

# AFA 335

## TENNESSEE VALLEY FLYER

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Spotlight!**

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### The Sport of Kings

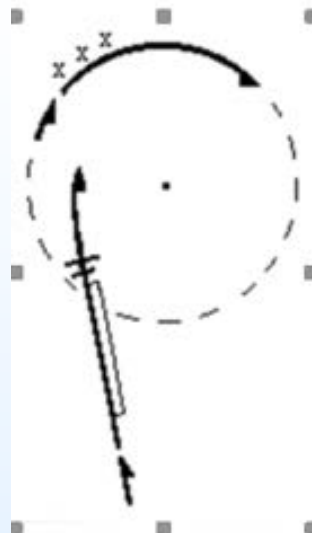
Article by Lee Alford, Lt Col, USAF (Ret)

Basic Fighter Maneuvers (BFM) is commonly called the “Sport of Kings”. Compared to other tactical air-to-air scenarios, it’s the equivalent of being in a knife fight in a phone booth. Typical sorties last anywhere from 45 minutes to 1 hour, and during that time one gets to turn 6,000 pounds of jet fuel into heat and noise. Six “perch” setups are typical for low-aspect BFM sorties with one pilot in the offensive role for the day and the other playing defense. Actual engagements are short: 1-2 minutes each with the rest of the time in the airspace allocated to benign pre- and post-engagement maneuvering. Who could fall asleep with all this excitement?

Low-aspect BFM is one of the building blocks to learning how the jet flies and how to max-perform the aircraft without putting it out-of-control. These skills are invaluable not only for air-to-air maneuvering but for air-to-ground operations, as well. Low-aspect perch setups are categorized by the range at the beginning of the engagement: 9,000 feet (9K), 6,000 feet (6K), and 3,000 feet (3K) with the offender being approximately 30° off the tail of the defender. The formation starts 8,000 to 13,000 feet above an airspace “floor” in line abreast formation at fight range plus another 3,000 feet. On lead’s command, the offender turns towards the defender and the range countdown begins: “1.7 [miles], 1.6, ... FIGHT’S ON!”

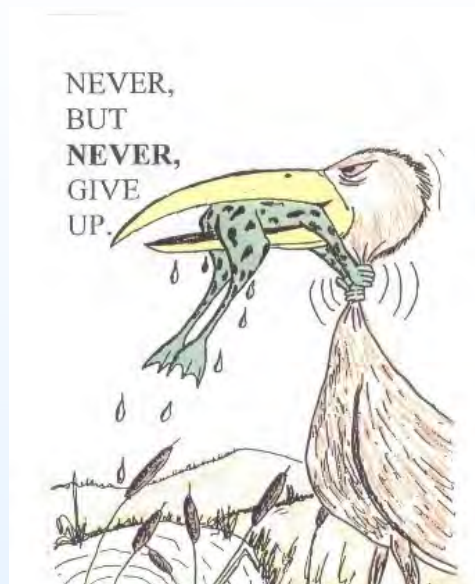


Telephone Booth (Left),  
OBFM (Right)



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The objectives of Offensive BFM (OBFM) are simple. Starting from a position of advantage: 1) effectively enter the turn circle, 2) maneuver to a control position, 3) prosecute all shot opportunities, and 4) maintain the advantage. Achieving these objectives against someone who's fighting for his life...not so simple. The offensive fighter has to get to the turn circle as quickly as possible. Speed at turn circle entry can be up to 575 miles per hour. Once there, the offender needs to start aligning his fuselage with that of the defender. The only way to do that is by rolling to align the two aircraft's planes of motion and pulling back on the stick as hard as possible. The amount of acceleration or "G-force" goes from just under 1g to 9g's in a matter of 1-2 seconds. Speed decreases by 40% or more in just a few more seconds. Flown correctly, the offender will play his turn to arrive in the "control zone" 2,000 to 500 feet behind the defender. After meeting the three requirements for a gun shot: in lead, in plane, and in range, the offender has the chance to make the kill.



