



DR AHEAD



THE AIR FORCE NAVIGATORS OBSERVERS ASSOCIATION NEWSLETTER

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The 55th Operations Group establishes a new detachment in Alaska (July 25, 2023). Members of the 55th Operations Group Detachment 1 pose for a photo alongside an RC-135V/W Rivet Joint at Joint Base Elmendorf-Richardson, Alaska. The new detachment was recently established to serve as a strategic launch and recovery point for Rivet Joint operations and exercises in the region. (U.S. Air Force photo by Airman 1st Class Moises Vasquez.)

PRESIDENT'S MESSAGE

by Robert (Bob) Certain, Mather 70-16

First, I want to thank the navigators who have volunteered to present the **AFNOA** award to distinguished graduates of the 479 Flying Training Group at NAS Pensacola, FL. Each recipient will receive a one-year membership with the hopes they will find value in it and continue with a paid membership after that.

I also posted on the Mather Undergraduate Navigator Training Facebook group and invited them to join **AFNOA**. Most did not know about us, but several replied that they would do so. One man who flew the B-52 in Vietnam later became a pilot. I assured him that he would be welcome to join the rest of us.

I believe the best way to grow our membership is for one member to invite another known navigator to join. Mather, Randolph and Pensacola are the places with the most recent graduates. With some effort in Pensacola, and some personal invitations to our friends and colleagues, **AFNOA** will grow and continue to be a viable organization for years to come.

SAVE THE DATE: AFNOA REUNION REMINDER

by Jim Faulkner, James Connally 64-04

The Reunion Brat will be helping us with the **September 2026** Reunion to be held in San Antonio, Texas. Here is some info so we can start planning to attend.

Hotel info:

Dates: September 21-24, 2026

Room Rates: \$149 plus taxes

Holiday Inn Riverwalk

217 N. St. Mary's St

San Antonio, Texas 78205

NOTE: The room block WILL NOT open until after October 7, 2025.

More to follow!

NOTAM: DEATHS and CHANGES OF PERSONAL INFORMATION

Report address, cell or land line number, and e-mail changes to: **AFNOA**, 4109 Timberlane, Enid, OK 73703-2825; or to jfaulkner39@suddenlink.net; or call 580-242-0526.

TABLE OF CONTENTS

President's Message, by Robert G. Certain	1
Save the Date: AFNOA Reunion, by James Faulkner .	1
Membership Application Form	2
Shaping the Future of Airpower, by Major Jordan P. Allen	3
1,000 Hours in the Bomb Bay, by Dale Everson	4
MIA for Five Decades, by Murray Siegel	6
From the Treasurer's Desk, by Leonard Melcher	6

Help Needed, by Jim Faulkner	6
Aurora 7 Project Mercury, by Giles W. Willis, Jr.	7
I was a CRAF Navigator, by Jed Orme	9
Navigating Across the Arctic, by Albert Powers	11
Letters.....	12
Last Flights, by Jim Faulkner.....	12
The AFNOA Board & Operating Committees.....	16

<p align="center">MEMBERSHIP APPLICATION AIR FORCE NAVIGATORS OBSERVERS ASSOCIATION</p>	
Name _____	
Spouse's Name _____	
Address _____	

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State / 9-digit ZIP _____	
Home Phone _____	
Work Phone _____	
Cell Phone _____	
E-Mail Address _____	
Base Name/Class Number _____	
<p>Make check payable to AFNOA and mail to: Leonard T. Melcher, AFNOA Treasurer 103 Steel Valley Drive Boerne, TX 78006-7019 Telephone: 512-296-5209 e-mail: c5nav@hotmail.com</p>	
<p>Note: AFNOA is an IRS 501(c)(19) non-profit organization. Annual Membership — \$15.00 under age 79 \$50.00 for 4-year membership Age 80 and over — \$35.00 for life</p>	
<p>If you are currently a member, GREAT! Please consider a donation to the operating account. If you are not a current member, please consider joining and giving a donation to the organization. (Checks only, please.) Thank you.</p>	
Membership	\$ _____
Donation to Operating Account	\$ _____
Total Amount Enclosed	\$ _____

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MANUSCRIPTS are welcomed, especially by e-mail (address: sue.curran@att.net) or by submittal to the editor on data CDs, IBM/Microsoft Windows-compatible formats only please. All submissions must include the address/contact of the contributor; no anonymous material will be printed; however, names will be withheld on request. The editor reserves the right to edit submitted articles for reasons of taste, clarity, legal liability, or length. The comments and views herein represent the views of the editor and are not necessarily those of **AFNOA**, Inc. Deadline for the next issue is 15 August 2025.

CHANGE OF ADDRESS: Please report changes of address to: **AFNOA**, Inc., 4109 Timberlane, Enid, OK 73703-2825; jfaulkner39@suddenlink.net; 580-242-0526.

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**479TH FLYING TRAINING GROUP AFNOA
AWARD. FIRST QUARTER 2025**

Jordan P. Allen, Major, USAF
Master Instructor / Assistant Director of Operations
455th Flying Training Squadron
NAS Pensacola, Florida

**Shaping the Future of Airpower: My Time as a T-6A
Instructor at the 479th FTG**



In the ever-evolving landscape of modern air warfare, the Combat Systems Officer (CSO) stands as a critical linchpin, bridging the gap between cutting-edge technology and tactical execution. These officers are the brains behind the brawn, the tacticians who orchestrate complex missions and ensure the effective employment of airpower. As an 18-year Air Force veteran, hailing from Rochester, NY, I arrived at NAS Pensacola in June of 2021 with a deep appreciation for the

vital role CSOs play as a former B-52H Pilot. Now, as a Master Instructor in the T-6A Texan II at the 479th Flying Training Group (FTG), I have the privilege of shaping the future of airpower by training the next generation of these essential warfighters. This is my story of the unique mission, challenges, and rewards of serving at the 479th FTG.

The 479th FTG's mission is clear and ambitious: as the CSO center of excellence to produce aircrew proficient in aviation fundamentals and develop Airmen ready to lead. These officers are innovators and problem-solvers who are on the leading edge of technology. We actively participate in developing and refining the training curriculum, ensuring it aligns with technological advancements and the latest tactics and challenges in the field. From coordinating air strikes to managing electronic warfare systems, CSOs are at the heart of every mission. Upon graduation, our students are dispersed across five separate Major Commands (MAJCOMs), including Air Force Special Operations Command (AFSOC), Air Force Global Strike Command (AFGSC), and Air Combat Command (ACC), highlighting the breadth and depth of the training they receive. These CSOs will go on to fly on a multitude of aircraft including the B-52H Stratofortress, F-15E Strike Eagle, B-1B Lancer, C-130 Hercules, and many more.

The T-6A Texan II, with its advanced avionics and versatile performance capabilities, serves as the ideal platform for this demanding training regimen. Adding to our T-6's significance, the T-1A Jayhawk is being retired from the USAF, making the T-6A the only flying platform in Undergraduate Combat Systems Officer Training (UCT). With over 700 flight hours and 645 flights under my belt in this aircraft, I can attest to its effectiveness in preparing students for the challenges they will face in operational squadrons. The T-6A allows us to instill fundamental flying skills while exposing students to the complexities of modern airborne systems, crucial for their future roles as CSOs. We have 24 of these



tandem-seat assigned airplanes in our fleet. This also means that, during flight operations, the student-to-instructor ratio is 1:1, allowing for highly personalized and focused instruction.

