WINGS OF CAROLINA FLYING CLUB

MAGAZINE

# 23

COVER PHOTO CREDIT;
DAVID M. REMEDIOS

FEATURING SPECIAL STORIES FROM

**T. DONALDSON**

wingsofcarolina.org

# GLOC – THE PILOT KILLER, A TALE OF SURVIVAL


## THOMAS "SNAKE" DONALDSON JR., COLONEL, USAF (RETIRED)


Photo Credit: Chris Furne

## "GLOC"

It is certainly not a revelation to say that flying fighter planes is a profession characterized by effective risk mitigation focused on accomplishing a complex mission. Simply put, the performance of modern jet fighters necessitates a tremendous emphasis on realistic training and developing skills to harness that performance to defeat an adversary while enhancing your ability to survive. The missions that fighter pilots face vary widely and usually involve tailoring the unique capabilities of specific aircraft with a particular mission-training focus. In the U.S. Air Force, some squadrons specialize in air combat tasking (e.g., F-15C/D, F-22 aircraft), while others place greater emphasis on air-to-surface employment (e.g., F-16C/D, F-15E, F-35 aircraft). Each mission type carries particular high risk in certain aspects of training and


Photo Credit: Andy Curliss

combat employment. Air combat training carries high risk particularly in two main areas – mid-air collision potential and "G" Loss of Consciousness (GLOC). Even though GLOC has probably been around since high performance fighters were introduced in World War II, it has become a major risk for pilots since high thrust-to-weight ratios characterized 4th generation jet fighters like the F-16 and F-15. Coupled to digital flight controls, these fighters are capable of very rapid G-force onset. This capability definitely enhances maneuverability, but may also cause the pilot to "get behind" on his anti-G straining maneuver and lose consciousness within seconds of starting a maneuver. When that happens, a fighter aircraft usually transitions to an unusual attitude in pitch or roll (or both) due to the inherent instability built into the fighter's design. Based on the altitude available for recovery and the time elapsed before the pilot regains useful consciousness (a term warranting further explanation), the consequences can be fatal – and oftentimes are. During the previous four decades, the U.S. Air Force alone lost scores of aircraft and pilots to GLOC episodes. This tragic situation was depicted in the recent movie, "Top Gun Maverick," with the pilot,

recovering in the nick of time – something that does not usually end well. My personal tale of recovery and survival is the exception to the norm in these events and in many ways is still inexplicable to me, even after many years and thousands of missions since the event.


Photo Credit: Andy Curliss

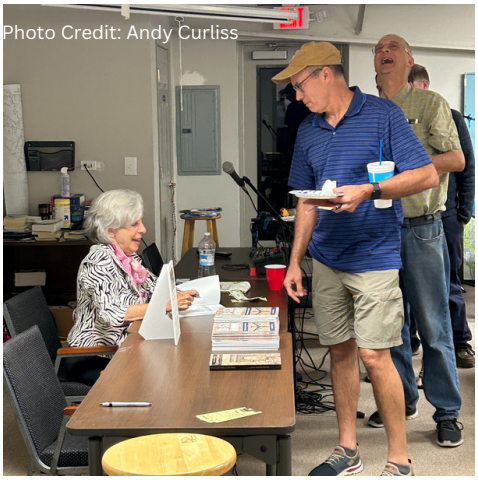


Photo Credit: Andy Curliss


Photo Credit: Andy Curliss

**Training and Preparing for the High-G Environment**

Recognizing the existential threat to mission accomplishment and pilot survival, the U.S. Air Force initiated several measures that were designed to mitigate the risk of GLOC to fighter pilots. First, the design of the anti-G suit and oxygen mask was modified to provide forced air breathing and more rapid G-suit inflation. This modification (i.e., "Combat Edge") required pilots to learn and practice a new anti-G straining maneuver that would better enable a pilot to withstand the quick onset of G forces and sustain that defense for longer periods of time. To be sure, being physically fit for high-G maneuvering meant having both the aerobic stamina and the muscle strength to sustain this maneuvering (i.e., 6-9 Gs) for extended periods of time (i.e., 60-90 seconds). The straining of leg, abdominal and neck muscles had to be synchronized with intake of oxygen and forceful exhaling. This new approach required continuous training and critical self-evaluation prior to every engagement. A sign that GLOC was considered a top priority by the U.S. Air Force in the early 1990s was evident in the mandate that every fighter pilot would be required to complete centrifuge training within a two-year timeframe – or face permanent grounding. This mandate applied to all pilots, regardless of rank, age or experience. The centrifuge profile was quite difficult, with each pilot having to show proficiency with an effective anti-G straining maneuver at 6 Gs without a G-suit for 30 seconds, sustaining a 7 G-turn for 45 seconds and sustaining a rapid-G onset of 9 Gs for 20 seconds. After that centrifuge evaluation, no pilot ever wanted to do it again, which would be mandatory if a pilot ever showed difficulty in high-G maneuvering. My centrifuge training was completed when I was an F-15 squadron commander and had already acquired over 1,500 hours in the F-15 aircraft and well over 3,500 hours in total fighter time (e.g., F-16, F-4, F-100). I was supremely confident in my ability to engage any fighter in high-G air combat maneuvering – an overconfidence that would nearly kill me.