Obviously the objectives of the defender are just the opposite. He must maintain tally at all times, detect and defeat all shots, and effectively manage his energy. Above all, he must never give up. At the "fight's on" the defender must do all he can to deny control zone entry by the offender. Initially, that entails turning into the offender as hard as possible while maintaining best maneuvering speed. However, to complicate infrared missile shots, the defender must be in a low to idle power setting. The only way to maintain speed with this constraint is to give up altitude. And so the race to the floor begins! For evenly matched jets and pilot abilities, the offender will eventually find his way to the control zone. Once there, the defender must do everything possible to take away those 3 requirements for a gun shot. Typically this will result in the defender performing some type of jinking maneuver to get out of plane or force the offender into lag. The goal is to stay alive as long as possible, force a neutral fight, or perhaps even drag the offender into the floor.

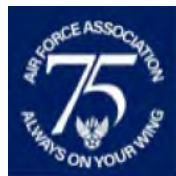
Twenty years ago, I flew as an instructor pilot in the F-16 at Luke AFB. I was assigned to a squadron which was established to provide advanced training for current and qualified pilots of one of our partner nations which had made a large F-16 purchase several years prior. Due to their real-world alert posture, their aircraft were typically always in a go-to-war configuration, which included carriage of external wing fuel tanks. When flying with these external tanks, the F-16 was limited in maneuverability compared to a 'clean' configuration. They could be easily jettisoned if a within visual range engagement presented itself. However, their day to day training in this configuration did not allow them to experience the increased g-onset rates and maneuverability that the jet was fully capable of. At Luke, however, they did have the opportunity to fly their aircraft in a clean configuration. It was definitely an eye opener for them.

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One of the first sorties these trainees would fly in the advanced syllabus was offensive BFM. On one cool, desert morning, I briefed up one of these sorties. Start, take-off, and departure to the Military Operating Area (MOA) were uneventful. Following a couple of standard G-awareness turns, we set up for the first 9K engagement. I was flying defense and the trainee was flying offense. We climbed to the top of the altitude block, called “ready”, and started the range countdown to the “fights-on”. As I started my break turn, I could see the trainee accelerating to my turn circle, as expected. He rolled up and initiated his turn circle entry pull, but very soon after, his jet stopped rotating towards me. I started seeing the top of his jet and his nose slicing down and away from me. “VIPER, KNOCK IT OFF, VIPER 1 KNOCK IT OFF, [silence]!”

After a knock-it-off call, all flight members should acknowledge, but this time, there was nothing but silence on the radio where there should have been a “Viper 2 knock it off” call. I made several attempts to call him, but there was nothing I could do other than maintain sight, attempt to rejoin on his aircraft, and continue to call him on the radio. As his jet descended through the MOA floor, I saw the wings level out and the nose start to move towards the horizon. Finally, he came back up on the radio, and we completed an uneventful emergency return to base. Did the aircraft’s aural altitude warning wake him up? Was it my calls on the radios? We’ll never know. The increased G-forces and rapid G-onset rate along with an insufficient anti-g straining maneuver led to his “falling asleep” in all of the excitement. G-induced Loss of Consciousness (G-LOC) is one of the many dangers faced in tactical aviation, and those who do wake up usually have no memory of it whatsoever.

Retired Lt Col Lee Alford graduated from the Air Force Academy in 1992. He went on to fly over 3,100 hours in the F-16, T-38, and T-37 while stationed at Luke AFB, Spangdahlem AB, Randolph AFB, and others during his 20-year Air Force career. He performed duties as an Instructor Pilot in the F-16 and an Evaluator Pilot in the T-38. Lee is a member of the Air Force Association and currently lives in Madison, Alabama.





## Airman First Class Alexis Hope Nichols

Article by Bailey Erickson-Nichols

Alexis was born in Heidelberg, Germany to two American citizens, her father an active-duty US Army Soldier and her mother a US Air Force veteran working as a civilian for the Army in Germany.

She moved to the States from Germany when she was five and during her time at James Clemens High School, she joined the Army JROTC (AJROTC). Alexis spent four years in AJROTC and learned many things about the Army. She loved the orderly way of the military and decided she wanted to enlist after graduation. Alexis spent a great deal of time deciding which Service to join after High School. She knew about both the Army and the Air Force from her parents. She ultimately made the best decision which was to join the Air Force.