Being an instructor at the 479th FTG is both challenging and immensely rewarding. A typical day involves a mix of classroom instruction, simulator training, and live flight operations. The curriculum is demanding, requiring instructors to stay current with rapidly evolving technology and adapt their teaching methods to individual student learning styles. The pressure of shaping future leaders in a high-stakes environment is ever-present, as is the paramount importance of safety and risk management in flight training. We must not only teach them how to operate complex systems but also how to make critical decisions under pressure. The rewards, however, are equally profound. Witnessing the growth and development of students as they progress through the program is an incredibly gratifying experience. Knowing that I am contributing to national security by preparing these officers for the front lines is a source of immense pride.

The camaraderie within the 479th FTG is exceptional. With 39 instructor pilots, the mission set, the location in beautiful Pensacola, and the ability to go home every night all contribute to a positive and supportive work environment. We are a close-knit team, relying on each other for support and guidance. This strong team dynamic is essential in a demanding training environment where lives are on the line. Regular social gatherings and squadron events further strengthen our

bonds and foster a sense of shared purpose.

Looking to the future, the need for highly skilled and adaptable CSOs will only continue to grow. As technology advances and the threats we face become more complex, it is imperative we continue to innovate and adapt our training methods to ensure our graduates are prepared to meet these challenges head-on. We must embrace new technologies, refine our curriculum, and foster a culture of continuous learning and improvement.

My time as a T-6A instructor at the 479th FTG has been one of the most rewarding experiences of my Air Force career. It is a privilege to play a role in shaping the future of airpower by training the next generation of Combat Systems Officers. I am proud to serve alongside the dedicated men and women of the 479th FTG, whose professionalism and commitment to excellence ensure that the United States Air Force remains the most dominant air force in the world.



Editor's Note: The above article is the first in a series of articles to feature the quarterly **AFNOA** award winners from the 479th Flying Training Group at Naval Air Station Pensacola, FL. The 479 FTG is the Air Force "school-house" for all Combat Systems Officers accessions. The honoree receives a one year online membership and subscription to **DR Ahead**.

NOTAM: NEW FLASH DRIVE

AFNOA has created a new offer to our members. We have created an updated flash drive containing all of the instructional material from navigator training, articles from *The Navigator* magazine, and additional other materials from the original **AFNOA** flash drive. We will also include digital copies (PDF) of the **DR Ahead** newsletter going back to the beginning when it was just a single letter in 1984, to the latest copy when you order. Your suggested donation of \$35 will cover all expenses including shipping. Just place your order with Leonard Melcher (Treasurer), contact info on page 16 of this publication. The flash drive will also be available at the next reunion.

1,000 HOURS IN THE BOMB BAY

by Dale E. Everson, Harlingen 58-12

After graduating with the 58-12 Aviation Cadet class in July 1958 from Harlingen AFB, Texas, I was assigned to the 419th Bomb Squadron, 301st Bomb Wing, 801st Air Division, 8th Air Force in the Strategic Air Command (SAC) at Lockbourne AFB, Ohio. I began my required flight hours logging navigation time in KC-97s and moved to a B-47E on July 29, 1959.

The EB-47E, Phase V were especially modified aircraft to provide active ECM support to penetrating bomber aircraft. There were 50 Phase V, EB-47E aircraft created. Our crew was formed in early July 1959 and consisted of the normal three-man front-end crew, a master sergeant, and me. In flight we identified on intercom as Ravens. Raven One was an Electronic Warfare Officer and Raven Two was an enlisted air crew member. I was Raven One.

The Phase V capsule was a permanent modification to the aircraft bomb bay. These aircraft were no longer capable of carrying weapons. Prior to the flight we would stow our flight lunches, coffee thermos and our flight manuals in the capsule. A normal training mission was five to six hours. The Ravens took off sitting on the floor in the aisle below the aircraft commander (A/C) and behind the navigator. We were restrained in slings which we would then roll up and stow before going to the bomb bay. Usually, we remained forward until we were above 2,000 feet. It was always dicey getting into the tunnel without standing on the entrance ladder or door. The last Raven leaving the forward compartment closed their pressure door. Sometime before I started flying in the B-47, they had placed dense foam padding on the metal tunnel floor as crews were getting bone bruising on their knees. Crawling through the tunnel with the back-pack chute on was a chore. Once we were both through the capsule door, we could pressurize our capsule and control our temperature separately from the front cabin. There were two ways of escape: you could crawl back through the tunnel and bail out the entrance door, or the capsule had downward ejection seats which could be fired through a fiberglass hatch.

Both Ravens faced to the rear. Raven One sat on the port side or right side as you entered the capsule. Raven One had an APR-9 receiver that covered the D/E/F/G/H/I frequency bands and essentially gave the Raven a "keyhole" to look at each frequency band. Picture a small 3-inch scope you could move through the frequency bands. Only one of these bands could be viewed at a time. The APR-9 receivers severely limited the Raven's capability to locate and jam signals in these multiple bands. He also had a signal analyzer which aided in analysis of the signal displayed on the receiver. Between the two Ravens we had access to

14 electronic jammers that could be tuned to the various frequencies. The jammers could be tuned to a specific frequency or could be set to sweep a given frequency range. They also had the capability to switch the jammers to a directional antenna or an omnidirectional antenna. The purpose of electronic jamming was to mask the skin paint that ground radar sites were looking for to identify an approaching aircraft. The jamming signal was many times stronger than the skin paint signal and caused the radar scope of the ground radar to "bloom" or to become totally unreadable. We also had an ALE-1 chaff-dispensing system that we could control from our stations. Each bundle of chaff consisted of hundreds of small pieces of aluminum foil, like tinsel. These were cut in various lengths to represent a target to a multitude of radar frequencies.

Raven Two had an APR-14 receiver for the lower data link and communication bands. He controlled jammers for those frequency bands. The capsule along with the front-end crew had an APS-54 radar receiver which would alert when a radar locked onto the aircraft. Its warning consisted of a red light and a strobe on a small scope with an indication of the direction the signal was coming from. During a normal training mission, we would fly against Radar Bomb Scoring (RBS) sites which would generate signals that we were permitted to jam. Their signals could be tuned so we got experience searching for them. Our performance was graded on how long it took to locate and jam a specific signal. Since Raven One was also a navigator he was required to pre-calculate all celestial navigation observations. The navigator had no access to the sky, so the copilot would use a sextant to take the observations and pass the data to Raven One and the navigator.

After some training flights together as a five-person crew, we were designated a combat ready Lead Crew. Later we became a Select Crew in SAC's system. I received a "spot" promotion to first lieutenant. Once combat ready we were then assigned to go on alert at our base. We lived in a "mole-hole" alert barracks near our aircraft. We had four squadrons of EB-47Es with each always providing at least one crew on alert. Details of our mission were kept in a sealed container in the aircraft, to be opened only upon our launching. The mission of the front-end crew was to get the Ravens and their jammers into the target area.

