self-propelled and steerable on land. The answer? A second low-powered engine to drive the main landing wheels through a standard car-type transmission (and also double as a starter for the main engine). The complete mechanism was fully realized in 1919, when Tampier first considered driving the machine on the ground tail-first—a concept achieved by fitting a retractable pair of road wheels near the tail. Tampier, who flew as a passenger with his pilot, Meyniel, could operate the

starting magneto on his right and the levers controlling the small engine, gearshift and brake on his left. At his feet lie the brake and declutching pedals for the wheels and small engine.

A conversation I had on the Auvours Field with that man of genius, Wilbur Wright, whose aeroplane I had studied, bent my thoughts towards this end; to produce an aeroplane with which I could leave my garage in town, spread my wings and fly.

— René Tampier, 1934

After the 1921 exhibition, Tampier published *L'Avion-Automobile*, stating that his invention would "mark a new epoch in the history of aviation" by resolving a number of critical obstacles:

1. The "Fog" Problem — Pilots shrouded by fog would no longer be stranded where they found themselves grounded but could now continue their journey via road to their destination.
2. The "Garage" Problem — Storing an aeroplane at ones house next to their car will eliminate the cost of using a hangar.
3. The "Breakdown" Problem — The high labor costs associated with dismantling and transporting a broken-down plane will be replaced by the low cost of returning by road.

4. The "Starting" Problem — The small engine used to start the aero-engine avoids the use of carbonic acid and removes the need of employing a mechanic to start the propeller.

5. The "Control" Problem — The auxiliary engine allows for an increase in efficiency and control over mechanical and interior functions, including turbocharging, lighting, heating, ventilation, wireless telegraphy, and photography.

6. The "Military" Problem — With its foldable wings, ground capabilities, and overall ease of assembly, the avion-automobile is suited for military operations by land, air and sea. The auxiliary engine can also facilitate the use of bombs and machine guns.

In December 1921, *Flight International* remarked: "it certainly appears that the idea is worth developing, and it is not inconceivable that in years to come some such arrangement will be found on most commercial machines." Although often looked upon as an aberration, Tampier's experiment was an earnest attempt to demonstrate a system that would eventually come into its own on large aircraft. □

To learn more about René Tampier and his Avion-Automobile, please visit the Technical Library's Documents Collection, located on the 2nd floor of Bldg. 1268A, or browse online at: <https://galaxie.larc.nasa.gov>

(Front cover) Tampier's Avion-automobile tours the streets of Paris in front of L'église de la Madeleine, 1921.



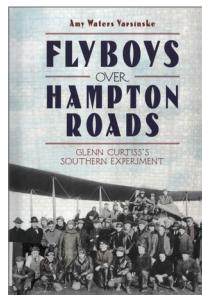
PRINT: New Titles

RECENT ADDITIONS TO THE LIBRARY'S PHYSICAL COLLECTION

Flyboys Over Hampton Roads (2019)

by Amy Waters Yarsinske

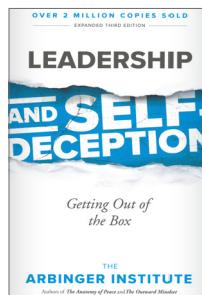
"The story begins in the Fall of 1915, on the cusp of America's entry into World War I. Aviation giant Glenn Curtiss sought a location where pilots could train and aircraft could be tested year-round, and he found it in the warm winds and waters of Newport News, Virginia. There, daring young men and women in their flying machines flew on to fame and into history with their record-breaking flights and the tragic losses that were inevitable in early flight. Join military historian Amy Waters Yarsinske as she uses rare vintage photographs and a deft hand to narrate this astounding and often forgotten period in aviation history." — Back cover



Leadership & Self-Deception (2018)

by The Arbinger Institute

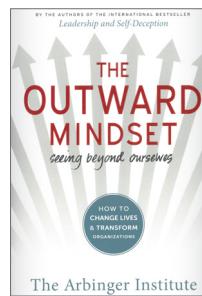
"Since its release in 2000, the popularity of *Leadership and Self-Deception* has gone global—now in its third edition and available in over thirty languages with increased sales year after year. Through a story everyone can relate to about a man facing challenges on the job and in his family, the authors expose the fascinating ways that we blind ourselves to our true motivations and unwittingly sabotage the effectiveness of our own efforts to achieve success and increase happiness. This third edition includes new research about the self-deception gap in organizations and the keys to closing this gap, as well as guidance for how to assess in-the-box and out-of-the-box mindsets in oneself and one's organization." — Back cover



The Outward Mindset (2016)

by The Arbinger Institute

"Unknowingly, too many of us operate from an inward mindset—a narrow-minded focus on self-centered goals and objectives. When faced with personal ineffectiveness or lagging organizational performance, most of us instinctively look for quick-fix behavioral band-aids, not recognizing the underlying mindset at the heart of our most persistent challenges. Through true stories and simple yet profound guidance and tools, *The Outward Mindset* enables individuals and organizations to make the one change that most dramatically improves performance, sparks collaboration, and accelerates innovation." — Back cover



The Nautical Almanac for the Year 2020 (2019)

by U.S. Department of the Navy

"The U.S. Naval Observatory and Her Majesty's Nautical Almanac Office collaborate to compute, from fundamental astronomical reference data, the position, brightness, and other observable characteristics of celestial bodies, as well as the circumstances of astronomical phenomena. This information is of critical importance to navigation, military operations planning, scientific research, surveying and everyday activities of the maritime community. This updated, annual book is the standard resource for marine celestial navigation for the U.S. Navy and contains the following data tabulated at hourly intervals to a precision of 0.1 arcminute:

- the Greenwich hour angle and declination of the Sun, Moon, and navigational planets
- the Greenwich hour angle of Aries
- positions of the navigational stars

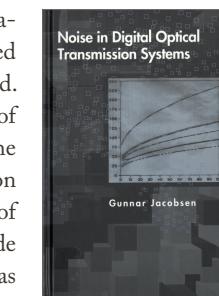
Includes a section on Polar Phenomena with graphs of the Semiduration of sunlight, twilight and moonlight at high latitudes from which times of rising and setting of the Sun and Moon and the times of civil twilight can be calculated." — Publisher's description

Noise in Digital Optical Transmission Systems (1994)

by Gunnar Jacobsen

"The use of digital optical communications is now widespread and has penetrated far beyond the telecommunication world. Recent developments in the design of semiconductor lasers—which have made the use of coherent optical communication systems possible—and in the design of optical (fiber) amplifiers—which have made direct in-line optical amplification as well as optical preamplification in the receiver possible—have created a need for thorough theoretical system models appropriate for such applications.

Jacobsen presents rigorous and detailed system models for a variety of digital optical systems for use in optical network implementations. The models account for the influence of the most significant noise sources and are adequate for describing the error probability performance of coherent as well as preamplified receiver implementations. They are developed with practical system performance in mind and allow a description of receivers with polarization control and polarization diversity operation. A chapter is included about the use of cascaded in-line optical fiber amplifiers and their influence on receiver performance." — Preface



JOHN MCCOY

WILDLIFE PRESERVE

Watercolor on paper, 1970

As Apollo 13 is prepared for its flight to the Moon, wildlife around the launchpad thrives, as usual. John McCoy, one of the first artists to work with the NASA Art Program in 1963, returned to Cape Canaveral to record this view of Apollo 13 just before the start of its ill-fated mission. After an explosion in the service module on the way to the Moon, the planned landing was cancelled.



(Left) The Order enjoying a frolic at the Hampton Armory, February 1945. Note the dancing cow inserted in the right foreground.



(Above) The stage and surrounds in the Hampton Armory as they appear today in The Vanguard Brewpub & Distillery at 504 N. King St.

for the young maiden whose foot fits the shoe which he found after a Green Cow frolic". Alas, the Order was eventually absorbed by the newly-formed Morale Activities Association, which assumed the role of organizing social functions. The last event co-sponsored by the Order was the Valentine Dance held in a dedicated Activities Building on February 14, 1947.

There are two notable events during the history of the Order that are well worth highlighting. The first event, if only for its political incorrectness in today's world, was the "Miss LMAL Contest" held in 1944. This beauty pageant included 16 finalists and was judged by no less than Cecil B. DeMille of Paramount Pictures fame (recall 'The Ten Commandments'). The results were announced with much pomp and circumstance at a Green Cow dance at the Grand View Pavilion on July 28. The lucky winner was Jean Allen (NACA Files), and the three runners-up comprised Nancy McCarthy (Circulation), Elizabeth Scott (Administration), and Ruth Angel (Bulletin). Incidentally, this author is left to ponder whether any of the descendants of these veritable belles are reading this article.....

The second event was that a 25-year old named John Cornelius Houbolt was elected chairman of the Order for 1945. Houbolt had begun his career at NACA upon graduation from the University of Illinois in 1942 (M.S. Civil Engineering). The Green Cow shindig on November 16 honoring Sadie Hawkins Day was organized on his shift. The custom of allowing spinsters to ask eligible bachelors for a dance raised more than a few 'local' eyebrows!

HISTORY: Langley & The Noble Order of the Green Cow

by STEPHEN J. HALES, ADVANCED MATERIALS & PROCESSING BRANCH (D307)

A vital element of The Langley Story revolves around the wide variety of social clubs established by employees to stimulate camaraderie in the workplace. One of the first was the *Noble Order of the Green Cow*, which was founded by young NACA engineers in the early 1920s. This seemingly obscure name claimed its roots from a pre-existing fraternal society at a founding member's Alma Mater. Evidently, the identity of both the person and the institution have been long lost in the sands of time.

In the roaring '20s, the fledgling Langley Memorial Aeronautics Laboratory (LMAL) consisted of a handful of small buildings with less than fifty research professionals. Most of the 'move-ins' were raised and educated in the Northern States, resulting in severe culture shock upon settling in the Tidewater

region. Locals not-so-affectionately referred to the recruits as "Yankees", and the newcomers regarded the sleepy community as a "cultural backwater". As a consequence, the prime objective of the Order was to counteract feelings of oppression by promoting a sense of family.

The well-known phrase "NACA nut" was coined during this decade, not by coincidence. It was the response of local merchants to a new breed of customer requesting lumber be cut to the nearest 1/16th of an inch and enquiring about the exact rpm of a vacuum cleaner. Throughout Hampton and Newport News, interactions with NACA engineers became dreaded by store owners and salesmen alike! The legacy persists, as the term is still synonymous with personalities that exhibit an insatiable appetite for technical details.