Before leaving for the US Air Force, Alexis and her mother opened a business called Wafel-Bitte which provides authentic tasting and fresh Belgian waffles. Alexis learned how to open and operate the business from the ground up and was nominated for Entrepreneur of the Year.

Alexis graduated from Air Force Basic Training in December 2021 and is currently at Security Forces Technical School in San Antonio, Texas. Unlike her fellow Airmen, she graduated as an Airman First Class due to the time she spent in High School AJROTC. She is currently at Camp Bullis learning the fundamentals of Air Base Ground Defense.

After graduation from Security Forces school on 28 March 2022, Alexis will be part of the Recruiter Assistance Program in Huntsville. She will work side by side with the Air Force recruiter and will tell new recruits what basic training and tech school were like. Afterward, Alexis will leave for her permanent duty assignment at Spangdahlem Air Base, Germany.

Bailey is a member of the Air Force Association and served 4 years of active Air Force service and 2 years in the Air Force Reserves in the Security Police career field. Subsequently, she served 28 years in Federal Law Enforcement before retiring in Madison, Alabama.



A1C Nichols and Her Proud Mother!



## Historic Commissioning of Huntsville High School Space Force Junior Reserve Office Training Crop (JROTC)

Article/Pictures by Eric Silkowski, Col, USAF (Ret)

On an ordinary Wednesday night, the future was set in motion at Huntsville High School. On January 12, 2022, Huntsville High School's Air Force Junior Reserve Officer Training Corps (JROTC) was permanently retired and a new Space Force JROTC unit was created. Members of Chapter 335 were honored to be invited to attend and commemorate this very special event.

Selected as one of the first ten units nation-wide, Huntsville High School will help blaze the trail for up to one hundred Space Force JROTC units that will someday follow. According to Air Force Magazine, selection was based on proximity to "Space Force or related government agencies, including Space Force bases, facilities, and centers of influence, such as U.S. Space Command Headquarters, or NASA, Missile Defense Agency, and other locations, or where the current instructor cadre had prior space operations experience.

The cadets of JROTC Detachment AL-941 did an impressive job of conducting this complex and historic ceremony. Cadet Lt Col Collin White's narration was excellent and Cadet Specialist 4 Sarah Robinson's rendition of the National Anthem brought a tear to more than one eye. The color guard consisting of Cadet Lt Col Luke Tardy (Rifle), Cadet CMSgt Gavin Stallings (CC/American flag), Cadet SMSgt Sven Ise (Alabama flag), Cadet Specialist 4 Isaiah Stallings (Air Force flag), Cadet Specialist 4 Lillian Teer (Space Force flag), and Cadet MSgt Nathan Langford (Rifle) did an outstanding job. JROTC Detachment Commander Cadet Col Laura Counts was impressive and should be very proud of her cadets.

Representing the United States Air Force, Brig Gen Leslie Maher, commander of the Jeanne M. Holm Center for Officer Accessions and Citizen Development at Maxwell AFB, AL, gave an inspiring speech and encouraged the cadets on their uncharted path. Cadet Lt Col Luke Tardy had the honor of holding the Air Force Guidon as it was cased and retired, ending the era of Air Force JROTC at Huntsville High School.



**(Left) The cadets of Huntsville High School JROTC stand at attention as the historic ceremony begins. Parents, Air Force Association members, US Space Force officers and enlisted, and members of the American Legion witness this historic event and show their support.**

**(Right) Brig Gen Leslie Maher addressing the cadets, parents, and community supporters.**





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Col Niki Lindhorst, United States Space Force representative and commander of newly created Space Delta 13, spoke of the incredible importance of the Space Force today “to the way we live our day-to-day lives not just from the perspective of the military, but as a society.” Cadet CMSgt Gavin Stallings had the honor of holding the new Space Force Guidon while it was officially unsheathed. The new era of Space Force JROTC had begun!