**Pulling Gs and Aerodynamics – A Game of Risk and Reward**

Most aviators know the basics of the principles of flight regarding lift production and the relationship to speed, power, and structural integrity. In jet fighter air combat maneuvering (ACM), these principles are taken to another whole level. Contrary to Hollywood's false narrative, the faster a fighter jet flies does not equate to superiority in ACM. Speed is mainly important for responding quickly to incoming threat aircraft as well as ensuring a quick retreat after an engagement. Fighter jets like to launch missiles at greater range than an adversary and high-speed and altitude advantage does provide an edge. But a maneuvering fight within visual range must produce a better turn-rate and tighter turn-circle than an opponent. This can only be achieved if the fighter is maneuvered at "corner" speed. This speed is the lowest speed at which the jet can produce enough lift to turn the tightest and quickest and not exceed the structural limit – usually 9 Gs. The major capability improvement in aircraft like the F-15 and the F-16 is they both have engines that produce enough power to overcome the huge amount of induced drag that accompanies the lift from 9-G turns and can sustain those turns for longer periods of time. Of course, the risk to the pilot at this level of performance is any loss of consciousness may result in ground collision or allowing an opponent to gain an advantage for a kill shot. Managing high-G ACM is truly a life or death challenge, both in combat and in

training. Knowing this, U.S. Air Force policy requires all engagements in training begin with “G-awareness turns”. These are two 180-degree turns performed at 6 and 7 Gs prior to any ACM maneuvering. If the pilot feels their anti-G straining maneuver is suitable for further maneuvering then an engagement may begin. It doesn’t necessarily mean the risk is minimized, but at least the mission can be adjusted if any pilot experiences lower G-tolerance. On the mission where I encountered GLOC, I had previously flown thousands of these G-awareness turns without any difficulty.

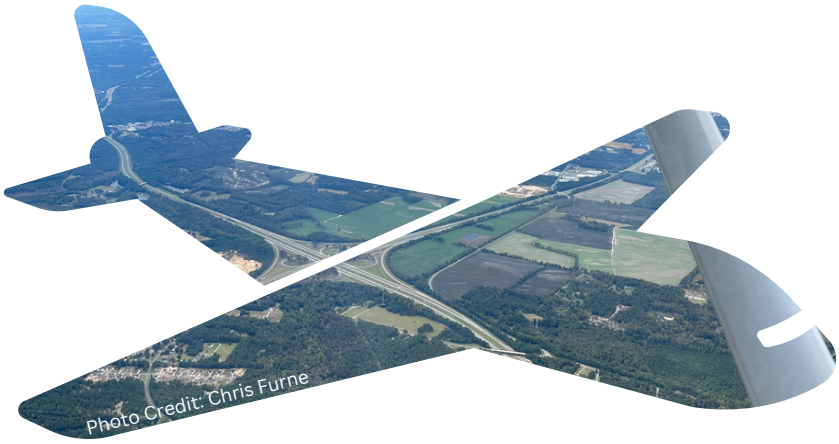

Photo Credit: Jeff Sides


Photo Credit: Andy Curliss

**GLOC – The Event and Survival**

The ACM mission was scheduled for the afternoon on a beautiful spring day as a two-versus-two scenario with two opposing F-15s replicating a MIG-29 threat. The airspace set for the mission was off the gulf coast and comprised a 60-nautical mile by 80-nautical mile lateral area with plenty of depth (surface to 50,000 feet). After the two flights of two separated by 50 nautical miles, I called for separate G-awareness turns, with my two-ship formation turning 180 degrees initially from east to west, followed by a pause then 180 degree turn back to east. This was quite typical and I expected the engagement to begin after the last turn from west to east. Unfortunately, as I called for my two-ship (“Jazz II flight”) to start a first left turn at 6.5-7Gs, I only remember seeing the Mississippi coastline to the north before being in a dream heading to the sea in a wings-level shallow (25 degree nose low) dive. As I grappled with the idea of diving toward the water in what I thought was a dream, my mind was conflicted as to whether this was real or just a dream that didn’t require any action. I’m not sure, but perhaps 10-12 seconds went by until I decided to initiate a recovery to level flight. Somehow, my instinct for survival convinced me to act – even if this was just a dream. As more time elapsed (perhaps 30 seconds) and the jet was now in level flight, I noticed that I was flying due east. Wondering what I was doing there and not knowing was feeding a growing sense of fear and disorientation. More time elapsed and as more cognitive ability returned to my brain, I realized what had happened. Surprisingly, I had suffered GLOC after 90 degrees of turn at 7 Gs. I will never understand how my jet turned another 270 degrees, bringing me heading back east without rolling over into an inverted dive into the water. I’m not an overtly religious person, but a force beyond my control or comprehension managed to fly my F-15 all the way around from north to east and only end up in a shallow, recoverable dive. Fighters don’t usually exhibit this degree of stability on their own. My immediate problem after the realization of what had transpired was what I was going to do next. Part of me recognized that I should probably return to base, in case I was suffering some physical problem. My other thought was focused on not letting this event generate a fear that might be difficult to overcome. I decided to get back on that horse and finish the mission. After a query from my wingman as to why I stopped communicating with him and the other flight members, I came up with a cover story that I was evaluating a flight control anomaly and for him to stay clear as I maneuvered vertically and laterally to check it out. Of course, this was my excuse for checking my ability to pull 7 Gs and not have another issue. After several minutes of this maneuvering, I called ready to the other flight opponents to the east and we finished the mission with three successful engagements. No one seemed to have any clue as to what had happened – and I did not disclose it publicly for fear of inviting a medical evaluation and subsequent trip to the centrifuge again. My sense of responsibility compelled me, however, to confide the experience to a trusted safety officer. He and I both believed it was important for the event to be briefed to all the squadron pilots – albeit anonymously. Hopefully, the story saved another pilot from a fatal situation. In retrospect, I have never forgotten the event and how truly fortunate I was. I flew fighter jets for another 12 years and never had this experience again. Why it happened is a mystery. I can only think that my extensive experience had somehow produced a,

sense of invulnerability that clearly almost cost me my life. It was always a reminder of the old expression, “Aviation is not inherently dangerous, but like the sea is terribly unforgiving.” Perhaps the over-familiarity with the G-awareness turns that preceded every ACM training sortie had dulled my normally sharp focus on an aspect of the mission I took for granted. Maybe the stress of a recent divorce had somehow lulled me into a mental lethargy. All I know is that it got my attention and to this day, I take nothing for granted when I fly. Hopefully, this kind of “wake-up” call will never be needed by any of you**.**