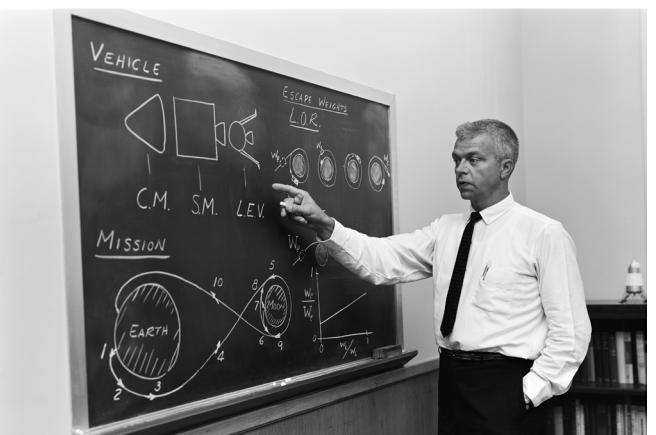


The Order began as a fraternal organization and most new employees were repeatedly subjected to initiation rituals. Examples of such horseplay included a clandestine dose of itching powder or a good-humored jolt from a magneto coil, both designed to test a rookie's moral fortitude. Meetings were conducted in the LMAL dining hall and gatherings tended to be a sober affair due to Prohibition. On one occasion, a committee member was even accused of behaving in an inebriated manner following the consumption of six chocolate milks during a meeting!

Dancing was a popular pastime in those days and an inaugural gala was organized to celebrate the opening of the new Technical Services Building in 1925, which was a big deal. A feature of this event and many subsequent dances was the promenading of the Order's beloved patron, the Green Cow herself. Roughly fabricated from available materials, two engineers endeavored to mimic the graceful gate pattern of a bovine quadruped. The scene was frequently hilarious as the 'hind legs' vainly attempted to keep up with the 'front legs'. Back at work, engineers frequenting these unruly functions were often referred to as "cowboys".

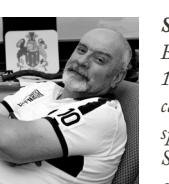
The Order blossomed to several hundred members as the LMAL complement steadily increased. As professionalism set in, the hazing activities faded away and hosting fancy-dress dances at nearby venues became the predominant role (gasoline rations permitting). Usually, costumes were a prerequisite for participation and responded to themes such as the Shipwreck Shuffle, Diplomat's Ball, Cow Stampede, and Sadie Hawkins Day. The Order actually honored Sadie Dearborn Day, that being her married name and engineers being such sticklers for detail! The venue was usually the Hampton Armory on N. King St., but the Grand View Pavilion at the end of Foxhill Rd. was preferred on steamy Summer nights.

Through the years, headliner acts comprised orchestras lead by local talents, such as Red Overton, Edward Travis, Rob Savage, and Kirby Johnson. An event starring Blair Blanton and the Southerners even featured the hot trumpet of Bert "beat-to-the-socks" Miller from the LMAL Sheet Metal Shop! Good times were had by all and a very telling note appeared in the employee newsletter on June 5, 1943; "E. J. Shave is playing 'Prince Charming'. He is looking for the



Former chairman of the Order, John C. Houbolt became an unsung hero of the Apollo program with his Lunar Orbital Rendezvous concept.

During his tenure at Langley, Houbolt advanced from being "Chief Milkman" in the 1940s to gain notoriety for his Lunar Orbit Rendezvous ideas in the 1960s. This radical concept was pivotal in successfully landing and retrieving astronauts from the Moon on the Apollo program. Proof that 'from small acorns, large oak trees do grow', he became an inspiration to us all. □



Stephen J. Hales, Advanced Materials and Processing Branch (D307), graduated from the University of Illinois in 1985 (Ph.D. Metallurgical Engineering). He began his career at Langley in 1988 as a Materials Research Engineer, specializing in the physical metallurgy of metallic materials. Steve is an avid fan of the good ol' British pastimes of cricket and rugby.

HISTORY: Langley Hall of Honor

featuring DR. FLOYD L. THOMPSON, CENTER DIRECTOR (1960-1968)

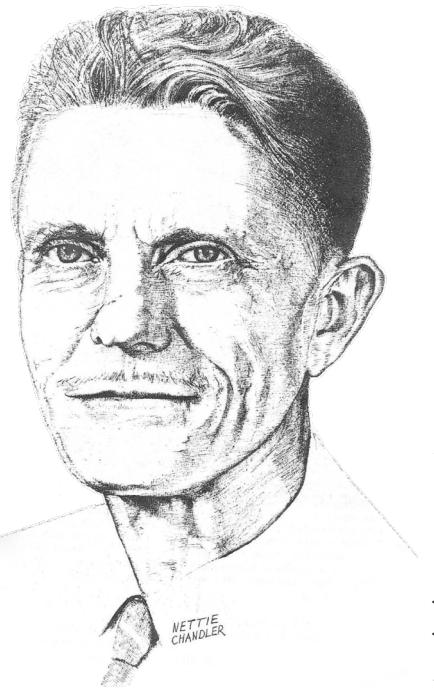
Floyd L. Thompson (1898–1976) was the third Director of NASA Langley Research Center, serving in that capacity from 1960 to 1968. He guided research leading to programs of international importance, including Project Mercury, the concept of erectable space vehicles which led to the development of Echo, the world's first passive communications satellite; and the first solid-fueled launch vehicle, Scout, to propel a satellite into orbit.

Thompson was born in Salem, Michigan, graduated from high school in Salem in 1917, and served the following four years in the United States Navy. After his military service, he entered the University of Michigan and was awarded a bachelor of science degree in aeronautical engineering in 1926.

