



201 TOURIST CENTER DRIVE, PO BOX 368, HAVELOCK, NC 28532



AVIATION CONNECTIONS: NEWSLETTER

WINTER 2026

WWW.ECAVIATIONHERITAGE.COM

Eastern Carolina Aviation Heritage Foundation

January 2026

Eastern Carolina Aviation Heritage Foundation 2026
GALA Event Tickets



Eastern Carolina Aviation Heritage Foundation 2026
GALA Event Sponsor



Gotta Keep 'Em Separated

2026 ECAHF GALA

Friday, February 20, 2026 @ 5:30 p.m.

Havelock Tourist & Event Center

201 Tourist Center Dr.

Join us for an evening of fun, fine food, and fellowship while promoting STEM (Science, Technology, Engineering and Mathematics) in our community.

Proceeds from the event benefits the Eastern Carolina Aviation Heritage Foundation (ECAHF) in our efforts to inspire youth to pursue new and exciting career pathways through STEM education.

Individual Tickets : \$60.00
tax included

Sponsorships Available

Doors Open at 5:30 p.m.

Dress: Business Casual

Visit www.ecaviationheritage.com for more information
Email: events@havelocknc.us or call 252-444-4348



WITH SUPPORT FROM
**The City of Havelock
Fleet Readiness Center East**

**ANNOUNCES THE 2026 EASTERN NORTH CAROLINA
SUMMER ELEMENTARY SCHOOL ENGINEERING CAMP**

**Havelock Tourist & Event Center
July 20-24, 2026**

Rising 4th, 5th and 6th graders

The Eastern Carolina Aviation Heritage Foundation will offer an exciting, aviation-themed weeklong summer day camp this July for elementary school students (rising fourth, fifth and sixth-graders) at the Havelock Tourist & Event Center.

The camp will provide students with a fun and positive glimpse into various fields of engineering by using hands-on, creative investigations and real-world building activities. Throughout the week, students will work to design solutions to real world issues. They will be led by local elementary school teachers and engineering staff from the Fleet Readiness Center East. Students will be given the challenge to individually design and build various devices related to aviation and engineering. Students will learn engineering fundamentals by exploring various experiments related to aviation and safety.

The camp is from 8:30am – 12:00 noon Monday through Friday and a snack is provided. No lunch is provided.

Cost for the camp is \$150 per student. Scholarships may be available for students with demonstrated financial need. Send no money until the selection process is complete and your child has received notification of acceptance.

If you are interested in sponsoring a camper, please contact Pam Holder at events@havelocknc.us.

The application process opens **February 2, 2026, and closes on April 10, 2026**. To apply, go to www.ecaviationheritage.com and follow the link to **“2026 Elementary Summer Camp.”**

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Spotlight an Exhibit



At the Havelock Tourist & Event Center, visitors can view key artifacts related to local aviation and Marine Corps history—including a detailed display of the **GAU-12/U 25 mm Gatling-type machine gun**, sometimes referred to on exhibit placards as the “GRU-12U.” This powerful weapon played a significant role in U.S. military aviation and ground-support roles during the late 20th and early 21st centuries.

The **GAU-12/U Equalizer** is a **25 mm, five-barrel Gatling-style rotary cannon** developed in the 1970s by General Dynamics. The design distributes firing forces across multiple barrels, allowing extremely high rates of fire while maintaining reliability and barrel life.

The cannon fires **25×137 mm ammunition** and can achieve high cyclic rates—typically around **3,000 to 4,200 rounds per minute**—depending on installation and configuration. Its five-barrel arrangement and powered drive (via pneumatic, hydraulic, or electric motor) enable sustained bursts with reduced overheating compared to single-barrel systems.

While the GAU-12/U is often described broadly as a “machine gun,” it functions more like a **rotary autocannon**, firing medium-caliber rounds at extremely high volumes. It saw use in several major U.S. military platforms:

- **AV-8B Harrier II V/STOL aircraft** of the U.S. Marine Corps, mounted in a centerline gun pod for close air support.
- **AC-130U “Spooky” gunships**, where it provided side-firing suppressive fire in ground-attack missions.
- Specialized ground vehicles such as the Marine Corps’ **LAV-AD air defense vehicle** (now retired).

The cannon’s effectiveness lay in delivering sustained, high-volume fire against soft-skinned vehicles, infantry formations, and other area targets—making it valuable in close air support and aerial gunship roles.

Plan to visit the Havelock Tourist & Event Center at 201 Tourist Center Drive to view firsthand this notable example of military weaponry.

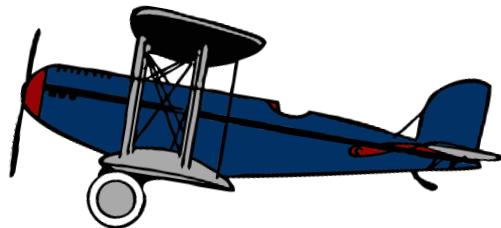
ECAHF

Mission Statement

The Eastern Carolina Aviation Heritage Foundation honors aviation history and inspires and cultivates the next generation of leaders in aerospace.

Vision

An aviation heritage center that educates, inspires, and connects the community through the preservation of history and interactive STEM programs.



- **2026 Annual Gala**
February 20, 2026
- **Middle School Summer Camp**
June 15-18 , 2026
- **11th Annual Summer Camp**
July 20-24, 2026
- **15th Annual FREE**
Family Fly-In Stem Night
August 7, 2026
- **Fall Partners and Members Night**
October 2026
- **STEM Group Tours Available by Request**

Eastern Carolina Aviation Heritage Foundation (ECAHF) Newsletter

Winter 2026 Edition

“Flying the Beam”

One of the first air traffic control systems

Compiled by ECAHF Historian Barry R. Fetzer from <https://flyingthebeams.com/what-it-was> and other sources.