The cadet leadership was then pinned with the new Space Force insignia by Col Lindhorst with the assistance of CMSgt Esther Sanford. Once the transition was complete, a cadet change of command ceremony was performed. Cadet Col Laura Counts turned over command to Cadet Captain Camp Holder. We wish Captain Holder all the best as he takes on this new, historic challenge!

USAF Lt Col (Ret) David Murphy, the Senior Aerospace Science Instructor (SASI) for Huntsville High School SFJROTC has much for which to be proud. Having lead Huntsville High AFJROTC to multiple selections as a Distinguished Unit, I am sure he will continue to lead and inspire our high school-aged men and women to great things as they blaze a new trail across the cosmos. It was a joy for us ‘old-timers’ to see America’s next leaders show their devotion to duty, striving for excellence, and obvious patriotism on display. Chapter 335 will continue to support Lt Col Murphy and Huntsville High’s newly minted SFJROTC. Semper Supra!



**(Left) Cadet CMSgt Gavin Stallings holds the US Space Force Guidon as it is unfurled by Col Niki Linhorst, USSF, and Cadet Col Laura Counts, AL Det 941 JROTC Commander.**

**(Below) Air Force Association attendees Brig Gen (Ret) Gary Conner, Chapter 335 President John Pennell, and Alabama State President Ken Philippart proudly support the cadets and leadership of Huntsville High School’s newly minted Space Force JROTC!**



**(Left) The Huntsville High School Junior ROTC Color Guard. From left to right: Cadet Lt Col Luke Tardy (Rifle), Cadet CMSgt Gavin Stallings (CC/American flag), Cadet SMSgt Sven Ise (Alabama flag), Cadet Specialist 4 Isaiah Stallings (Air Force flag), Cadet Specialist 4 Lillian Teer (Space Force flag), and Cadet MSgt Nathan Langford (Rifle).**



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**First Ever Titan IV Space Launch**

A Technical Heritage Article by Albert (Rob) Robertson, Lt Col, USAF (Ret)

The Titan IV was a family of heavy-lift space launch vehicles developed by the Martin Marietta Corporation and operated by the United States Air Force from 1989 to 2005. Launches were conducted from Cape Canaveral Air Force Station, Florida and Vandenberg Air Force Base, California.

The Titan IV was the last of the Titan family of rockets, originally developed by the Glenn L. Martin Company in 1958. The Titan IV was retired in 2005 due to its high cost of operation and concerns over its toxic propellant fuels. It was replaced by the Atlas V and Delta IV launch vehicles under the Evolved Expendable Launch Vehicle (EELV) program. The final launch of the Titan IV (B-30) from Cape Canaveral occurred on 29 April 2005 and the final launch from Vandenberg AFB occurred on 19 October 2005. Lockheed Martin Space Systems built the Titan IVs near Denver, Colorado, under contract to the US government.



What you don't read about is the two years of hard work and dedication that went into preparing the Titan, its Inertial Upper Stage (IUS), and the Defense Support Program (DSP) payload for that initial space launch in 1989. It was going to be the first Titan IV of the Titan family to ever launch from Cape Canaveral. The work was so demanding, the original Air Force Launch Manager resigned his position due to the laborious hours he had been putting in and the toll it was taking on him and his family. None of us on the staff faulted him because we all understood the months of 14-to-16-hour days including weekends he had put in. If it hadn't been for his dedication up front and getting us to the point of launch preparation, it would have probably been another year or so before we would have been ready.

On the day of launch, crews were on station preparing for the launch about 24 hours before the actual launch. We were working eight hour shifts due to crew rest requirements in case we didn't launch during the first window of opportunity and had to do a 24-hour scrub / turn-around. The day of launch, the launch team came on station between midnight and one in the morning. We spent the rest of the morning running launch procedures, going over checklists, charging batteries, executing a multitude of other checks and verifications, and finally performing final fueling operations. We were all anxiously awaiting the launch, but remaining cool, calm, and collected while we went through our procedures and conducted the launch countdown.