Later, we began rotating to Greenham Common in England on what was known as Reflex. My log indicates that my first Reflex was on June 2, 1960. We could not fly that far without refueling. We met up with KC-97 tankers off Newfoundland. The KC-97 had to go into a shallow dive to keep the B-47 from stalling. This was one of the most dangerous phases of flight for the B-47, with many crashing trying to refuel. The crew rested overnight and went on alert the following morning, usually with the plane we had brought over. We were on



301st Bomb Wing Crew of the Month, May 1961. Left to Right: Capt. William J. Campbell, A/C; Capt. Hershel Coulter, CP; Capt. Anthony Giuliani, Nav; 1Lt Dale E. Everson, Raven One; MSgt Henry Summey, Raven Two. Photo provided by Dale Everson.

alert for seven days, seven off, and back on for seven days, after which we returned to our home base. On one of our times on alert in England, we responded to the aircraft and the decoded message was to start engines. We got ready to take off. Another decoded message came, indicating to shut down our engines and remain in the aircraft. I crawled into the tunnel awaiting further messages. The next message directed us to start engines and taxi. The pilots had started the starboard engines and when they tried to start #4, right beside the tunnel...it exploded. I climbed up into the front cabin and saw an orange glow on the A/C's face. He told me to tell the firetruck not to put foam into the engine, as it would ruin it, and he would try to windmill it to blow the flame out. The firetruck had maneuvered directly in front of the engine and their overhead nozzle was pointed at the engine. I told the fire crew what we were trying to do and we all waited. The A/C was able to blow out the fire. It turns out that when the engines were shut down the fuel valve for #4 had not closed all the way and fuel had puddled in the engine. Now we needed a new engine, and we were no longer on alert.

In hindsight I feel very fortunate to have had an excellent aircraft commander, William J. Campbell, who later in his career became a three-star general and the vice commander of SAC. See the photo of our crew. In reading *Boeing B-47 Stratojet*, I discovered that 525 personnel were killed during the life of the B-47 program. The B-47 crashed in every mode of flight from over-rotating on takeoff, climb out, air refueling, touch-and-goes and GCI approaches. In one week, the wings fell from five B-47 aircraft, killing most of the crew members. The B-47 had the worst safety record of any USAF aircraft. In hindsight, I never realized how dangerous they were.

My last flight on the EB-47E was on June 22, 1966. I logged 1,080.3 hours in the bomb bay. Our aircraft were being transferred to the bone yard.

MIA FOR FIVE DECADES

by Murray Siegel, Ph.D., James Connally 65-03

Each Memorial Day, I devote time to remembering my first B-52 crew commander, Colonel William E. Campbell. Bill was a skilled pilot and an exceptional leader, who made the ultimate sacrifice for his country. On 29 Jan 69, Bill's F-4 was shot down by a SAM on a bombing mission over Mu Gia Pass in Laos. Unlike a typical squadron mission, this was a daylight attack and Bill's regular co-pilot had been replaced. No chutes were observed and no radio calls were detected. Only Bill's college graduation ring (Texas A&M class of 1952) and his personal sidearm were eventually recovered.

He was listed as MIA, and despite efforts by his family, there was no determination of Bill's fate. His wife, Boo, died in 1995, never knowing whether she was a widow or if her love was still alive somewhere in Southeast Asia. In 2014 a collection of remains from crash sites in Laos were collected and, in 2016, a bone fragment in that collection was determined to be Bill's remains. He was buried with full military honors, including a missing man formation, at Arlington in 2017. Boo had been cremated, so the urn with her ashes was laid to rest alongside of Bill.

I was assigned to Bill's crew during the summer of 1965, and was warned that he would volunteer me for various tasks. Indeed, he did; I gave a talk at a nursing home, gave a flight line tour to Civil Air Patrol cadets, was an observer at an Air Defense Command site when SAC "attacked" the U.S., stood on static display with a B-52 at our base's Armed Forces Day open house and drove Santa Claus on Christmas Eve to a family celebration. Of course, when writing my evaluations, Bill could list all of my volunteer efforts.

We spent two weeks out of five on alert and Bill was quick to sense if a member of the crew had a problem, and to help resolve that problem. Wives seemed to have difficulties while the husbands were on alert, and Boo was there to partner with the wife to overcome the difficulty. I was the youngest Instructor EW in the squadron, thanks to Bill's efforts.

Bill lived up to the Aggie motto, "Duty, Honor, Country," and it is a shame that his life was cut short. At least, his family received closure after 47 years of uncertainty and he lies in hallowed ground next to Boo.

NOTAM: DR AHEAD BY INTERNET

Still getting a hard copy of **DR Ahead**? Join the over three hundred members who have elected to receive **DR Ahead** via the internet, thereby helping to ensure the longevity of our association by saving **AFNOA** the postage and printing. Please e-mail to Jim Faulkner at jfaulkner39@suddenlink.net to switch.



Bill Campbell's crew (E-26) taken on 14 May 66.

Left to right: Jim Johnson, Co-Pilot; Bill Campbell, Aircraft Commander; Jerry Sloan, Radar Nav; Don Beamer, Nav; Hap Hertel, Gunner; Murray Siegel, EWO. Photo provided by Murray Siegel, sent to him by Bill's adult children in 2002, when he was still MIA.

FROM THE TREASURER'S DESK

by Leonard Melcher, Mather 74-13

The donation report for the first part of 2025 will not be included in this copy of **DR Ahead**. I had back surgery on May 1st and am currently in a rehab hospital in Boerne, Texas. Everything went well and I will be released in a couple of weeks. I will include the donation report in the following **DR Ahead**.

HELP NEEDED: ADDRESS/PHONE/E-MAIL CHANGES

by Jim Faulkner, James Connally 64-04

In the past few months John Fradella and I have spent many hours trying to relocate **AFNOA** members who move to assisted living or another location. I do not have two-plus hours to spend trying to find relocated members. We have about 40 changes each mailing cycle. *Please* advise Jim Faulkner or have your relative let us know when you move.

My info is: James Faulkner (**AFNOA** Membership); land line 580-242-0526; Cell 580-747-1489; Address 4109 Timberlane, Enid OK 73703; email is jfaulkner39@suddenlink.net.



AURORA 7: SCOTT CARPENTER'S PROJECT MERCURY FLIGHT, 24 MAY 1962

by Giles W. Willis, Jr., Ph.D., Ellington 55-08

The official records of Scott Carpenter's flight are quite different from the true first-hand account that I am relating here.

In 1960 I was assigned to the Air Force Missile Test Center at Patrick Air Force Base. I had flown many missions for several years to remote sites in the east, west, north, and south Pacific. I was now an Instructor/Flight Examiner on flights to collect data from nose cones launched from the Cape, some of which were to impact thousands of miles from Patrick Air Force Base into the Indian Ocean where there's no radio and no navigational aids and with Morse code being the only way we could communicate with our central control. Flight crews at Patrick spent a lot of time at down-range sites to provide various types of support for space and missile tests. For this job we had our own special maps. They were transverse Mercator maps. A normal Mercator map is tangent to the earth at the equator. Our maps were tangent to the earth at the range line. That would be 103 degrees down range from the Cape. So, we had very good conformal accuracy between our maps and our actual physical world. (This comment was for the 1534s.) The control for our missions was Thinker One, located at Patrick AFB, not at the Cape. The administrative person on the radio at Thinker One always thought they knew more about our flight mission and conditions than the flight crews who were actually in the airplanes. In fact, my friend, Ed Bayer, once replied to Thinker One and said, "If you are in charge, shake the stick."