He began his career at the NACA Langley Memorial Aeronautic Laboratory in 1926. At that time, the LMAL had about 150 employees. Thompson specialized in flight instrumentation and operations, and pressure and loads measurements. He conducted extensive research on a variety of configurations, including aircraft, seaplanes, and dirigibles. He conducted performance analyses of the famous Navy airships, Akron and Los Angeles. He was the author or co-author of 20 technical reports. He became chief of the Flight Research Division in 1940, then progressed through various assignments to become Langley's Chief of Research from 1945 to 1952. He was appointed Associate Director in charge of all research in 1952, and in May 1960, became Director of NASA Langley, succeeding Dr. Henry J.E. Reid.

Thompson served as the chairman of the Apollo 204 (later Apollo 1) Review Board, a committee of seven members, formed to investigate the tragic accident that occurred in January 1967, claiming the lives of astronauts Virgil I. "Gus" Grissom, Edward H. White II, and Roger B. Chaffee. He left Langley in May 1968 to become special assistant to the Administrator at NASA Headquarters, in Washington, D.C. In November 1968, he retired from active government service, but remained a consultant to the Administrator until January 1973.

He received many honors throughout the span of his illustrious career. In 1949, he was elected a Fellow of the American Institute of Aeronautics and Astronautics (AIAA) and later served as AIAA President in 1968. He was cited by the University of Michigan in 1953 as a distinguished alumnus in recognition of his outstanding career in the flight sciences, and was honored by the university again in June 1963 with an honorary degree of doctor of science. The College of William & Mary also awarded Thompson with an honorary degree of doctor of science in June 1963.



In May 1963, President John F. Kennedy presented the NASA Outstanding Leadership Medal to Thompson at ceremonies at the White House. He was honored by NASA "for his outstanding leadership of the scientists and engineers who were responsible for the original technical concepts and who comprised the nucleus of the development team for the space flight missions of the United States in Project Mercury."

He was presented the Distinguished Service Award of the American Legion, Department of Virginia, in July 1963, and was selected by the Virginia State Exchange Clubs to receive the Distinguished Virginian Award for 1963. In 1967, he was presented the

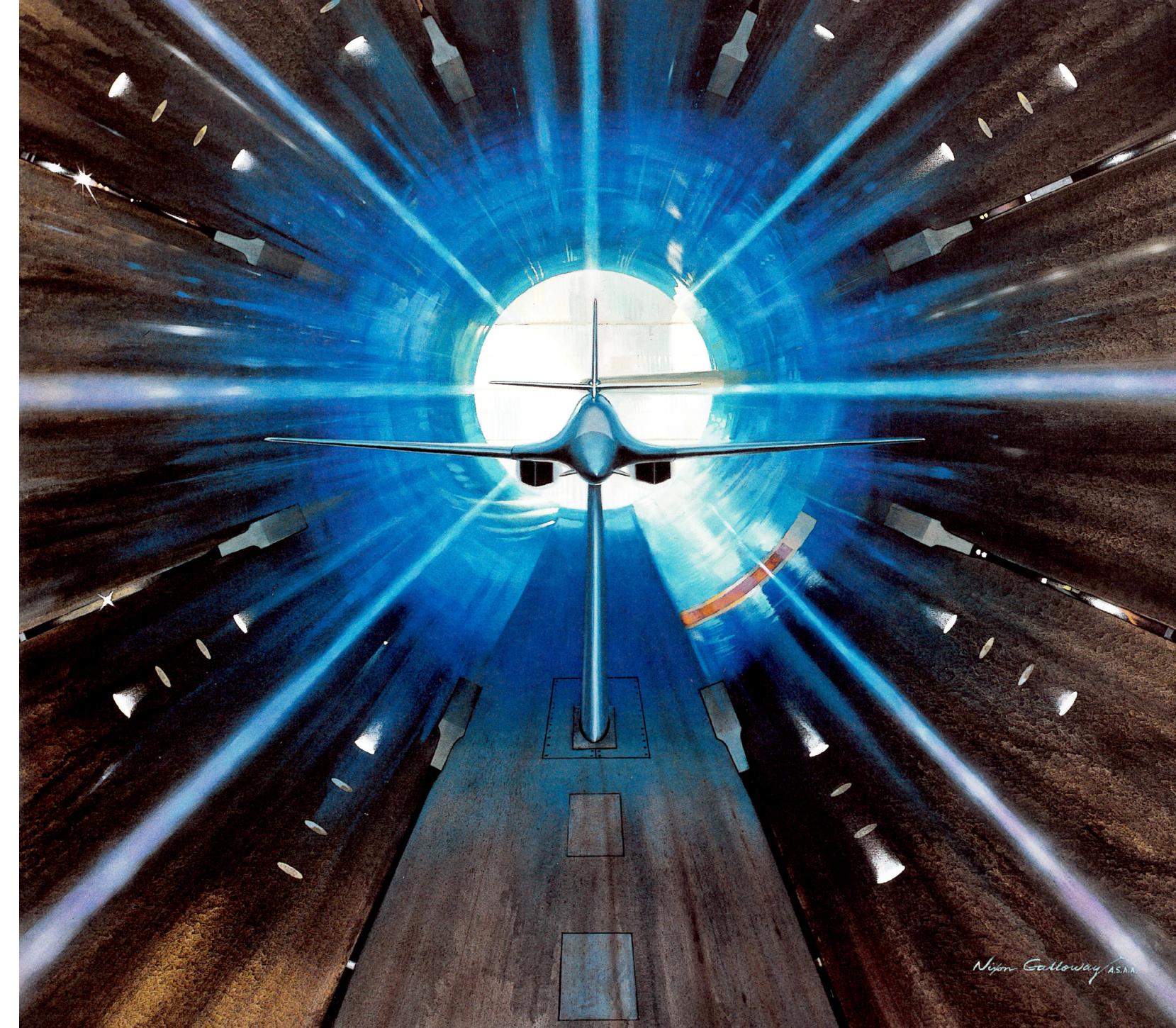
National Civil Service League's Career Service Award for outstanding contributions and excellence in government, and the NASA Medal for Distinguished Service, in recognition of his many years of leadership in aeronautical and space research and development.