EDITOR NOTE: AFTER ENCOUNTERING AND SURVIVING A GLOC EVENT, TOM DONALDSON FOLLOWED THE RESEARCH THAT THE USAF CONDUCTED FOR OVER 15 YEARS TO PRODUCE AN EFFECTIVE RISK REDUCTION MODIFICATION FOR FIGHTER JETS IN COMBATING GLOC. BY 2015, THE F-16 HAD AN EFFECTIVE SOFTWARE PROGRAM THAT WAS EMBEDDED WITHIN THE AIRCRAFT’S COMPUTER/AUTOPILOT SYSTEM THAT COULD SENSE AN IMPENDING CLOSURE WITH THE GROUND AND TAKE EFFECTIVE ACTION WITHOUT PILOT INPUT TO AVOID A GROUND COLLISION DURING A PILOT INCAPACITATION FROM GLOC. TOM RESEARCHED THIS SYSTEM WITH THE TEST PILOTS THAT HAD WORKED WITH SYSTEM ENGINEERS IN DESIGNING IT AND WROTE A THESIS PAPER FOR EMBRY-RIDDLE AERONAUTICAL UNIVERSITY ON THE SUBJECT. AS OF THIS WRITING, THE SYSTEM(AUTO GROUND COLLISION AVOIDANCE SYSTEM-AGCAS) IS FULLY INSTALLED ON ALL F-16 FIGHTERS AND IS BEING ADAPTED AND INSTALLED ON THE F-35. TO DATE, OVER A DOZEN F-16 PILOTS AND AIRCRAFT HAVE BEEN SAVED BY AGCAS.





DPE Corner
Fall 2023 Edition

Jay Nabors – 1648 – FAA Designated Pilot Examiner
Gold Seal CFI, CFII, AGI, IGI, MEI, Commercial ASEL, ATP-AMEL, SIC CE500
FAA FAAST Team Representative

## IACRA, Student Pilot Cert, MEDEXPRESS, Logged Ground and Eligibility Refresher for Instructors

With new instructors at the club its probably time for a quick refresher on some things that could create problems for your students at checkride time. With some minor exceptions/discrepancies the FAA requires applicants to use their full legal name. Correspondingly with a few exceptions mismatched names on applications, medical and govt issued photo ID could well require a visit to the FSDO to get a name correction before a checkride can be done. Logged ground is another little regulation buried in the myriad of FAA regulations that are easy to overlook. Here's some tips:

1. FULL LEGAL NAME
    a. MedExpress – sometimes students will go out and do their own MedExpress and do the airman medical. This could be the first time the airman establishes their name with the FAA. This is also the time when mismatched names can develop. TIP – ensure your students use their full legal on Medexpress
    b. Student Pilot Certificate – this is another time a lack of full legal name or name mismatch can occur that would not get identified until checkride time – supervise your student's application process carefully and use full legal name
    c. Knowledge Test – this one is the second most common name mismatch. Typically applicants just use first and last name. CATS center staff do not audit your name, applicants simple have to show proof of ID. – use full legal name
2. LOGGED GROUND refresher
    a. Logged Ground for private
        i. 61.105 - A person who is applying for a private pilot certificate must receive and log ground training from an authorized instructor or complete a home-study course on the aeronautical knowledge areas of paragraph (b) of this section that apply to the aircraft category and class rating sought.
        ii. 61.107 - General. A person who applies for a private pilot certificate must receive and log ground and flight training from an authorized instructor on the areas of operation of this section that apply to the aircraft category and class rating sought
    b. Logged Ground for Commercial – same as private – reference 61.125, and 61.127
    c. Note an endorsement stating you gave the ground is not the same as logged ground.
    d. Logged ground is also required in addition to endorsements for high performance and complex

Use these tips to help your students have a smooth pre-checkride eligibility and name verification process,

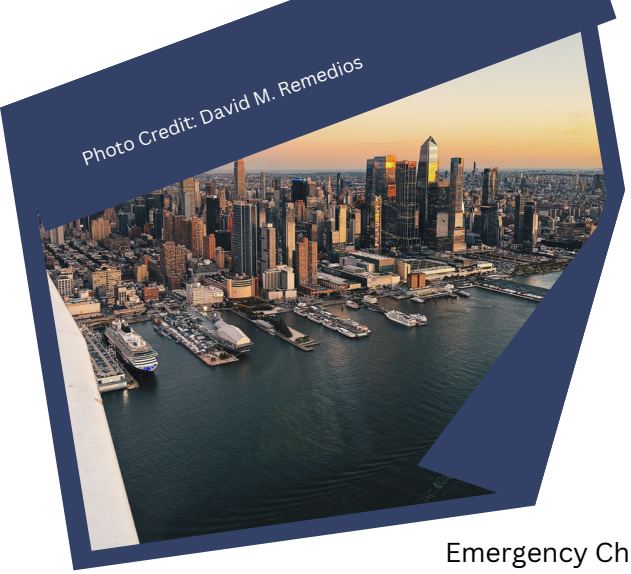
## NWKRAFT – what about Known ATC Delays

The famous "K" on NWKRAFT (pursuant to FAR 91.103) doesn't get a lot of attention on checkrides and most examiners will simply say "ok you know it means known ATC delays". But do you know where to look up known ATC delays? It's not pertinent to VFR checkrides so knowing what it means is often enough. How to impress your examiner on the next checkride when he asks about the "K" you can tell him he can find known ATC delays on this web link. https://nasstatus.faa.gov/

## RAMP CHECKS, Airworthiness, SPARROW vs ARROW and Weight & Balance

If you have done a checkride recently you've most likely been asked to explain what documents you need onboard the aircraft for it to be airworthy. Historically, just pulling out the Airworthiness, Registration and Aircraft Flight Manual and rattle off "ARROW" is enough to satisfy the DPE on a checkride (or an ASI on a ramp check). With the advent of new avionics going into aircraft (seems like almost weekly) a gap in airworthiness can occur. With new Avionics, eg, GFC 500, G5, G3Xtouch, the corresponding REQUIRED supplement(s) must be onboard the aircraft. Our great maintenance team have done a good job of getting those supplements into the fleet but from time to time some go missing. New acronym is "SPARROW". Supplements and Placards (including compass deviation card) must be in the plane Another question I get is can electronic POH and/or supplements suffice. Since I've gotten 2 different interpretations from two different FSDOs, play it safe and have the hard copy on board.