Sometime about 1960, the powers that be divided the world (Not just Gaul, as Caesar did, but the whole world) into three parts for the space and missile business. The Atlantic Missile Range went from Patrick Air Force Base to the 180° longitude line and any space and missile business in that area belonged to the Air Force. Similarly, the Pacific Missile Range went from Point Magoo to the 180° longitude line and the Navy was in charge. Any missiles that were launched and recovered in the continental US belonged to the Army. As a part of this realignment of responsibilities, the Army's Jupiter and Juno projects were taken away from the Army and given to the Air Force. The Army guys were not pleased with that decision. When project Apollo came along with the recovery of the astronaut occurring in the Atlantic Missile Range, the Navy was given the recovery mission, even though it was in the Air Force area of operation. We, that is the flight crews at Patrick, were surprised that we did not get the primary responsibility for the recovery mission. But the fact was, we did not get it.

The US Navy was in charge of astronaut recovery. They made that very clear to the Air Force people who were assigned to participate in Project Mercury. We had two briefings leading up to the recovery operations for Astronaut John Glenn's launch on Feb 20, 1962. It was very clear that the US Navy did not want any USAF aircraft people anywhere near the 3-sigma splashdown point. The location of my aircraft was no exception. John Glenn's splashdown went according to plan. We were nowhere near the splashdown. My crew and I spent the night in Antigua. John Glenn, on the other hand, returned to Patrick AFB in a motorcade that we called the "triumph-full" return of John Glenn. My wife, Betty, and the children were back at home at the Cape and parked along the side of the road to witness this return and take photographs. It was the next day when our C-54 returned to Patrick. I asked Betty, "Did you get pictures?" She did get photos with our 35 mm camera with Kodachrome film. We sent the film off to be processed. I thought, when the film returns from processing, we will have photos of the historic event. When the film came back, we found that all of the pictures were out of focus and so it was impossible to know which vehicles had John Glenn or Vice President Johnson in them, or who was in the photos we got. Here is a sample. The photo recognizes that there was a motorcade for John Glenn's return from space and that we got photos of it.



John Glenn's motorcade parade. Photo provided by Giles W. Willis, Jr.

Two months later they began new briefings for the second Mercury-Atlas flight. It was to be called Aurora 7 and Navy Commander Scott Carpenter was the astronaut. Everything was the same as what we did for John Glenn. When the assignments came out, my location was the same place that we were for that previous launch. One of our flight crews had supported the last mission out of Panama. That's what I was hoping for, but it was back to the Quonset hut at Antigua for our crew.

For the Aurora 7 flight with Astronaut Scott Carpenter, we were again out in an area a long way from the expected splashdown point. We had two Air Force aircraft covering our region. It was us in a big four-engine C-54, and a two-engine SA-16 that could land in the water. Our aircraft had instruments to take data on

nose cones as they reentered the earth's atmosphere. We also had a special open door on the side of the aircraft where we could maneuver the film camera to take pictures of the nose cone reentry. We also had a 20-man raft that we could drop to anyone who needed it. Our companion aircraft could land and take off on the water and they also had a paramedic jumper on board. We found our spot to go to and set up an orbit around one of the many islands in the region. Thinker One advised us that the launch had taken place on time and they would keep us informed of the progress. After about five hours, Thinker One told us to go to a certain set of coordinates and begin a search. And so we did.

About 20 minutes later, we found Scott Carpenter. The SA-16 soon joined us at that site. Scott Carpenter had exited the capsule and was just lying on his back in his one-man raft just waiting for someone to find him. He had already put the collar around the space capsule to prevent it from sinking. The water was calm. The weather was clear but Scott Carpenter's walkie talkie radio was not working. All we heard from him was gibberish. On this mission, I was a Flight Examiner giving a flight check to one of the other navigators in the group. Consequently, I did some of the radio calls and logged down every radio call and time event on my navigator log. That's why I had a complete picture of all the events of that day.

The initial plan was for our SA-16 to drop out the paramedic and a two-man raft that already had a radio in it. Then the SA-16 was to land in the water and take the two men on board and then they would take off and be on their way back to Patrick. So the paramedic jumped into the water along with the larger raft. Next, we saw that the paramedic had gotten tangled in his chute when it hit the water.



Space capsule with collar and astronaut's rafts. Photo provided by Giles W. Willis, Jr.

Scott Carpenter then got out of his raft and went to help the paramedic get untangled. Then they both got into the two-man raft. This is a photo taken from our aircraft on the scene at that time. I remember the scene very well. The photo shows the capsule with the collar around it, Scott Carpenter's one-man raft, now empty, and Scott and the paramedic just getting into the two-man raft. Scott got on the new radio immediately, but it was as bad as the previous one. This is when we

dropped our 20-man raft. It had a radio and provisions, so now the two people in the water had a much bigger space. Scott again tried the radio and this time it worked. He wanted to know when we were going to get him out of the water!

We talked to Thinker One. We said we were ready to pick up Scott Carpenter and our paramedic immediately. Thinker One told us to stand by while they contacted the Navy, who was in charge of the recovery. After a few minutes, Thinker One called to say that a water landing by the SA-16 to pick up the astronaut was not approved, because the Navy chopper was on its way and would be there soon. All the time I am keeping a detailed record of what is going on with the calls and activity in my navigator's log. It is now about 2 p.m. and we are continuing to circle the capsule and the two people now in the 20-man raft below us in the water. No sign of the Navy chopper. Scott Carpenter could only talk to us on his radio. He kept calling us to ask when the *** are we going to pick him up. We again ask Thinker One if we can land and pick up the astronaut and our paramedic. Again and again the answer is no. Three o'clock comes and goes with no sign of any chopper or any word from the Navy. Certainly, the Navy is aware of where we are, I thought. They should be able to give us a precise ETA for their choppers, if they are able to read maps. Still, we heard nothing. Then another hour went by. A little after 4 p.m. Thinker One called and said that we were now cleared for a water landing.

Since 2 p.m., the wind had gotten stronger and the seas had gotten higher; nevertheless the SA-16 crew said the water and wind were satisfactory for a water recovery and they were ready to land and pick up the survivors. But Thinker One disagreed with the crew and said that the seas were too high and there was a chance that they could not land and take off safely. So now there was no alternate plan. We continued to circle and photograph the two people in the raft in the water as the sun began to set in the west. Scott Carpenter's attitude had gone from being annoyed to being really ticked off at the world. His attitude sitting in the water in the raft, had gotten much worse when we told him we did not have permission to land the SA-16.

All we could do now was wait for the Navy choppers and hope that there would be enough light that they could see how to recover the men in the raft. If Scott Carpenter had had to spend the night in that raft, he would really have been super angry. Then shortly before seven o'clock, the choppers arrived. That was about 6 hours after Scott Carpenter had splashed down in the ocean. They picked the men up from the raft and then took them away. By that time, it was very dark. We turned and headed back to Antigua to spend the night. But before we got started, Thinker One called and told us to come directly back to Patrick. Never mind

that it will be after midnight before we land. And so, we headed back up the island chain to Florida. Sure enough, it was about midnight when we landed at Patrick. We taxied to our parking spot and shut down the engines. When the crew door opened, the first person to come on board was our commander. There was Two Star General Leighton I. Davis, (Department of Defense representative for Project Mercury support) in my airplane and talking to me. He said, "Lieutenant, give me your logs, I'm on my way to the Pentagon."

This is the end of my story about Scott Carpenter's one and only space flight. My Form 5 showing logged flight time shows that Senior Navigator Giles W. Willis, Jr. had 8 hours, 30 minutes of day and 4 hours of night in a JC-54G, on 24 May 1962, which should verify the hours that I discussed above. Questions do remain. What ever happened to my navigator logs? What did General Davis do at the Pentagon? What did Scott Carpenter tell NASA they could do with Project Mercury?