In 1974, Thompson received the coveted Guggenheim Medal, awarded "for notable achievement which shall tend to the advancement of aeronautics." He was an honorary member of the Board of Directors of the Virginia Peninsula Chamber of Commerce, a trustee of the War Memorial Museum of Virginia in Newport News, and an honorary life member of the Engineers' Club of the Virginia Peninsula.

Dr. Floyd Thompson passed away on July 10, 1976. He was survived by his wife, Jean G. Thompson, and three daughters. To honor the former LaRC director, Langley's Technical Library was renamed the "Floyd L. Thompson Technical Library" on December 7, 1978. Participating in the ceremony were Donald P. Hearth, Center Director, Mrs. Thompson, and her grandchildren.

In recognition of his exemplary leadership of Langley research programs spanning both the NACA and NASA eras, and especially as Langley Center Director during the formative years of NASA's manned spaceflight program, Thompson was inducted into the Langley's Hall of Honor on Thursday, June 1, 2017 as part of the LaRC Centennial Celebration. □

The Langley Research Center NACA and NASA Hall of Honor was conceived by members of the Langley Alumni Association and NASA LaRC to pay tribute to individuals who built exemplary careers at Langley, persevered against the status quo when required, and achieved revolutionary scientific understanding and technological progress on the frontiers of the aerospace sciences. To learn more about the Hall of Honor, please visit: <https://www.nasa.gov/langley/hall-of-honor>



NIXON GALLOWAY
MAIDEN FLIGHT OF THE B-1

Oil, 1989

A model of the B-1 is ready for testing in a massive 16 foot transonic wind tunnel at the Langley Research Center in Hampton, VA.

LAMAR DODD
THE MATING ROOM
Oil on canvas, 1969

Dodd, like a number of NASA artists, was invited into the white room at the Kennedy Space Center to see the lunar module *Eagle*, which was being prepared for its historic journey to the Moon. Inside the surgically clean white room, a gold-and-white lunar module descent stage is prepared to be joined, or mated, with an ascent stage. When the lunar module lands on the Moon, the descent stage gently lowers the spacecraft to the surface. When the exploration is completed, the astronauts return to the command module mother ship, parked in lunar orbit, by firing the ascent stage rocket engine.

TL789 .U5 D43 2008

Dean, James D, et al. *NASA/Art: 50 Years of Exploration*. Abrams : In Association with NASA and the Smithsonian Institution, 2008, p. 59.



PEOPLE: Meet-A-Librarian

featuring GRETA M. LOWE, LARC STI & IT PROJECT MANAGER (B702)



Q: WHAT DO YOU ENJOY MOST ABOUT YOUR JOB?

"First, I love the opportunity for growth that I've experienced. I started here as a Librarian working with an emphasis on information technology and information management. Now I'm currently an IT Project Manager.

I've also seen that if you have a vision and can get support, good things can happen. I remember sitting with fellow librarian, Gerald Steeman (who is now the Agency STI Publications Manager) to discuss the need for a better search tool for our library resources. We had a representative from Google come on-site, only to burst our bubble by telling us that *our* network/system response time was too slow for Google's standards. Fast forward several years to better network connectivity and the creation of the Information Management Branch headed by a visionary leader, we were able to go back to Google and integrate their appliances into our search infrastructure. This ultimately lead to the creation of Langley Google, which was in use on Center for a number of years.

Working at NASA Langley has also further expanded my boundaries of librarianship. Although people typically see librarians through a single lens, I've been able to use my skillset in ways that I think have been beneficial to the Center and the Agency. For example, since coming to NASA, I have:

- Served as Project Lead for the selection and implementation of DSpace for use as Langley's digital repository and archive.
- Implemented the LF31 library request system, which has eliminated the use of paper by automating new library requests.
- Served as Project Lead for the Library's digitization project.
- Developed procedures and workflows for implementing NX.
- Served as Project and Implementation Lead for the agency-wide *Ask-A-Librarian* and *Library Request* systems."

Q: FAVORITE HOBBIES OUTSIDE OF WORK?

"Family and photography."

Q: FAVORITE BOOK?

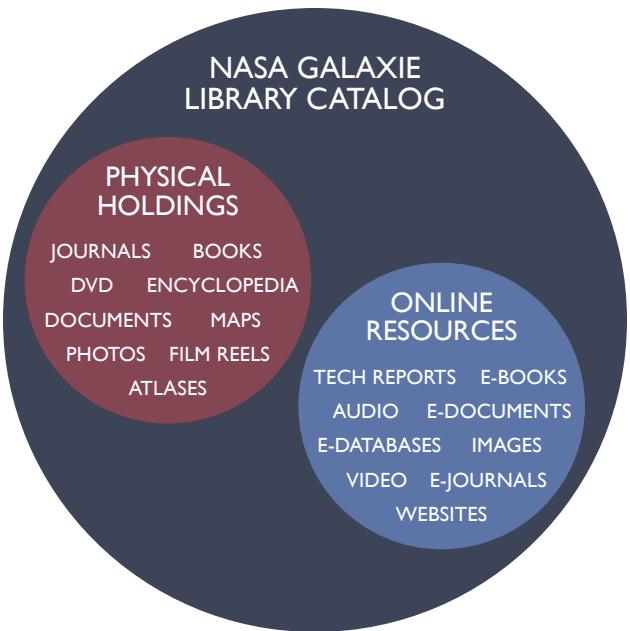
"I love the infusion of technology into the book industry. My favorite book is still the Bible and there's an app for that, too!"