Weight and Balance is another seemingly simple ramp check request from the ASI to solve by presenting the W&B section of the AFM. That does demonstrate the aircraft has the required BEW and BEWCG on board but as it turns out, might not be sufficient to satisfy the FAA ASI on the ramp check if he asks you to prove you are flying the aircraft within its legal limits. We've gotten multiple reports on ramp checks in other states that include this request. Solution is always do the W&B for your flight and have it with you.





Emergency Checklists – To memorize or not to memorize.

Use of emergency checklists versus memorizing them has been an ongoing topic in the aviation industry going back to when I started flying in the 1970s. Even AOPA notes that memory is fallible when discussing memorization versus checklists.

The FAA provides some guidance on this topic and states normal checklists should not be memorized, but certain checklists (emergencies) might require memorization in time-critical situations. The FAA states “We said that checklists are not to be memorized. This is true for normal procedures. It is not necessarily true for all aircraft when it comes to emergency procedures. In many aircraft manuals, in the Emergency Procedures Section, there are immediate action items that must be done if certain emergencies occur. These immediate action items obviously must be memorized and then followed up later with the checklist when circumstances permit…”. (ref https://www.faasafety.gov/gslac/ALC/libview_chapter.aspx?id=6853&chapter=Checklists)

A simple rule of thumb is if the emergency is time critical (e.g. engine failure on departure) there isn’t enough time to reach for the checklist and pilots should be prepared to use the memory checklists. Another good practice is to reference your memory items first and if time permits reference the emergency checklist. WCFC has done an excellent job in highlighting the items on the emergency checklists. They are highlighted in RED/BOLD for memory items and yellow for non-memory items.

Good checkride/club annual examples are pilots dealing with emergencies where initial memory items are completed with a follow-up with the checklist time permitting. Many DPEs have witness the poor execution of a simulated emergency engine out where the applicants reach for and start reading the checklist first all the way to where they would end up in the trees whereas if they had done their memory items first, they would have easily completed the critical tasks and made their designated touchdown spot.

Other good emergency references are:
https://www.aopa.org/training-and-safety/online-learning/safety-spotlights/emergency-procedures
Your paragraph text

That’s it from the DPE corner
Until then – Squawk VFR, Frequency change approved.


# Certificates & Ratings

## CONGRATULATE THE FOLLOWING MEMBERS

| | | | |
|---|---|---|---|
| NIKUNJ TONTHANAHAL | PRIV | 6/1/2022 | KEN/WILL |
| MATT THOMAS | PRIV | 6/4/2022 | ROBERT/MARTIN/DWIGHT |
| HACKNEY TULLOSS | SOLO | 6/13/2022 | DAVE |
| AJ ELLSWORTH | INST | 6/16/2022 | ANTHONY |
| SHAWN MILLER | COMM | 6/17/2022 | KEN |
| PEYTON MCGEE | INST | 6/19/2022 | KEN |
| NICK MALOVICH | INST | 6/26/2022 | KEN |
| KISHOR BATARA | PRIV | 6/26/2022 | JIM/HEINZ |
| EVAN WALDRON | CFI | 6/24/2022 | JAY |
| JASON CAMPBELL | CFI-I | 7/2/2022 | KEN+OTHERS |
| SAM STOUT | COMM | 7/6/2022 | KEN |
| LUKE SIKORSKI | PRIV | 6/30/2022 | RYLI |
| SCOTT ENICKE | PRIV | 7/12/2022 | KEN/SWAMI |
| BILL MINTON | SOLO | 7/12/2022 | JASON |
| SCOUT TEMPLE | SOLO | 8/6/2022 | NINA |
| JOSHUA SWAIN | SOLO | 8/9/2022 | HANNA |
| DAVE COGBURN | SOLO | 8/13/2022 | SAM |
| PETER PANBURANA | PRIV | 8/19/2022 | SWAMI/NINA |
| BOB CHRISTENSON | PRIV | 8/22/2022 | DWIGHT |
| NICK ALFANO | SOLO | 8/22/2022 | JASON |
| DYSON HEPTING | INST | 8/24/2022 | WARD |
| MARTY PRICE | INST | 8/29/2022 | WARD |
| BILL STERN | SOLO | 9/13/2022 | RYLI |
| SUNWOOK JIN | PRIV | 9/14/2022 | RYLI |
| GREG BUCKNER | INST | 9/17/2022 | KEN/JAY |
| KEVIN ALEXANDER | CFI | 9/19/2022 | LUKE |
| JEFF GRAU | PRIV | 9/20/2022 | ANTHONY |
| JON WALKER | PRIV | 9/21/2022 | BETSY/GENE/DWIGHT |
| ELLIE COOK | SOLO | 10/6/2022 | CAITIE |
| ALAN CROSS | SOLO | 10/7/2022 | JASON |
| ANDREW MAGEE | SOLO | 10/11/2022 | KYLE |
| KEVIN COOK | SOLO | 10/19/2022 | KYLE |
| MATT WILLIAMS | SOLO | 10/23/2022 | DWIGHT |