The Quonset hut at Antigua. Photo provided by Giles W. Willis, Jr.

I WAS A CRAF NAVIGATOR – SAY WHAT!

by Jed Orme, Harlingen 60-14

My active-duty service assignment as a navigator was on C-118 aircraft operated by the then Military Air Transport Service (MATs), while stationed at Hickam AFB in Honolulu. However, we appropriately called it the "Midnight Air Transport Service" due to every departure in our mid-Pacific Ocean location occurring late at night as a result of all inbound aircraft having come during the day from either the mainland, or somewhere in Asia or the Far East. When my five-year service obligation ended at Hickam in 1964 I made a momentous decision to go back to finish college, and then maybe do some post graduate studies or even attend law school. Coming originally from the Bay Area in California, I resumed my college education at the University of California in Berkeley (or "Beserkeley," as my grandmother referred to it at the time).

This alone was about as far removed from my five years wearing a USAF uniform as one could have

imagined. But then I took things a step further into left field by finding out about and volunteering to enter into USAF reserve duty as a Civil Reserve Air Fleet (CRAF) navigator. This was not something I had ever known of before, or run across anywhere in my active-duty experience. All I knew was that these initials were a shorthand way of describing what was then known as the Civil Reserve Air Fleet, whatever that was.

A brief history of CRAF tells us that in 1952, after the Berlin Airlift experience, the needs for the commandeering of civilian aircraft for emergency service were put into a new organization called the Civil Reserve Air Fleet. This was done as a means to have a more orderly way of employing such civilian aircraft to meet emergency military airlift needs. Basically, the way that it worked, which I discovered later on when working in the US airline industry, was that the US air carriers would designate certain portions of their fleet as available to be called up for any national emergency; and in return they became eligible for US government contracts to provide US air carrier airlift as needed to supplement that of the USAF. The greater the commitment of aircraft to be made available for callup, the greater the number of qualifications that would be awarded to bid on military contracts.

Historically CRAF has been activated only three times: the first was to support Operation Desert Shield; the second was once as a part of Operation Iraqi Freedom; and then in 2021, it was activated as part of Operation Allies Refuge in Afghanistan. However, when I became involved with it, there was a concern that it might be needed to support the war in Vietnam. So, I entered training as a CRAF navigator at Hamilton AFB in Novato, CA (located in the Bay Area) in late 1964. This, I think, was one of the earliest efforts to create this cadre of reserve USAF officers who could, in the event of a national emergency, be called up as navigators to fly as crewmembers on civilian aircraft obtained from the US airlines who participated in the CRAF program.

At the time, the way this CRAF training operated was to get refresher ground school navigation training provided by instructor navigators who came down to Hamilton AFB from Travis AFB, about 30 or 40 miles distant. Then, the next phase would be to get flight training on twin engine C-47 aircraft (i.e., the venerable Douglas DC-3 "Gooney Bird"). This aircraft was, like the bird, clumsy and awkward looking on the ground, but graceful and elegant in flight. And I must admit I have no idea where they got either the pilots or aircraft for this aspect of the program, but assume they were assigned to Hamilton AFB for this purpose. But it was very much like going back to basic navigator training (at Harlingen AFB in my case) on the Convair T-29 airplanes, with training given by USAF instructor navs. We would head out to the Farallon Islands just outside the Golden Gate,

turn south for an overwater course down off the coast, then return back to the Farallons as our final waypoint and destination, landing back at Hamilton Field a short distance away. We would do this every other weekend during the year, with an added period of two weeks of active duty during the summer that involved both ground and flight training.

At this point, let me mention that I was in school at probably the most liberal, anti-Vietnam War campus in the entire US! And to make matters even worse, I was majoring in Political Science, where some of my classmates were the actual founders of what became known as the Free Speech Movement in opposition to the war. Just to attend classes, I had to thread my way through all of the demonstrations and gatherings of students in opposition to the war that occurred almost on a daily basis. And to make matters even worse, we lived about three blocks from the campus at a location that housed the Vietnam Day Committee headquarters right beside the house where we were renters. So, when it became time for me to attend either my weekend reservist training, or the two weeks of active duty, I would put on either my class B uniform or flight suit as appropriate, then turn my raincoat inside out and put it on to hide the bars on its shoulders as well as on my uniform, throw my flight cap behind on the rear seat of our 1964 Volvo, and head out of town, hoping not to be recognized or stopped. Much of this espionage-like behavior continued into the next phase of my CRAF training, which got transferred to Travis AFB when we were found to be qualified to fly with some of the MATS units located there.

At this point I think things must have been in a bit of flux, either at Scott AFB, Travis AFB, or wherever else where they were running this training program. During the summer of 1966, after getting my bachelor's degree from Cal Berkeley, I was waiting for classes to begin at the UC Davis law school where I had been accepted. So, we had moved from Berkeley to just outside Davis, but much closer to Travis than had been the case before. And, I expected some transition to becoming integrated into the training or operations of the different units flying MATS aircraft at Travis where I had just been assigned. However, what occurred (at least from my perspective) was a hit or miss operation of being directed to fly with the different C-124 squadrons that were still in operation out of Travis (back then these aircraft had much the same nav equipment we had in the C-47s, which provided a smoother transition to MATS operations). All of this took place during the entire summer before starting law school, providing a time when I could go on active duty all of that summer. But I never knew very much in advance which squadron I would fly with or often not even when. Quite frequently when C-124 flights would become delayed, cancelled or break down somewhere in the MATS route system, it would be up to me to get home by hitching rides on other MATS aircraft in this system.



The C-141B Starlifter Serial Number 63-8088, nicknamed "Golden Bear," was the first C-141 accepted at Travis Air Force Base, CA. Travis AFB Museum Photo.

Things settled down at about the same time law school studies commenced, and I got an assignment to a specific squadron at Travis. It turned out to be orders sending me to the 44th Military Airlift Squadron, to serve as a navigator on the brand-new Lockheed C-141 Starlifter jet transport aircraft. The 44th MAS had its origin on the east coast, was deactivated in 1955, but then re-activated in 1961 at Travis to fly the Boeing C-135 Stratolifter. They operated all over the world, but primarily in the Pacific (including airlifting Bob Hope for his 1963 Christmas Show in Vietnam). In April 1965, the 44th MAS was the first squadron to receive and fly an operational C-141 jet transport aircraft. This first aircraft is officially known as the Golden Bear, but was affectionately known as the Golden Hog; the plan was to fly it 22 hours per day to test its durability. Today the Golden Bear remains on static display at Travis AFB.

The 44th MAS was later joined by the 75th MAS and the 86th MAS in the operation of these new aircraft. Following my assignment to the 44th, much of the weekend reservist training was in the ground school for the transition to being a line-qualified nav in this C-141 aircraft. Eventually it resulted in time on training flights during my reserve weekends when the 44th began operating turn-around trips from Travis to Hickam. Needless to say, many in my law school class greatly envied my taking weekend trips twice monthly to Hawaii; but what they didn't factor into account, when thinking of me on the beach every other weekend, was that I had to add the C-141 ground and flight training on top of the law school studies then expected of me.