Finally, without any major countdown glitches, on 14 June 1989 at 13:16hrs UTC, the first Air Force Titan IV-A successfully launched from Cape Canaveral Air Force Station, Launch Complex 41 carrying an Air Force IUS and DSP Satellite #14 headed for geosynchronous orbit.

During the Titan's ascent, one of the solid rocket motor nozzles did a hard tilt to the outside of its motor. The Titan immediately adjusted the other motor nozzle with a hard tilt to the outside. The Titan continued on course with both motor nozzles angled outward and flew the rest of its mission profile flawlessly. The result was that DSP-14 was successfully placed in its orbit without any complications.

There were a lot of long days, sleepless nights and time away from families while we prepared for that launch. The professionalism and dedication of the entire team was on display that day. It's something we will always remember. It's something of which we will always be proud.

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The entire team received commendations for a job well done. I was just one of the many receiving Air Force Commendation Medals, Air Force Achievement Medals, and other related unit citations and awards recognizing the major accomplishment we had achieved in successfully launching the first ever Titan IV.

Lt Col (Ret) Robertson is an Air Force Association Life Member. He has been an AFA member since 1977 when he was an AFROTC scholarship cadet. He continued his AF Career after Cape Canaveral serving at Wright-Patterson AFB, at Los Angeles AFS, in the Office of the Secretary of Defense (OSD), and finally retiring in 2001 after 21 years of active duty. He became a civil servant serving in OSD for five more years. Finally, he became a DoD contractor in 2006 and has been one ever since. He currently supports the Missile Defense Agency at Redstone Arsenal in a Special Access Program working counter-countermeasures discrimination and lives in Harvest, Alabama.





## Community Partners



### LINC Research, Inc.

Ms. April Brown, Human Relations Manager for LINC Research, Inc. accepted the Community Partner Wingman Renewal Medallion from Tennessee Valley Chapter member Rick Driesbach. Many thanks to LINC Research for continuing to support aerospace education in the Tennessee Valley at the Wingman level!



### Aleta Technologies

Jay Kurowsky, President of Aleta Technologies, accepted his company's Community Partner Renewal Medallion from Chapter member Rick Driesbach on 27 Jan 2022. Thanks to strong Community Partners like Aleta Technologies, Chapter 335 can strongly support aerospace education in northern Alabama.



### Willbrook Solutions

On behalf of Willbrook Solutions CEO, Bonita Phillips, Accountant Kathy Martin accepts Community Partner ACE Renewal Medallion from chapter member Rick Driesbach. Willbrook Solutions continues to support aerospace education at the highest level in the Tennessee Valley, many thanks!



### Lisa Philippart, Licensed Professional Counselor

Lisa Philippart, Licensed Professional Counselor, proudly displays her Community Partner Plaque with her new 2021 / 2022 renewal medallion affixed. A special thank you for supporting the Air Force Association and our veterans' health!

## Community Partners



### Qualis

On behalf of Qualis President, Rod Duke, Ms. Rachel Cutter, Program Administrator, proudly accepts the Community Partner Wingman Renewal Medallion from chapter member Rick Driesbach. A huge thanks to Qualis for supporting aerospace education at the highest level!



### Edward Jones Investments (Brenda Armstrong)

Brenda Armstrong, Financial Advisor with Edward Jones, proudly displays her Community Partner Plaque after attaching her 2021 / 2022 Wingman Renewal Medallion. Many thanks for being a great "Wingman" supporter of aerospace education!

## AFA's 75th Anniversary

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In commemoration of AFA's 75th Anniversary we are telling our AFA story!

**CONFIRM YOU'RE IN THE FIGHT**  
Let us know that you are in the fight with us by verifying your membership information.

**SHARE YOUR STORY**  
This is the time for our AFA family to speak up, loud and proud and share their Air Force, Space Force, and AFA Pride.

**GET YOUR LEGACY BOOK**  
Your AFA Legacy Book will be available for purchase in several packages. Pick the one you want as an AFA Anniversary keepsake.