| | | | |
|---|---|---|---|
| DANIEL MOOSE | SOLO | 10/30/2022 | DWIGHT |
| VIVIAN BANCROFT-WU | SOLO | 11/3/2022 | CASEY |
| MICHAEL KING | SOLO | 11/12/2022 | DAVE |
| MICHAEL PLOMER | INST | 11/21/2022 | KEN |
| JOE ANDRESEN | SOLO | 12/2/2022 | KYLE |
| CHRIS FURNE | PRIV | 12/12/2022 | JASON |
| REX MOODY | PRIV | 12/17/2022 | DWIGHT |
| HEATHER HELMAN | SOLO | 12/29/2022 | GEORGE |
| JIM GETKER | INST | 1/3/2023 | HEINZ |
| DREW PEDERSEN | COMM | 1/10/2023 | HEINZ |
| NATE GUERIN | INST | 1/15/2023 | JAY/KEN |
| MACK OCHS | INST | 1/21/2023 | JAY/KEN |
| HACKNEY TULLOSS | PRIV | 1/27/2023 | DAVE |
| ANDREW ABATE | SOLO | 1/28/2023 | JASON |
| MATTHEW REALE-HATEM | SOLO | 2/14/2023 | DAVE |
| MIT KUTCHI | SOLO | 2/18/2023 | DAVE |
| KAJA CORAOR | COMM | 2/20/2023 | CAITIE |
| TOM BORNER | INST | 3/24/2023 | JASON |
| ERIK NODELMAN | PRIV | 3/26/2023 | JIM |
| HEATHER HELMAN | PRIV | 3/26/2023 | GEORGE |
| JACK WILLIAMS | SOLO | 3/26/2023 | KYLE |
| AIDAN KIRBY | COMM | 3/29/2023 | KEN |
| KASPER KUBICA | COMM | 3/30/2023 | DWIGHT |
| HAO ZHANG | PRIV | 4/11/2023 | DWIGHT |
| JASON CAMPBELL | MULTI | 4/11/2023 | N/A |
| BO HANSEN | PRIV | 4/16/2023 | RICHARD |
| JULIUS GOTH | CFI-I | 4/19/2023 | SEAN |
| JASON KIM | INST | 4/21/2023 | HEINZ |
| BILL STERN | PRIV | 4/25/2023 | RYLI |
| DIXON CREWS | SOLO | 4/25/2023 | JASON |
| AIDAN KIRBY | COMM MULTI | 5/4/2023 | N/A |
| CAMERON BEAL | SOLO | 5/6/2023 | DAVE |
| WALT MOULTRIE | SOLO | 5/6/2023 | NINA |
| CHRIS WALSH | SOLO | 5/9/2023 | KYLE |
| BEN DAVIS | SOLO | 5/15/2023 | RYLI |
| JEFFREY DAVIS | SOLO | 5/17/2023 | CAITIE |
| DANIEL MOOSE | PRIV | 5/30/2023 | DWIGHT |
| RICHARD SHORES | PRIV | 6/5/2023 | SEAN |
| ISHAN PATEL | PRIV | 6/8/2023 | HANNA |
| ANDREW ABATE | PRIV | 6/8/2023 | JASON |
| MICHAEL JOHNSON | SOLO | 6/13/2023 | KYLE |
| AJ ELLSWORTH | COMM | 6/16/2023 | N/A |
| MATTHEW REALE-HATEM | PRIV | 7/3/2023 | DAVE |
| MATT WILLIAMS | PRIV | 7/3/2023 | DWIGHT |
| JERRY DAVIS | SOLO | 7/8/2023 | SAM |
| MICHAEL KING | PRIV | 7/6/2023 | DAVE |
| BRIAN GREEN | SOLO | 7/6/2023 | DAVE |
| ALAN CROSS | PRIV | 7/8/2023 | JASON |
| GAIL TARLTON | INST | 7/12/2023 | SEAN |
| KEVIN COOK | PRIV | 7/12/2023 | KYLE |

| | | | |
|---|---|---|---|
| ANDREW MAGEE | PRIV | 7/15/2023 | KYLE |
| SIDDHANTA PANDA | CFI-I | 7/27/2023 | JASON |
| ELLIE COOK | PRIV | 7/29/2023 | CAITIE |
| WES SMITH | SOLO | 8/5/2023 | JASON |
| JOSHUA SWAIN | PRIV | 8/9/2023 | HANNA |
| DAVID BRIGHT | PRIV | 8/12/2023 | DAVE |
| DIXON CREWS | PRIV | 8/13/2023 | JASON |
| BEN DAVIS | PRIV | 8/14/2023 | RYLI |
| WILLIAM COLES | INST | 8/23/2023 | JASON |
| AADHYANT BHATNAGAR | SOLO | 9/3/2023 | KEN |
| THOMAS O'NEAL | SOLO | 9/12/2023 | RYLI |
| JASON CAMPBELL | MEI | 9/11/2023 | N/A |
| CAITIE GIBBS | MEI | 9/11/2023 | N/A |
| TREVOR BARRICK | SOLO | 9/19/2023 | JASON |
| RAHUL GOSWAMI | COMM | 9/21/2023 | HEINZ/JASON |
| MIT KUTCHI | PRIV | 10/3/2023 | DAVE |
| TRIPP BRIDGES | SOLO | 10/4/2023 | CAITIE |
| BRIAN GREEN | PRIV | 10/4/2023 | DAVE |
| EDUARDO TANG | INST | 10/9/2023 | WARD |
| ZACH GROSECLOSE | SOLO | 10/10/2023 | DAVE |
| KEVIN WEBB | SOLO | 10/11/2023 | KYLE |
| JIM TURNER | PRIV | 10/19/2023 | KYLE/KEN |
| JAY NABORS | ATP SE | 10/23/2023 | N/A |
| JEFFREY DAVIS | PRIV | 10/24/2023 | CAITIE |

**Congratulations**
**for all the achievements**

# MISSION OVER NEW YORK – A 9/11 STORY


By: Thomas Donaldson Jr.