What evolved for the next three years, was that during the nine months of school, I would train two weekends each month as a reservist; but then during the three months of summer break from classes, I would go back on active duty and fly as a regular line navigator in the 44th MAS C-141 squadron to which I now had been assigned. During this period of time from 1966 until 1969, the primary mission of all C-141 squadrons at Travis was to support the war effort in Vietnam. The flights on which I was assigned went primarily either

to air bases at Saigon, Da Nang or Cam Ranh Bay in Vietnam; or some less frequently went to Clark AFB in the Philippines, to Kadena AFB in Okinawa or to Yokota Air Base outside Tokyo. During this period of time, I became a fully line-qualified navigator in the C-141, flew enough hours to earn Senior Navigator wings, and eventually became an Instructor Navigator myself for this C-141 aircraft in the 44th MAS.

I had what I thought was the very best summer job in the world, and thoroughly enjoyed my opportunity to serve as a crew member on this exceptional C-141 aircraft, which played such an important role in the USAF during this critical period of time. And I must admit that I have absolutely no knowledge of any CRAF navigators that might have been called up to fly as navigators on any US air carrier aircraft during these times when CRAF was actually activated. But I suspect that the more modern navigation aids in these civilian aircraft may have made us redundant. However, this is my story as a CRAF navigator, and I am sticking to it!

NOTAM: DR Ahead Distribution

AFNOA members who are current on dues should receive the e-mail copy of **DR Ahead** by the 7th of the published month (January, April, July or October) or the paper copy via USPS by the 25th of the published month. IF NOT RECEIVED, contact Jim Faulkner (jfaulkner39@suddenlink.net) or Errol Hoberman (afnoa.distributor@yahoo.com). Note that e-mail copies may sometimes go into the "spam" or "junk mail" folders so please check them before contacting AFNOA representatives.

NAVIGATING ACROSS THE ARCTIC

by Albert Powers, James Connally 64-10

In 1966 and 1967 I was a navigator assigned to the 4603rd Air Base Group, part of the ADC (Air Defense Command) at Stewart AFB, NY. Our mission was to fly personnel in and out of Distant Early Warning (DEW Line) radar sites strung across 3,000 miles of frozen tundra from Greenland to Alaska. The radars were intended to give us advance notice of possible Soviet bombers.

Aerial navigation across the Greenland icecap in the 1960s, across the barren wilds above the Arctic Circle in Canada and Alaska, was at times a kind of metaphor of life. There were occasions when I felt lost, when I had to rely solely on Dead Reckoning, the most basic form of navigation. There were no reliable navigation aids. All I had to work with were a shaky compass heading, an estimated distance, an airspeed, and a few weak NDBs that were ice-covered most of the year. There were no weather reporting stations. I had no way of knowing how the winds would affect our flight, whether they would speed us up or slow us down, whether they would cause us to drift off course. It may at first have brought about a twinge of panic but after I had worked through the difficulties a number of times there was little cause for alarm. We had four engines roaring on the old C-54, four propellers churning, and many hours of fuel. If we turned south, we would eventually end up somewhere in the United States, some place where there was a navigational aid or a radar contact. (If a Canadian fighter jet didn't intercept us first.)

Navigator Tales



Richard W. Ahrens and Susan M. Curran

NAVIGATOR TALES

by Richard W. Ahrens & Susan M. Curran

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Isn't that sometimes the way it is with life? We head off into the unknown, into another job, another adventure, another goal, with only a rough direction and an estimated time enroute, not knowing which way the winds of Fate will blow us?

Author's Note: I have fond memories of those days of somewhat primitive navigation. The work was challenging but enjoyable. I wrote about all of it in Volume 2 of *We Are Born, We Do the Best We Can, Then We Pass On*. The book was reviewed a few years ago in **DR Ahead** (Vol 39, Number 2; April 2023) and is still available on Amazon.



LETTERS

Email/To Editor *DR Ahead*, 21 April 2025

Here is a link to an interesting article in TWZ (The War Zone) entitled RC-135 Rivet Joint Spy Flights From Alaska To Grow Thanks To New Unit (type link: <https://www.twz.com/rc-135-rivet-joint-spy-flights-from-alaska-to-grow-thanks-to-new-unit>).

The RC aircraft has four CSOs; one Nav and three EWOs... the photo might be worthy of the front page as it is a very important USAF aircraft with many officers wearing "nav" wings on board.

Carl Misner, Former RC-135 Nav/USAF Colonel, retired

Editor's Note: We agree! Look for the photo of the new RC-135 Det on the front of this issue.

NOTAM: ELECTRONIC ROSTER

We no longer print and distribute an **AFNOA** roster. Electronic copies are available in Microsoft Excel. E-mail Jim Faulkner at jfaulkner39@suddenlink.net for a roster.

NOTAM: EMERGENCY LIST

One of our members has told us that if something should happen to him... he has left a listing of people to be contacted. Great planning! Suggest we all consider putting **AFNOA** on that listing.

LAST FLIGHTS

by Jim Faulkner, James Connally 64-04

Some of the people reporting more than five Last Flights this quarter were:

Jim Alexander, James Connally 65-18

Bob Certain, Mather 70-16

John Fradella, James Connally 66-17

Please advise **AFNOA** membership, Jim Faulkner 580-242-0526 or email (jfaulkner39@suddenlink.net) when a navigator/observer/bombardier/ EWO or combat system officer has made their last flight. Please keep their families in your prayers. Listed below are the last flights reported this quarter.

ELLINGTON

Palmer, Walter G.	Tulsa	OK	51-07
Eure, Robert O.	Kerrville	TX	54-00
Gotts, Edward E.	Madison	IN	54-06
Hartzler, Victor L.	Rogers	AR	54-06
Herce, Richard A.	Flushing	NY	54-06
Spohn, Gary E.	Coeur D'Alene	ID	54-06
Urban, John M.	Pottstown	PA	54-06
Walker, Joe E.	Lafayette	LA	54-11
Powell, Ronald I.	Summerville	SC	55-06
Scheid, Donald J.	Las Vegas	NV	56-06
Woolard, William H.	Saint Simons Island	GA	56-16
Stogsdill, Franklin L.	Louisville	KY	57-01
Williams, Roger H.	Kapolei	HI	57-11
Utecht, Ronald E.	San Antonio	TX	57-18

HARLINGEN

Kuehl, James W.	Fredericksburg	VA	53-12
Kunz, Julius M.	Centerville	OH	53-17
Cutter, Robert B.	Aurora	IL	53-19
Fujimoto, Gilbert T.	Huntington Beach	CA	53-19
Gallagher, Leon E.	Omaha	NE	53-19
Maher, Patrick J.	Milwaukee	WI	53-19
Allen, William E.	Petersburg	VA	54-01
Bagnani Jr., Valentino	Carmichael	CA	54-06
Clapp, Melvin L.	Sand Springs	OK	54-06
Conlan, Wesley D.	Moravia	IA	54-06
DeMarco, Louis G.	Hammonton	NJ	54-06
Gottesman, Karl	Chestertown	MD	54-06
Kirby, Frederick J.	Porter	TX	54-06
Larsen, Leighton G.	Phoenix	AZ	54-06
Miller, James R.	Austin	TX	54-06