**ON YOUR WING**  
We are always on your wing! Thank you for your dedication and commitment to our AFA.

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AFA'S ORAL HISTORY PROJECT  
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# COMMUNITY PARTNERS

## ACE LEVEL

**CUBIC GATR Technologies**  
[www.cubic.com](http://www.cubic.com)

**General Atomics Electromagnetic Systems**  
[www.ga.com/ems](http://www.ga.com/ems)

**Mary's Wine & Spirits**  
Hwy 431 South, Brownsboro, AL

**Modern Technology Solutions, Inc.**  
<https://www.mtsi-va.com/>

**PeopleTec, Inc.**  
[www.peopletec.com](http://www.peopletec.com)

**Radiance Technologies**  
[www.radiancetech.com](http://www.radiancetech.com)

**Straight To Ale Brewing**  
[www.straighttoale.com](http://www.straighttoale.com)

**Willbrook Solutions, Inc.**  
[www.willbrook.net](http://www.willbrook.net)

**Whitespace Innovations, Inc.**  
[whitespaceinnovations.com](http://whitespaceinnovations.com)

## Wingman Level

**Aero Thermo Technology**  
[www.aerothermo.com](http://www.aerothermo.com)

**Canvas**  
<https://www.canvas-inc.com/>

**Conditioned Air Solutions**  
[www.conditionedairsolutions.com](http://www.conditionedairsolutions.com)

**CrossTek Construction**  
[www.crosstekconstruction.biz](http://www.crosstekconstruction.biz)

**Davis Strategic Innovations, Inc.** [www.davisdsi.com](http://www.davisdsi.com)

**Edward Jones**  
[www.edwardjones.com/](http://www.edwardjones.com/)  
BrendaArmstrong

**Integrated Solutions for Systems, Inc.** [www.is4s.com](http://www.is4s.com)

**Intuitive Research and Technology** [www.irtc-hq.com](http://www.irtc-hq.com)

**Linc Research Inc.**  
[www.lincresearchinc.com](http://www.lincresearchinc.com)

**Qualis Corporation**  
[www.qualis-corp.com](http://www.qualis-corp.com)

## Basic Level

**Aleta Technologies**  
[www.aletatechnologies.com](http://www.aletatechnologies.com)

**Bevilacqua Research Corp**  
[www.brc2.com](http://www.brc2.com)

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[www.dr-inc.com](http://www.dr-inc.com)

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**Linda Morgan - Legend Realty**  
[www.legend-realty.com/linda-morgan/](http://www.legend-realty.com/linda-morgan/)

**Lisa Philippart, LPC**  
<https://urlifematters.net>

**NeXolve**  
[www.nexolvematerials.com](http://www.nexolvematerials.com)

**Redstone Federal Credit Union** [www.redfcu.org](http://www.redfcu.org)

**Shear Faith**  
[www.vagaro.com/shearfaith1](http://www.vagaro.com/shearfaith1)

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*Annual Giving Levels: Ace: \$500, Wingman: \$250, Basic: \$90  
Want to become a Community Partner at the Ace, Wingman, or Basic level? Contact George Krym at [george.krym@yahoo.com](mailto:george.krym@yahoo.com).*



# AFA 335

## UPCOMING EVENTS

21 Apr: Executive Council Meeting

19 May: Executive Council Meeting

16 Jun: Executive Council Meeting

### Chapter 335 Officers

• **President**

John Pennell

[johnpennelljr@aol.com](mailto:johnpennelljr@aol.com)

• **Treasurer**

Jack Royster

[jroyster@knology.net](mailto:jroyster@knology.net)

• **Vice President**

Guy Broadhurst

[Broadhurst.guy@gmail.com](mailto:Broadhurst.guy@gmail.com)

• **Secretary**

Eric Jackson

[eric.jackson1969@gmail.com](mailto:eric.jackson1969@gmail.com)

### Chapter 335 Special VPs

• **Aerospace Education:** Jay Carlson

• **Community Partners:** George Krym

• **CyberPatriot:** Bob Hovde

• **Webmaster:** Eric Silkowski

• **Newsletter:** Kathleen Mason

• **Veteran's Affairs:** Zig Jastrebski

• **Communications:** Rick Driesbach



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