**An unlikely scenario unfolds...**

**As September edges closer, I am inextricably drawn to memories etched in my mind from many hours in the cockpit of an F-15 flying combat air patrols (CAPs) over New York City. As an American that was alive that September morning in 2001, I will forever remember the shock, sadness, and anger from the realization that our country had been attacked and death and destruction had been inflicted upon our homeland. As a senior military officer, I also knew that the threat of additional attacks was ever present and our response must be effective and immediate. At the time, I was one year into my last assignment as Vice Commander of an operational test organization in Arizona before retiring from the U.S. Air Force and returning to the East Coast to begin life as a Boeing-767 Captain and father of a soon to be born baby daughter. Life had changed, not just for me, but for all Americans that morning.**

**When I got to my office at the air force base in Tucson, I could already see the outward change in security posture with hastily erected barriers at the entry gate and many more armed airmen posted everywhere. It was clearly a transition to a wartime posture. Subsequent intelligence briefs highlighted the rapidly growing air defense response with all coastal bases tasked with establishing both an airborne CAP presence and significant numbers of armed fighters ready to launch at the command of regional air defense sectors to deter or destroy any potential threats to the major cities and to the Capitol of the United States.**

**This was a phenomenal undertaking and required many air reserve squadrons to call their pilots and maintenance personnel to active duty to bolster the active components already tasked. All services were involved and many aircraft types were part of this force (i.e., F-16, F-18, F-14, F-15), but the F-15 community was especially relied upon since air superiority/air defense was what the aircraft was built for and the pilots trained for exclusively. No one knew initially if there were follow-on attacks planned or how they would be executed (e.g., business jets commandeered, additional commercial airlines hijacked). Because the CAPs needed to be operated 24 hours per day – every day, the demands on squadrons to provide pilots would be high. A call went out for any qualified F-15 pilots to volunteer where need was greatest. I contacted the F-15 fighter wing at Cape Cod, Massachusetts that was tasked with continuous CAP coverage of New York City and was told to get there as soon as possible and be ready for duty. As a highly experienced F-15 pilot, all I needed when I arrived was a quick briefing on local procedures and the rules of engagement (ROE) for possible action. It was a strange thought to think of flying a fully armed F-15 over a major U.S. city – and potentially shooting down a commercial airliner!**

Photo Credit: Dave Henderson

## Executing the Mission

After the initial attacks on the World Trade Center towers and the Pentagon, the Federal Aviation Administration (FAA) closed the entire national airspace. Planners from the Defense Department and the FAA developed specific airspace allotments and procedures for military fighters and support aircraft [i.e., air refuelers, Airborne Warning and Control System (AWACS) radar aircraft] to maintain CAPs in strategic positions at numerous major cities in the U.S. Fighters generally worked in pairs for six-hour CAP duty that would require multiple air-to-air refuelings to ensure adequate fuel for long-range intercepts and the possibility of diversions from the landing airfield as weather might dictate. The F-15s were loaded with a full armament complement of eight air-to-air missiles and over 900 rounds of 20-millimeter cannon, high-explosive shells. Our ROE required a very senior command authority (i.e., a general officer) in the air defense sector to order a pilot to arm and fire on a target of interest. For night missions, we flew with night vision goggles (NVGs) to enhance visual pick up at longer range. My first mission was set for the "graveyard shift", with a briefing at 10:00 pm, takeoff at midnight, and CAP duty from 12:30 am until 6:00 am. We flew a 40-nautical mile (nm) diameter circle at altitudes from 20,000 to 25,000 feet and a center point reference of LaGuardia Airport. As in most missions, both training and operational, many aspects are routine and standard due to the constant practice. The old fighter pilot adage drawn from the air war in Vietnam: "You'll fight like you've trained, because you've trained like you fight," took over for the first part of the mission as the formation split into a fuel-conserving (.8 Mach), counter-rotating orbit – but this was not like any mission I'd flown before.

## Patience is a Virtue

Fighter pilots always train to get an advantage on an adversary. Because of the speed and lethality of modern jet aircraft, decisions resulting in first shot opportunities must be executed along a timeline that typically produces an outcome in less than two to three minutes. Engaging fighters close on each other at rates of speed greater than 20 miles per minute! A typical intercept of targeted adversaries starts at 50-60 nm and within a single minute, the geometry of attack, electronic identification (hostile or friendly) missile launch and defensive maneuver execution is complete. Needless to say, adrenaline is pumping at high rates and there is typically little time to contemplate all the nuances of a particular situation. An aware, trained, and capable adversary necessitates exceptionally quick thinking to adapt to a rapidly changing tactical environment for mission success – and survival! These missions were totally different in every respect. Our job was to deter further 9/11-type attacks through our mere presence and the low probability of a terrorist success. Of course, the potential existed that we might actually have to shoot down an airliner (with innocent passengers onboard) to avoid an even more catastrophic result involving an intentional crash into densely populated areas. Instead of functioning in a compressed timeframe against fighter adversaries, we had to endure hours of contemplation, flying a slow, fuel-conserving orbit and fighting to stay alert while considering

the possibility of executing a mission that might kill hundreds of innocent people. I have come face to face with potential enemy fighters and bombers over the years, but these missions (Operation Noble Eagle Homeland Defense CAPs) were the most mentally grueling. Fortunately, out of tens of thousands of sorties flown across the U.S. in that first year after 9/11, it was never necessary to shoot down a civilian aircraft (though a few uninformed civilian pilots came close to ending their flying days in a spectacular way!). It is a testament to all those pilots from bases across the country that maintained strict discipline, airmanship and a tremendous sense of duty and responsibility in their mission that millions of hours were flown during “Operation Noble Eagle” without a single accident or incident and no further attacks were ever launched.