Nedrow, Earl N.	Phoenix	AZ	54-06	Ley, Roger P.	Bossier City	LA	57-05
Udall, John J.	Nixa	MO	54-06	Clinger, Robert D.	Canal Winchester	OH	57-22
Allred Jr., Robert H.	Mansfield	LA	54-11	Phelps Jr., Harold A.	Auburn	ME	57-22
Goodreau, Richard J.	Essexville	MI	54-11	Tyburski, Charles J.	North Canton	OH	58-01
Mahey, John A.	Harrisburg	PA	54-11	Nordling, Eugene J.	Beaverton	OR	58-01C
Smith, Melden E.	Hyannis	MA	54-11	Schum, Richard F.	Dale	IN	58-01C
Allen, David F.	Moreno Valley	CA	54-13	Brown, Robert Berton	Cambridge	MA	58-01N
Robbins, Edward B.	Niceville	FL	55-11	Brown, Warren R.	Southampton	PA	58-01N
Yenter, William E.	Bothell	WA	55-11	Coats, George E.	Kill Devil Hills	NC	58-01N
Mason, Charles R.	Victoria	TX	56-15	Cvancara, Alan M.	Madison	AL	58-01N
Anderson, Karl G.	Castro Valley	CA	56-16	Danbury, Michael J.	Alexandria	VA	58-01N
Binford, Donald D.	St. Petersburg	FL	56-16	Dingman, Peter A.	Winfield	IL	58-01N
Croke, Paul F.	Annandale	VA	56-16	Eidson, Charles W.	Cullman	AL	58-01N
Ingwalson Jr., William A.	Wayzata	MN	56-16	Fisher, James L.	San Antonio	TX	58-01N
Larson, Robert H.	Silver Spring	MD	56-16	Frith II, Norman L. H.	Gates Mills	OH	58-01N
Clark Jr., Thomas S.	O'Fallon	IL	57-00	Goodwin Jr., Reginald S.	Meridian	ID	58-01N
Bourcier, Lucien E.	Great Falls	MT	57-02	Gullick, Thomas Ed.	Fontana	CA	58-01N
Canell, Gregory J.	New Hyde Park	NY	57-02	Helms, Howard E.	Cape Charles	VA	58-01N
East, Roger W.	Bonaire	GA	57-02	Henkin, Ernest	Manchester	MO	58-01N
Ferrell, Raymond L.	California	MD	57-02	Parker Jr., Joseph A.	Toms River	NJ	58-01N
Fiske, McNeil S.	Lake Forest	IL	57-02	Rich, Richard G.	Pataskala	OH	58-01N
Fitzgerald, Donald N.	Spokane Valley	WA	57-02	Robbins, Glen A.	Bullhead City	AZ	58-01N
Jowers, Harold R.	Pearland	TX	57-02	Rock, Stanley D.	Kennesaw	GA	58-01N
Kelley, Henry E.	Blytheville	AR	57-02	Sherrer, Charles E.	Loganville	GA	58-01N
Koon Jr., Bernard T.	Saint Louis	MO	57-02	Steele, John L.	Okaloosa	FL	58-01N
Laitman, Samuel H.	Boynton Beach	FL	57-02	Swenson Jr., Dale F.	Glen Ellyn	IL	58-01N
Laub, Dale J.	Mountain View	WY	57-02	Taylor, Henry Lee	Seymour	IL	58-01N
Laufenberg, Wayne E.	Eau Claire	WI	57-02	Thompson, Paul M.	Shreveport	LA	58-01N
Loomis, Stillman A.	New Canaan	CT	57-02	Lakutis, Melvin R.	Webster	MA	58-02
O'Connor, George P.	Great Falls	VA	57-02	Murphy, Phillip L.	Reno	NV	58-02
O'Day, William J.	Auburn	CA	57-02	Schnell, Charles R.	Papillion	NE	58-02
Rosenstein, Yale A.	Pittsburgh	PA	57-02	Wakeman, Edwin Burr	Palm Harbor	FL	58-02
Sci Jr., Frank M.	Beavercreek	OH	57-02	Apple, John B.	Memphis	TN	58-02N
Shepherd, Harry R.	Sun City	AZ	57-02	Arenas, Thomas J.	Arlington	TX	58-02N
Stevens, Tommy D.	Ocklawaha	FL	57-02	Bache, Ronald H.	St. Louis	MO	58-02N
Terry, Lee E.	Obetz	OH	57-02	Blaylock, Max W.	Santa Barbara	CA	58-02N
Titus, Clyde H.	Minneapolis	MN	57-02	Bline, Donald B.	Houston	TX	58-02N
Tsouros, Ernest J.	Concord	NH	57-02	Boudinot Jr., Donald J.	Lackland	FL	58-02N
Webster, George L.	El Dorado Hills	CA	57-02	Brubaker, Howard R.	Mount Pleasant	PA	58-02N
Wege, William F.	North Falmouth	MA	57-02	Buntschuh, Robert F.	Tempe	AZ	58-02N
Daniels, Lucius F.	Easton	MD	57-03	Cluff, Harold F.	Meridian	ID	58-02N
Anderson, Arthur D.	Georgetown	TX	57-04	Cochran, Robert W.	Glasgow	MT	58-02N
Michalski, Anthony F.	Tulsa	OK	57-04	Dermody, James M.	Pensacola	FL	58-02N

DR AHEAD PAGE 14

Eller, James M.	Melbourne	FL	58-02N	Valdez, Jesus S.	Tucson	AZ	58-07C
Fagan, Norvin W.	Baton Rouge	LA	58-02N	Welch, Robert E.	Midland	TX	58-07C
Fleckenstein, John C.	Atlanta	GA	58-02N	Welcome, William W.	Henderson	NV	58-07C
McCannon, Russell E.	Litchfield Park	AZ	58-02N	Wilson, Samuel W.	Lincoln	CA	58-07C
McCormac, Sam L.	Alameda	CA	58-02N	Woods, James C.	McComb	MS	58-07C
McPeck, William C.	Reelsville	IN	58-02N	Sawtell, Douglas I.	Winter Springs	FL	58-07N
Murtha, Thomas W.	Naples	FL	58-02N	Smith Jr., William W.	Bulverde	TX	58-13
Peck, David W.	Mesa	AZ	58-02N	Hetzel, Richard G.	San Antonio	TX	59-05
Raymond, Richard A.	Rocky Mount	MO	58-02N	Edens, Robert H.	Sanford	NC	59-06
Roche, James E.	Fairview Heights	IL	58-02N	Clark, Donald L.	Hillard	OH	59-07
Stirnitzke, Robert E.	Tucson	AZ	58-02N	Young, William M.	Union	KY	59-16
Turnage Jr., Baxter H.	Memphis	TN	58-02N	Dokken, Ronald D.	Endicott	NY	59-17
Weinrich, Louis E.	Garland	TX	58-02N	Hobby, Ross A.	Port Saint Lucie	FL	59-17
Wilkinson, Vance K.	Belton	TX	58-02N	Knight, Terry R.	Stockton	CA	59-17
Roddy, David J.	Flagstaff	AZ	58-05	Kurtz, Robert F.	Green Valley	AZ	59-17
Beglan, Joseph F.	Cockeysville	MD	58-07C	Plummer, Donald G.	Niceville	FL	59-17
Benedict, Ronald J.	Blacklick	OH	58-07C	Race, Bruce G.	San Diego	CA	59-17
Bowles, Neil H.	Oklahoma City	OK	58-07C	Woodlin, William L.	Dover	DE	59-17
Clark Jr., Thomas S.	O'Fallon	IL	58-07C	Erler, William F.	Aiea	HI	59-19
Dardine, John K.	Washington	DC	58-07C	Package, Thomas L.	Sterling	VA	59-19
Daugherty, James M.	Dallas	TX	58-07C	Seeley, John N.	San Antonio	TX	59-19
Davis, Norman E.	Big Bear Lake	CA	58-07C	Fetsko, Francis M.	Endicott	NY	59-21
Doherty Jr., Thomas G.	Suffield	CT	58-07C	Gresco, Alfred J.	Beavercreek	OH	59-21
Esty, Charles P.	Bristol	RI	58-07C	Hamman Jr., Harold E.	Tempe	AZ	59-21
Farnbauch, Thomas D.	Mansfield	OH	58-07C	Miller, David A.	Albuquerque	NM	59-21
Francisco, Lawrence R.	Bakersfield	CA	58-07C	Schlessner, Richard J.	Walterboro	SC	59-21
Ganeles, David P.	Boynton Beach	FL	58-07C	Shawl, Dean L.	Pompano Beach	FL	59-21
Gregory Jr., Leland H.	Antioch	TN	58-07C	Smythe, Ralph E.	Camden	AR	59-21
Hansen, Ernest L.	Boise	ID	58-07C	Stabler, Richard W.	Port Isabel	TX	59-21
Harrington, Neal J.	Azel	TX	58-07C	Alonso-Miller, William R.	Puerto Rico	PR	60-02
Hemsen, Richard F.	Bristol	CT	58-07C	Brown, James K.	Canton	GA	60-02
Hunter, George F.	Georgetown	TX	58-07C	Ehinger, Richard A.	East Aurora	NY	60-02
Hurst, Raymond	Lake Charles	LA	58-07C	Howell, Richard D.	De Funiak Springs	FL	60-02
Kostenbader, Kenneth F.	Montgomery	AL	58-07C	Rountree, Buck O.	San Antonio	TX	60-02
McCallister, Jerry K.	Henderson	NV	58-07C	Stingley, Ronald L.	Bowling Green	KY	60-02
McGovern, William F.	Guthrie	OK	58-07C	Kelley, Kenneth T.	Santa Ynez	CA	60-06
Ohsann, David E.	Freeport	FL	58-07C	Slader, Eric L.	Kingston	RI	60-06
Plant, Elbert W.	Springfield	OH	58-07C	Baer, Alan H.	Coral Gables	FL	60-07
Reed, Thomas B.	Sedalia	CO	58-07C	Baughman, Joel E.	Las Vegas	NV	60-07
Schneider, Raymond A.	Las Vegas	NV	58-07C	Carter, Grey L.	McLean	VA	60-07
Smith, John E.	Beach Park	IL	58-07C	Cary, Richard B.	Roseville	CA	60-07
Spencer, James E.	Ogden	UT	58-07C	Cornejo, Raymond	Lancaster	OH	60-07
Tolley, Charles P.	Fort Monroe	VA	58-07C	McAllister, Rodney H.	Houston	TX	60-07