Q: DREAM VACATION DESTINATION?

"My dream vacation destination is Sydney, Australia. I'm very interested in the Aboriginal culture but I'd also like to see both the Sydney Opera House and Harbour Bridge. With that said, the thought of being on a flight for so many hours is a huge barrier to making that dream happen."

DIGITAL: Library Tutorial

SUPER SEARCHER TIPS: BOOLEAN OPERATORS & THE ADVANCED SEARCH



The NASA Galaxie Library Catalog is the Agency's discovery search tool for finding items located in the NASA Library Network's physical and electronic collections, including books, journals, technical reports, databases, as well as a variety of multimedia resources. The Catalog also provides access to original NACA documents published between 1915 and 1958 as well as NASA, Contractor, and CS authored documents. NASA Galaxie consolidates access to these resources from a centralized location, which can be found at: <https://galaxie.larc.nasa.gov>

The Basic Search

A Basic or "keyword" search will comb through the metadata of every item in the library catalog to identify and retrieve a list of records associated with your entry. Users have the option to search across all Agency libraries, or limit the scope of their query to a specific NASA Center. To run a Basic search, type in the keyword(s) related to your topic, just like in the example below:

Keyword Browse Exact

library:

In addition to running a Basic search, users also have the option to perform an Advanced, or "Power" search. Before diving into that, however, it's important to understand a fundamental component to library catalogs and databases: Boolean operators.

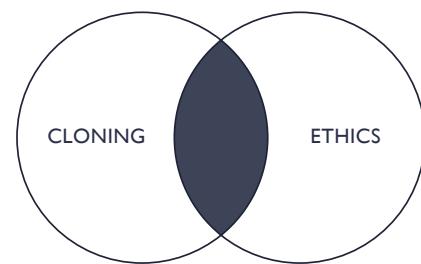
Boolean Operators

Boolean searching is a symbolic logic system designed to create relationships between concepts and words. While library catalogs and databases cannot understand natural language, queries can be made very precise through the use of Boolean operators. The three basic Boolean operators are: **AND**, **OR**, and **NOT**. For example, when searching any type of library database, you may encounter an arrangement of text boxes, like in the example below.

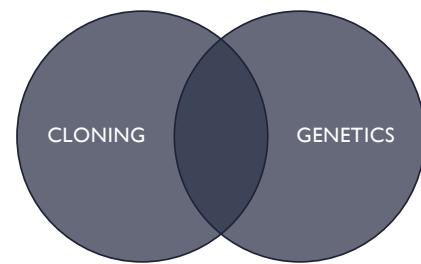
words or phrase ▾ And ▾
subject And
author Or
Not

Boolean operators tell databases exactly how to combine your search terms for optimal results, which can be especially helpful if you're looking to either broaden or narrow the scope of your query.

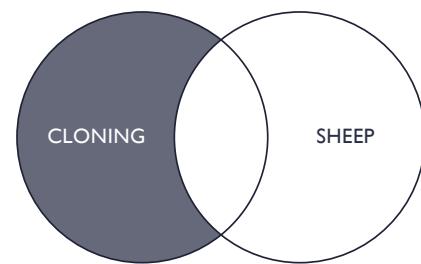
AND is used to narrow a search. This will retrieve records that only contain both terms. *Example: cloning AND ethics*



OR is used to expand a search. This will retrieve records that contain either one or both terms. *Example: cloning OR genetics*



NOT is used to narrow a search. This will retrieve records that exclude an unwanted term. *Example: cloning NOT sheep*



continued on page 28...

ROBERT MCCALL

GEMINI RECOVERY

Watercolor on paper, 1965

The Gemini V crew, Gordon Cooper and Charles Conrad, bob in a life raft beside their spacecraft as a helicopter comes to the rescue following their Earth orbital mission in August 1965. It was the longest manned flight to date—7 days, 22 hours, and 55 minutes. Artist Robert T. McCall documented the return of the crew from the recovery ship USS *Lake Champlain* in the Atlantic Ocean.

TL789.U5 D43 2008

Dean, James D, et al. *NASA/Art: 50 Years of Exploration*. Abrams : In Association with NASA and the Smithsonian Institution, 2008, p. 35.



...continued from page 26

The Advanced Search

The Advanced or "Power" search performs the same function as a Basic search but links two or more elements via Boolean operator. Users also have the option to further refine their query by selecting the desired filters located below the Search button, as shown below.

Power Search

words or phrase	plants	And
subject	microgravity	And
author	Dreschel, T.W.	Or
title		Not
series title		And
ISBN		And

Search Reset

library: ALL

language: ENGLISH

format: ANY

type: ANY

pubyear:

sort by: New to Old

Extra Tips-and-Tricks

Here are a few additional techniques that can be applied to virtually any Search scenario, be it Basic or Advanced.

Truncat*

Truncation (a.k.a. stemming) uses an asterisk (*) to tell the database to find multiple or alternate "endings" of a word.

Examples:

educat* = educate, educates, educated, education
child* = child, childs, children, childrens, childhood

"Quotation Marks"

Quotation marks tell the database to take the phrase as a whole, and search for the words together, and in order.