Everything has to start somewhere and someplace by someone, right? First powered flight? The Wright Brothers and Kitty Hawk in December of 1903. First air mail flight? Well, like many things, the answer to that question is “it depends”. Are we talking about powered flight airmail delivery or balloon airmail delivery? If we’re talking about balloon delivery, according to the US Postal Museum, “In 1859, the well-known American balloonist (or ‘aeronaut’) John Wise made history when he transported the first official U.S. airmail in a locked U.S. mailbag aboard his gas balloon *Jupiter*. Wise originally planned to depart from Lafayette, Indiana, on August 16th. A failed valve forced him to reschedule the flight for the next day, August 17, 1859.

Wise had hoped to reach New York City, to which the mail was addressed, or Philadelphia. A lack of wind shortened the trip, however, and he landed in Crawfordsville, Indiana, about 30 miles away. Upon landing, he transferred the mailbag to a railroad postal agent, who put it aboard a train to New York.”

But, if we’re talking about *powered* flight, according to Wikipedia, “The first airmail flight was made on February 17, 1911, when Fred Wiseman carried letters and groceries a distance of 15 miles. However, the first *scheduled* airmail service in the United States began on May 15, 1918, with the inauguration of the Washington–Philadelphia–New York route.”

And the early days of airmail delivery were risky to say the least. According to <https://www.atlasobscura.com/articles/the-pilots-who-risked-their-lives-to-deliver-the-mail>, “In the 1920s, 35 pilots died while delivering mail in America from 1918 to 1926. This tragic statistic highlights the high-risk nature of the job during that time.”

Part of the risks and dangers were the inability of pilots to fly safely at night and in cloudy or bad weather conditions.

Even with all the modern “conveniences” of flight, as a pilot, I still found myself “temporarily disoriented” even in good weather, let alone bad weather, as late as the 1980’s. What about those who were flying before all the “conveniences” of modern flight?

How to fix this problem? As we approach our 2026 Gala and will hear about modern air traffic control (or ATC) systems we’re blessed to have in the first quarter of the 21st Century, how about the first ATC system?

The answer initially was a series of lighted towers across the US that pilots could visually fly by, best at night. But this rudimentary system only worked when the weather conditions were

"visual" ...and dark. What about when the weather conditions were cloudy or foggy and pilots could not see the lighted towers?

The answer? LFR.

"First implemented in 1928, Low Frequency Range (LFR), and according to <https://flyingthebeams.com/what-it-was>, was a system of specialized low frequency radio stations that each projected 4 'beams' that interconnected to form a network of radio airways that pilots could follow in low visibility conditions by listening to auditory cues over their radio headsets. The beams were created by two overlaid signal patterns emitted by two pairs of antennae in an 'X' configuration, one a Morse Code 'A' (dot-dash), the other a 'N' (dash-dot) code which synced along each leg to create a continuous tone when a pilot was '**on the beam**' or on-course. If a pilot tracked off course, either the A or N code would be heard over the other, indicating the direction back to on course. These aerial 'highways of sound' were the first viable solution to a problem that had long dogged aviation since its first days and had thwarted its progress by the 1920's.

The LFR system was considered an 'indispensable' Godsend in its era – for the first time, pilots could reliably navigate long distances without seeing the ground. Its development received front page coverage in the press and popular media as a major technical achievement."

So, when we hop aboard a modern aircraft with almost a 100% assurance we'll get safely to our planned destination— regardless of the weather or time of day—let's not forget those early days of flying and the pioneers who risked their lives to develop the modern air traffic control system we're blessed to have in the United States.



Join us at <https://ecaviationheritage.com/>

DID YOU KNOW?

Airmail and the Birth of Modern Air Traffic Control

- In 1859, the first U.S. airmail traveled by balloon. John Wise carried official mail in his gas balloon Jupiter, decades before powered flight took over.
- Early airmail pilots navigated by pilotage using known cultural and natural references on the ground and with minimal instruments.
- Unreliable aircraft, limited weather information, and primitive tools made every flight a risk.
- By the 1920s, lighted beacon towers created the first cross country air routes.
- Rotating lights and giant concrete arrows guided pilots from point to point — but only in clear weather.
- Radio transformed aviation into an all-weather system.
- The Low Frequency Radio Range (LFR), developed in the late 1920s, created invisible "radio beams" pilots could follow through clouds and darkness.
- Industrial innovation accelerated progress.
- Ford Motor Company refined early radio range technology and released it royalty free, speeding nationwide adoption.
- By the early 1930s, coast to coast flight became reliable.
- Hundreds of radio range stations formed the backbone of early instrument flying.
- Even celebrated pilots faced extreme danger.
- Charles Lindbergh and many others battled storms, fuel shortages, and mechanical failures while carrying the mail.

Today's air traffic control traces its roots to these innovations.

- Modern aviation safety grew from the determination and sacrifice of early airmail pioneers.



Please Join ECAHF Each Year

ECAHF needs your support to share the story of the advancement of military aircraft and those who have made it possible in eastern North Carolina. Your membership helps to provide resources to encourage students to acquire science, technology, engineering, and math (STEM) skills through interactive exhibits and programs.

Together, by joining forces as members of ECAHF, we will help honor Marines' vital mission in advancing military aviation, a mission they have accomplished since 1942 when MCAS Cherry Point was commissioned as a USMC airfield. In addition, your membership will help influence a new generation of aviation enthusiasts and skilled workers for the future. Be a part of this challenging and exciting mission.

Annual Membership

- Co-Pilot (Student) \$25.00
- Pilot (Single) \$35.00
- Squadron (Family Membership) \$50.00
- Wing (Business/Group Membership) \$250.00

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