McKee, Franklyn C.	Grand Island	NY	60-07	Milstead, William M.	Kernersville	NC	54-U
Ross, John R.	Washington	DC	60-07	Robinson, James M.	Denver	CO	54-U
Rynties Jr., Alphonse A.	Olympia	WA	60-08	Ruscher, William W.	Clearwater	FL	54-U
O'Hare, Donald R.	Riverside	CA	60-10	Sullivan, Wallace E.	Winnetka	CA	54-U
Olsen, William A.	Dayton	OH	60-10	Thompson, Bud J.	Marysville	KS	54-U
Gavan, Roger L.	Warwick	NY	60-13	Darden Jr., Henry R.	Brandon	FL	56-15
Starks, Billy D.	Las Vegas	NV	60-13	Argumedo, Bobby J.	Wichita	KS	58-07N
Haessler, James H.	Canyon Lake	TX	60-14	Bergh Jr., Palmer A.	Mountain Home	ID	58-07N
Remy, Daniel P. J.	Irvine	CA	60-14	Clark, Robert R.	Auburn	WA	58-07N
Smith, Wayne H.	Gulf Breeze	FL	60-16	Lembke, Raymond G.	Plains	MT	58-07N
Schuette, Charles E.	San Antonio	TX	60-18	Murray Jr., Thomas E.	Las Vegas	NV	58-07N
Baker, Ozrow E.	McKinney	TX	60-20	Robinson, William T.	Richmond	VA	58-07N
Georges, William	Long Island City	NY	60-22	Wilhelm, John D.	Omaha	NE	59-15
Stelmar, Thomas E	Rockwall	TX	60-22	Roberson, Charles D.	Pittsfield	MA	60-12
Wisner, Thomas D.	Granger	IN	61-05	Lara, Yamil H.	Menifee	CA	63-09
Hope, John L.	Winchester	VA	61-08	Putnam, Jerald L.	Griswold	IA	63-14
Johnson, Harold E.	Leesburg	FL	62-12	George, David I.	San Dimas	CA	63-18
JAMES CONNALLY				Ritchie, William J.	Glade Valley	NC	64-04
Allen, Thomas L.	Tampa	FL	52-07	Brown, James D.	Oklahoma City	OK	64-12
McDonald, Edson D.	Southfield	MI	52-07	Johnson, Kirby S.	Olathe	KS	64-12
Patterson, Charles W.	Yuma	AZ	52-07	Darnall, Charles T.	Eagle River	AK	64-15
Richards, Earl D.	Ocala	FL	52-07	McCubbin, Harold T.	Littleton	CO	64-15
Rosenthal, Aaron H.	New York	NY	52-07	Trojanowski, James C.	Bellevue	NE	64-15
Wallace, James W.	Houston	TX	52-07	Hurder, William A.	Brooksville	FL	64-19
Erum Jr., Theodorico	Kapaa	HI	54-06	Walgren, James C.	Woodland Hills	CA	64-19
Fuller, James R.	Temple Hills	MD	54-06	Enney Jr., Thomas J.	Universal City	TX	65-05
Hackett, Herbert C.	Wimberly	TX	54-06	Flint, William W.	Port Angeles	WA	65-05
Jones, Alphonso B.	Altadena	CA	54-06	Beck, Roger A.	Manchaca	TX	66-06
Lee, Herbert A.	Peoria	AZ	54-06	Scanlon Jr., John E.	Memphis	TN	66-06
Nied Jr., George A.	Honolulu	HI	54-06	Smith, James C.	Palmdale	CA	66-06
O'Connell, William T.	Colorado Springs	CO	54-06	Callaghan, Brian J.	Haymarket	VA	66-16
Rummans Jr., John A.	Austin	TX	54-06	MATHER			
Smith, Ronald J.	Hot Springs Village	AR	54-06	Burroughs, Paul N.	Green	IA	67-00
Swinney, James T.	Spokane Valley	WA	54-06	Tant, James R.	Raleigh	NC	67-12
Taylor, Charles D.	Williamsburg	VA	54-06	Anderson, Larry O.	Aurora	CO	74-00
Trexler, Richard C.	Yardley	PA	54-07	Hutchings, Thomas C.	Cheyenne	WY	80-13
Countryman, William E.	Las Vegas	NV	54-09	SCHOOL UNKNOWN			
Allen, Ralph J.	St. Cloud	MN	54-RI	Grey, James F.	Carmichel	CA	44-00
Cerqueira, Antonio S.	Jacksonville	MI	54-U	Colclazier, Robert D.	Sarasota	FL	54-00
Davis Jr., Melvin R.	Riverside	CA	54-U	Field, Edsel R.	Davidson	NC	56-05
Hinson, Ray M.	Pearl	MS	54-U	Gates, Thomas R.	Spokane	WA	60-00
Ingalsbe, Orville D.	Orlando	FL	54-U	*****			
Koehr, Jack L.	Sullivan	MO	54-U				

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