# VOLUNTEER

*YOUR SKILLS ARE THE BACKBONE OF OUR FLYING CLUB, AND WE'RE REACHING OUT TO HARNESS YOUR EXPERTISE TO ENSURE THE CONTINUED SUCCESS OF OUR COMMUNITY. VOLUNTEERING IS NOT JUST A REQUEST; IT'S A VITAL CONTRIBUTION TO KEEPING OUR FLYING CLUB SOARING. WHETHER IT'S FIXING AIRCRAFT, MAINTAINING OUR FACILITIES, OR ASSISTING WITH VARIOUS DAY-TO-DAY OPERATIONS, YOUR INVOLVEMENT IS INVALUABLE. YOU DON'T NEED PRIOR EXPERIENCE; WHAT MATTERS MOST IS YOUR ENTHUSIASM AND COMMITMENT TO CONTRIBUTING TO THE WELL-BEING AND GROWTH OF OUR FLYING CLUB. BY ACTIVELY PARTICIPATING IN THESE ESSENTIAL TASKS, YOU PLAY A CENTRAL ROLE IN MAINTAINING OUR CLUB'S INTEGRITY AND FUNCTIONALITY. MOREOVER, VOLUNTEERING IS NOT JUST ABOUT MAINTAINING; IT'S ABOUT GROWTH. YOUR INVOLVEMENT IS CRUCIAL IN EXPANDING OUR CLUB'S HORIZONS, ATTRACTING NEW MEMBERS, AND FOSTERING A VIBRANT AVIATION COMMUNITY. BY CONTRIBUTING YOUR SKILLS, YOU'RE NOT JUST KEEPING OUR FLYING CLUB RUNNING – YOU'RE PROPELLING IT FORWARD. YOUR DEDICATION IS THE KEY TO OUR CONTINUED SUCCESS, AND WE INVITE YOU TO BE AN INTEGRAL PART OF THE JOURNEY.*

***WASHING AIRCRAFT:*** IS A CRITICAL ASPECT OF MAINTENANCE THAT GOES BEYOND AESTHETICS—IT PLAYS A PIVOTAL ROLE IN ENSURING THE SAFETY, PERFORMANCE, AND LONGEVITY OF THE AIRCRAFT. HERE ARE SEVERAL REASONS WHY REGULAR AIRCRAFT WASHING IS OF UTMOST IMPORTANCE:

AERODYNAMIC EFFICIENCY:

- CLEAN SURFACES CONTRIBUTE TO IMPROVED AERODYNAMIC EFFICIENCY. A LAYER OF DIRT, DUST, OR GRIME CAN DISRUPT THE SMOOTH AIRFLOW OVER THE AIRCRAFT'S SURFACES, LEADING TO INCREASED DRAG AND REDUCED FUEL EFFICIENCY. BY KEEPING THE AIRCRAFT CLEAN, WE ENHANCE ITS OVERALL PERFORMANCE AND FUEL ECONOMY.

CORROSION PREVENTION:

- AIRCRAFT ARE EXPOSED TO VARIOUS ENVIRONMENTAL ELEMENTS, INCLUDING RAIN, POLLUTANTS, AND SALT FROM COASTAL AREAS. THESE ENVIRONMENTAL FACTORS CAN ACCELERATE THE CORROSION PROCESS, COMPROMISING THE STRUCTURAL INTEGRITY OF THE AIRCRAFT. REGULAR WASHING HELPS REMOVE CORROSIVE AGENTS, PROTECTING THE AIRCRAFT'S EXTERIOR AND EXTENDING ITS LIFESPAN.

MAINTAINING PAINT INTEGRITY:

- THE AIRCRAFT'S PAINT IS NOT JUST FOR AESTHETICS; IT SERVES AS A PROTECTIVE LAYER. CONTINUOUS EXPOSURE TO POLLUTANTS AND UV RAYS CAN LEAD TO PAINT DEGRADATION. WASHING THE AIRCRAFT HELPS PRESERVE THE PAINT, PREVENTING IT FROM PEELING OR FADING. THIS, IN TURN, SAFEGUARDS THE UNDERLYING METAL OR COMPOSITE MATERIALS.

INSTRUMENT AND SENSOR FUNCTIONALITY:

- ACCUMULATION OF DIRT AND DEBRIS ON THE AIRCRAFT'S SENSORS, ANTENNAS, AND INSTRUMENTS CAN INTERFERE WITH THEIR FUNCTIONALITY. REGULAR WASHING ENSURES THAT THESE VITAL COMPONENTS REMAIN FREE FROM OBSTRUCTIONS, ALLOWING FOR ACCURATE READINGS AND RELIABLE PERFORMANCE OF ONBOARD SYSTEMS.

WEIGHT DISTRIBUTION AND BALANCE:

- WHILE THE WEIGHT OF DIRT AND CONTAMINANTS MAY SEEM NEGLIGIBLE, THE ACCUMULATION OVER TIME CAN IMPACT THE AIRCRAFT'S WEIGHT DISTRIBUTION AND BALANCE. PROPER WEIGHT DISTRIBUTION IS CRUCIAL FOR FLIGHT STABILITY AND CONTROL. REGULAR WASHING HELPS MAINTAIN THE SPECIFIED WEIGHT AND BALANCE PARAMETERS.