Examples:

"obsessive compulsive disorder"
"video games"

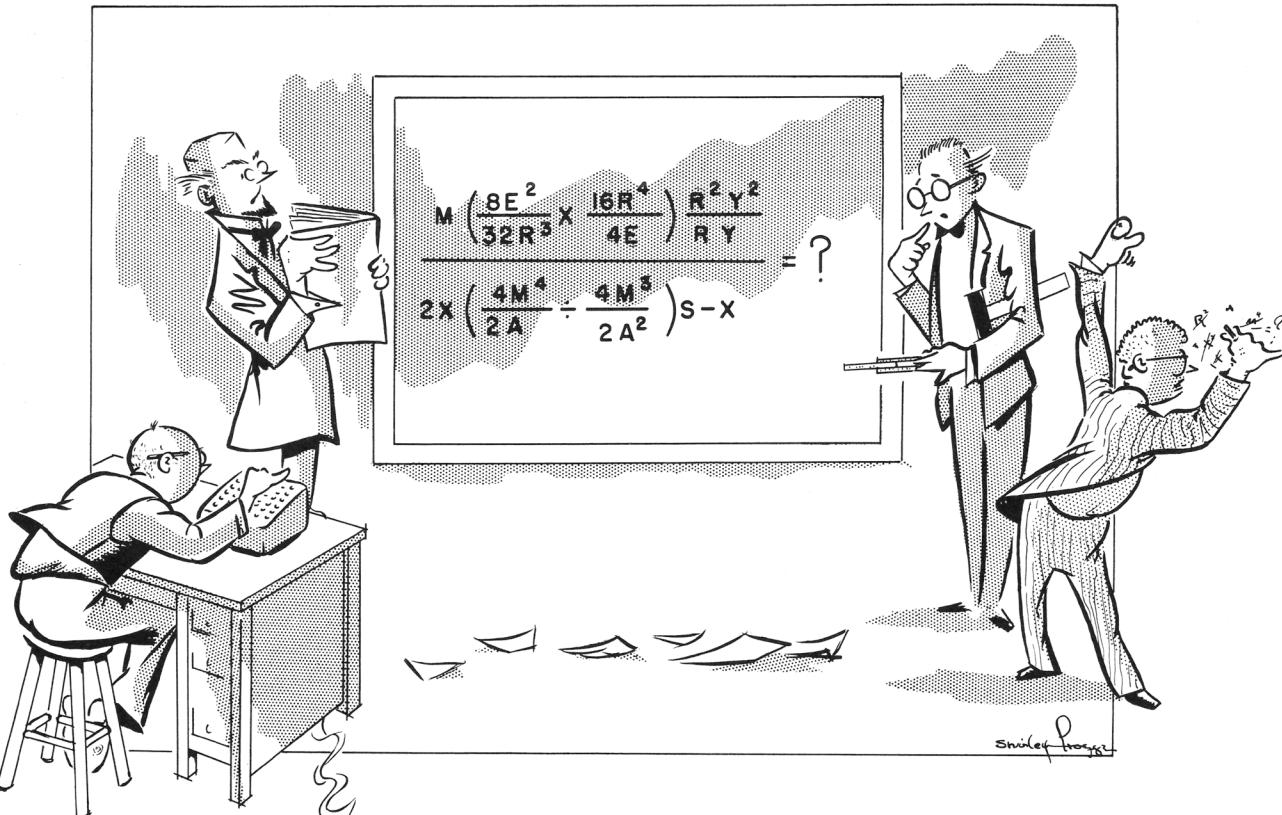
(Nesting)

Boolean operators can also be utilized during a Basic search by "nesting" keywords and/or phrases in parenthesis.

Examples:

(children AND teenagers) AND (ADHD OR hyperactivity)
(children AND "video games") NOT (teens OR adults) □

CAN YOU SOLVE THIS PUZZLE FROM AIR SCOOP'S DECEMBER 1951 ISSUE?



JOSEPH CHRISTOPHER CHIZANKSOS
ASTRONAUT ASLEEP IN TUNNEL

Watercolor, 1970

The Apollo 13 crew is seen in a tense moment. Two days after launch, an explosion forced the crew of Jim Lovell, Jack Swigert, and Fred Haise to use the lunar module as a lifeboat to return them to Earth.



PAUL HENRY RAMIREZ

STARDUST

Acrylic micaceous iron oxide, aluminum crystal, and hologram glitter Mylar, 2007

Ramirez captured symbolically the Stardust mission, which in January 2006 completed a seven-year, 2.8 billion-mile journey to fly by a comet and return samples to Earth. The media used in this piece are reminiscent of pristine cometary materials that will increase human understanding of interstellar dust.

Thank You

The Technical Library would like to thank the following people and organizations for their steadfast leadership, guidance, and support throughout our relocation and modernization process:

HOPE R. VENUS

Branch Head, Information Management Branch (B702)

CATHERINE MCGINLEY

Research Directorate (D3)

ALLEN ASBY, BEN CURTIS & SHERRY JOHNSON

Center Operations Directorate (D4)

JILL MARLOW, ED MCCLARNEY & STEVE VELOTAS

and the LaRC Digital Transformation team

NANNETTE ATKINS, JEFFREY BEGONIA, RONALD VANCE, AND JEREMY VANN

Records Information Management Team (B702)

JACOBS TECHNOLOGY, INC.

and staff

ALUTIIQ LLC

and staff

We would also like to thank the following people and organizations for their contributions to our Winter 2019 issue:

SHEILA A. THIBEAULT

for sharing your time and wisdom

STEPHEN J. HALES

for penning fresh ink onto a faded page of Langley history

TERESA HORNBUCKLE & TIMOTHY M. BUCHANAN

for digitizing, cleaning and formatting "L'Avion-Automobile"