PROFESSIONAL IMAGE:

- BEYOND THE TECHNICAL ASPECTS, A CLEAN AND WELL-MAINTAINED AIRCRAFT REFLECTS POSITIVELY ON THE FLYING CLUB. IT CONTRIBUTES TO A PROFESSIONAL IMAGE AND INSTILLS CONFIDENCE AMONG CLUB MEMBERS, PASSENGERS, AND REGULATORY AUTHORITIES. A WELL-KEPT AIRCRAFT IS A TESTAMENT TO THE CLUB'S COMMITMENT TO SAFETY AND EXCELLENCE.

***CLUB AMBASSADORS:*** ARE INSTRUMENTAL IN FOSTERING A POSITIVE AND WELCOMING ENVIRONMENT WITHIN OUR FLYING CLUB. SERVING AS THE FACE OF THE CLUB, THEY ENHANCE COMMUNICATION, PROMOTE CAMARADERIE, AND FACILITATE A SENSE OF COMMUNITY AMONG MEMBERS. BEYOND ADMINISTRATIVE TASKS, AMBASSADORS EMBODY THE CLUB'S VALUES, MAKING NEWCOMERS FEEL AT HOME AND REINFORCING A SHARED COMMITMENT TO AVIATION EXCELLENCE. BY PROVIDING TOURS AND CREATING A WELCOMING ATMOSPHERE, THEY PLAY A VITAL ROLE IN BUILDING AND SUSTAINING THE VIBRANT SPIRIT THAT DEFINES OUR AVIATION COMMUNITY, ENSURING THAT EVERY MEMBER FEELS VALUED, SUPPORTED, AND CONNECTED.

***BUILDING MAINTENANCE:*** ENSURING THE REGULAR UPKEEP OF OUR CLUB FACILITIES IS CRUCIAL FOR A SAFE, WELCOMING ENVIRONMENT. FROM MINOR REPAIRS TO PROACTIVE MAINTENANCE, THIS COMMITMENT CONTRIBUTES TO BOTH THE AESTHETIC APPEAL AND LONGEVITY OF OUR INFRASTRUCTURE. BY INVESTING IN THE CARE OF OUR CLUB BUILDINGS, WE CREATE A SPACE THAT MEMBERS CAN TAKE PRIDE IN, FOSTERING A POSITIVE ATMOSPHERE FOR EVERYONE IN OUR AVIATION COMMUNITY.

***MAINTENANCE NIGHT;*** A WEEKLY GATHERING EVERY THURSDAY, PROVIDES A UNIQUE OPPORTUNITY FOR CLUB MEMBERS TO ACTIVELY ENGAGE IN AIRCRAFT MAINTENANCE. THIS COLLABORATIVE EFFORT NOT ONLY ENSURES THE UPKEEP OF OUR FLEET BUT ALSO PROMOTES SKILL-SHARING AND CAMARADERIE AMONG MEMBERS. IF YOU'RE INTERESTED IN BEING A PART OF THIS HANDS-ON EXPERIENCE, SIMPLY RESPOND TO THE EMAIL SENT OUT WEEKLY BY RYAN. YOUR INVOLVEMENT IS NOT JUST WELCOMED; IT'S A CRUCIAL CONTRIBUTION TO THE ONGOING SUCCESS AND OPERATIONAL EXCELLENCE OF OUR FLYING CLUB. JOIN US IN MAKING MAINTENANCE NIGHT A VIBRANT AND COLLECTIVE EFFORT!

***NEWSLETTER:*** VOLUNTEERING TO CONTRIBUTE TO OUR CLUB NEWSLETTER IS AN EXCELLENT WAY TO ACTIVELY ENGAGE AND SUPPORT OUR AVIATION COMMUNITY. BY SHARING YOUR INSIGHTS, EXPERIENCES, OR EVEN FEATURING NOTABLE EVENTS, YOU BECOME AN INTEGRAL PART OF THE COMMUNICATION PROCESS WITHIN THE CLUB. WHETHER YOU ENJOY WRITING ARTICLES, TAKING PHOTOGRAPHS, OR HAVE A KNACK FOR DESIGN, YOUR UNIQUE SKILLS CAN CONTRIBUTE TO THE CREATION OF A VIBRANT AND INFORMATIVE NEWSLETTER. IT'S A CHANCE TO SHOWCASE THE DIVERSE TALENTS WITHIN OUR COMMUNITY AND KEEP EVERYONE INFORMED ABOUT THE LATEST NEWS, UPCOMING EVENTS, AND EXCITING ACHIEVEMENTS. YOUR PARTICIPATION IN VOLUNTEERING FOR THE CLUB NEWSLETTER NOT ONLY STRENGTHENS THE SENSE OF COMMUNITY BUT ALSO ENSURES THAT OUR SHARED PASSION FOR AVIATION IS CELEBRATED AND SHARED AMONG ALL MEMBERS. IF YOU'RE INTERESTED IN CONTRIBUTING, REACH OUT TO OUR NEWSLETTER TEAM – YOUR INVOLVEMENT IS KEY TO KEEPING OUR COMMUNICATION CHANNELS ALIVE AND THRIVING.

Photo Credit: David M. Remedios

Photo Credit: Chris Furne

**EVENTS CALENDAR**

KEEP UP WITH CLUB EVENTS BY INTEGRATING THE WCFC GOOGLE CALENDARS INTO YOUR PERSONAL CALENDAR IF YOU USE A GOOGLE ACCOUNT.
IF YOU DON'T HAVE A GOOGLE ACCOUNT, YOU CAN SAVE IT AS A BOOKMARK.

**HTTP://TINYURL.COM/WINGSCALENDAR**

*THANKS TO ALL WHO SUBMITTED ARTICLES AND PHOTOS. WOULD YOU LIKE TO SEE YOUR PHOTOS IN OUR*

*NEXT ISSUE? SEND 'EM ON! AND IF YOU HAVE A STORY IDEA FOR THE NEXT ISSUE, CONTACT US HERE:*

***WINGSOFCAROLINANEWSLETTER@GMAIL.COM***