KATRINA L. YOUNG

for providing access to the Milton Ames Collection of historical documents

MARTHA BLAKENEY HODGES SPECIAL COLLECTIONS & UNIVERSITY ARCHIVES, THE UNIVERSITY OF NORTH CAROLINA AT GREENSBORO

for digitizing and sharing your portrait of Dorotha Severance

VANGUARD BREWPUB & DISTILLERY

for permitting the use of your photograph

The Cover

FLOYD L. THOMPSON TECHNICAL LIBRARY RELOCATES TO BLDG. 1268A

TECHNICAL LIBRARY
QUARTERLY NEWSLETTER

WINTER 2019 / VOL. 1, NO. 3

NASA | ART

HISTORY SPOTLIGHT
Langley & The Noble Order of the Green Cow
by Stephen J. Hales

50 YEARS OF SERVICE
An Interview with Research Physicist, Sheila Thibeault

...AND MORE!

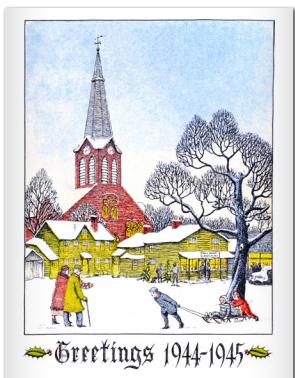
Our sincere thanks to **Wade A. Mickley**, Media Solutions Branch (B701), for designing the Winter scene on the front cover. Wade is a native of Newport News, Virginia. He attended Virginia Commonwealth University, where he was a student of Fine Art and Communication Arts & Design. Wade has worked at NASA Langley for 20 years.

Wade's artwork was inspired by the holiday-themed vignettes featured on the covers of the annual Christmas publication of NASA Langley's official Center newsletter from 1944 to 1970. Throughout this time-period, Langley's Technical Illustrating Section—which included artists J.J. Lankes, David A. Willment, Shirley Hogge, Nettie Chandler, and Wesley Berryman—supplied the hand-drawn illustrations for these covers. (See back page for selected covers from this era)

Over the years, the Center has produced newsletters that have undergone several names changes. From 1942 to 1944, it was called the LMAL Bulletin. In 1945, it changed to the Air Scoop, a name that lasted through 1962. The longest running name, however, has been the Langley Researcher News. □

Explore the storied legacy of NASA Langley Research Center through its full-text digital archive of newsletters: "Bulletins, Scoops, & Researchers" (1942-Present), available at: <https://crgis.ndc.nasa.gov/historic/People>

(ANSWER TO PUZZLE ON PAGE 28: "MERRY XMAS")



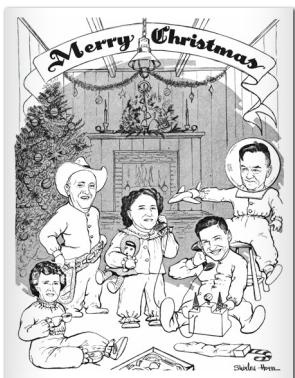
1944



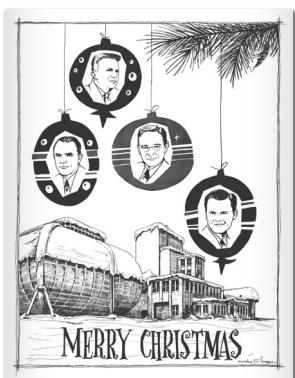
1951



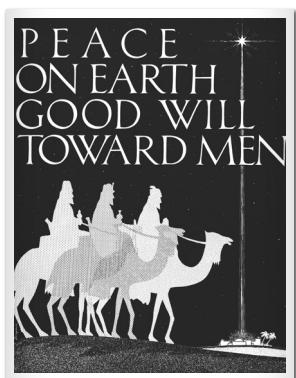
1952



1954



1955



1956



1958



1959



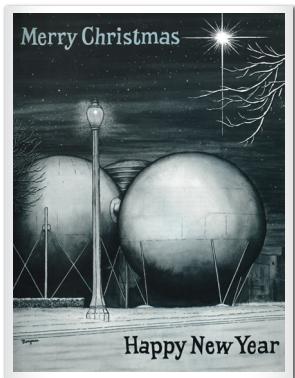
1960



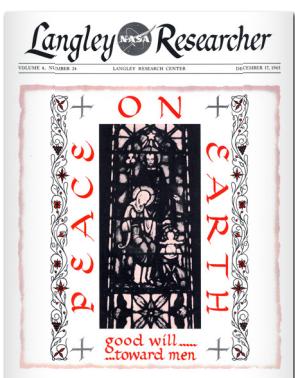
1961



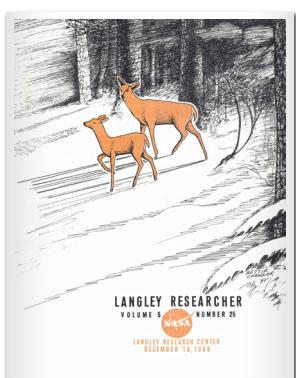
1962



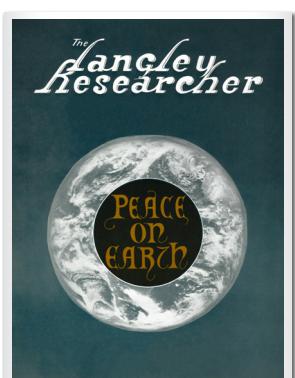
1963



1965



1966



1967



1970