



UN-SCRAMBLE



The Official Newsletter of the Valiant Air Command, Inc.
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1st Quarter Review - January, February, March • 2023

Foggy Morning On The New Ramp



MUSEUM AND GIFT SHOP - OPEN 7 DAYS A WEEK - 9 AM TO 5 PM

Closed Thanksgiving, Christmas and New Year's Day

Adults \$22.00 - Senior 60+ or Military \$20.00 - Students 13 to 18 years old \$10.00

Children 5 to 12 years old \$5.00 - Children under 5 years old FREE - Special Group Tour Rates Available

Statement of Purpose

The Valiant Air Command Inc. was formed to perpetuate the history of aviation, to encourage gathering of men and women in camaraderie, research and Warbird restoration, to serve as an educational tool for young and old alike; and to assure that the memory of those who gave their lives in service to their country shall not perish.

501(c)(3) Non-Profit Organization Museum Recognized by the Internal Revenue Service

Future Events • April, May & June • 2023

Apr 8	Fly-In / Drive-In Breakfast, Museum, 8-10	June 6	D Day
Apr 8	VAC BOD Meeting, 12 Noon	June 10	Fly-In / Drive-In Breakfast, Museum, 8-10
Apr 15 - 16	Cocoa Beach Air Show	June 10	VAC BOD Meeting, 12 Noon
May 9	VAC BOD Meeting, Tuesday 12 Noon	June 14	Flag Day
May 13	Fly-In / Drive-In Breakfast, Museum, 8-10	June 18	Father's Day
May 14	Mother's Day	<i>Please check the VAC website or with the event for last minute changes before going!!!! (www.valiantaircommand.com)</i>	
May 20	STEM Cookout		
May 29	Memorial Day		



Commander's Report

Norm Daniels, Commander
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To our members, volunteers, and friends, the first quarter of this year has been very rewarding.

After 5-plus years, the restoration crew has completed the restoration of an F11F-1 Grumman Tiger. This aircraft will be housed and displayed at a new location in California (More information later in this issue).

Again, our efforts in marketing and advertising have helped generate increased visitation this period vs last year. Increasing visitors is critical to overcoming cost increases for services, materials, and rising insurance premiums.

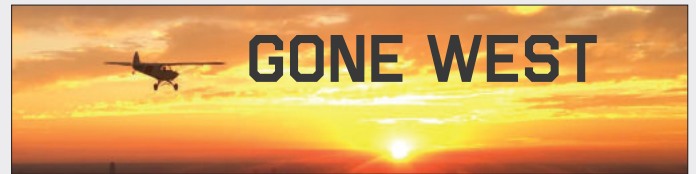
We have become a destination location for many events as our reputation for "fulfilling the client's needs" has grown.

The expansion plans for the new Event Center/Hangar are well underway with initial surveys, core drilling, and engineering plans. The City of Titusville Building (Planning) Department has approved our site plan with minor comments allowing us to further develop the Architectural and Engineering phases of this long awaited project. Subject to permitting issues, we expect to break ground this August.

All your directors have been extraordinarily busy with day-to-day business as visitor volumes have increased. The TICO Belle continues to perform her duties flying without any mechanical issues and has met all scheduled flight events.

Bob Boswell, Executive Officer, along with Jolene Clark and Avenue Event Group has increased our event bookings over last year's same time period and it looks like we will exceed last year's event schedule.

Tracy Bohrmann, Finance Officer, continues to watch and oversee all aspects of financial issues including tax preparations, accounts receivable/payable, audits, funds management, *Continued on pg 3*



Col. Edwin (Ed) Motyka (Ret.)

Col. (Ret) Edwin (Ed) Joseph Motyka, 82, passed away while travelling in Turkey on November 6, 2022.



Ed is survived by his wife of 56 years, Mei. He is also survived by his daughter Tamra Dale (William) from California and son Joseph Motyka (Kari) from Florida. He will be lovingly remembered and greatly missed by all.

Following retirement in 1992, he continued to work as a volunteer for the VFW, teaching the history of the country and military he revered. Ed was a Lifetime Member of the Valiant Air Command and was a Daedalian. You would always find him at the Air Shows manning the chair concession.

There was a full military regalia farewell service at the VFW Post 10210 (815 Louisiana Ave, Sebastian, Florida) on Saturday, November 26th at 1 pm. He will be interred at Arlington National Cemetery at a time to be determined. May he rest in peace.



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The Official Newsletter of the Valiant Air Command

1st Quarter - Jan, Feb & Mar • **Submission deadline - Mar 24th** NL Published - April 1st
 2nd Quarter - April, May & June • **Submission deadline - June 24th** NL Published - June 30th
 3rd Quarter - July, Aug & Sept • **Submission deadline - Sept 24th** NL Published - Sept 30th
 4th Quarter - Oct, Nov & Dec • **Submission deadline - Dec 22nd** NL Published - Dec 31st

Editor: Phyllis Lilienthal

Unscramble Crew: Louise Kleba and Lorraine Juhl

Photo Credits: Bob Boswell, Randy Black, Norm Daniels, Marvin Juhl, Lorraine Juhl, Phyllis Lilienthal, Hawk Moore and Larry Titchenal

Please note: Items submitted after the submission deadline will not be published or will be published the next quarter if applicable. The Editor reserves the right to not publish submitted items.

Commander's Report

Continued from pg 2

and bank reconciliations. As a result, we are in an enviable financial position.

Richard Jones, Personnel Officer, manages the flow of personnel information, reporting systems, tracking volunteer hours, safety, and security issues including volunteer scheduling and volunteer docent training. Louise Kleba, Recording Secretary, continues to support the Board and Richard Jones. Louise among other duties manages the FAST program for formation pilots both jet and piston aircraft.

Marvin Juhl, Procurement Officer, oversees projects in the Restoration Hangar as well as procurement solutions. The latest project completed is the F11F-1 Grumman Tiger. Projects underway are: C-337, F-104 Starfighter, and our UH-1Huey Helicopter. The next projects in line are the Fouga and Seabee.

Leigh Lewis, Flight Officer, has already mounted several revenue-producing events utilizing our C-47 TICO Belle with more events scheduled this year including an invitation from the Government of the Cayman Islands to return for an airshow appearance.

Christopher (Hawk) Moore, Facilities Officer, has taken on the daunting task of "corrective actions and improvements" necessary to keep our facilities up and operating including the movement of numerous aircraft allowing event clients to set up theme and otherwise decorate hangar space to suit their needs.

Terry Rush, Maintenance Officer, oversees the maintenance of our flying aircraft, the C-47 and C-45, to verify that we continue to meet all FAA requirements and to verify that logs books are up to date, as well as

being one of our pilots.

David Shores, Marketing Officer, has been aggressively marketing the VAC's amenities utilizing social media advertising that had an impact on visitation increases. David also worked up two substantial grant requests to be presented to the State of Florida for capital funding later this year.

Special thanks to Maureen Larney and the gift shop team in merchandising, increased product selection, and sales increases and to Phyllis Lilienthal for editing, formatting and creating the UnScramble.

Doug Matthews has submitted an article about the F-86 Super Saber. Doug is well known as a first-rate pilot and aircraft restorer. The F-86 he restored won the



Best Jet award at the Oshkosh Airshow. Doug is a long time member and a continuing supporter of the museum. For the next issue of the UnScramble, Doug is drafting an article about his experience as a pilot in the F-4 Phantom Aardvark Squadron.

Our STEM programs continue to be a rewarding and successful part of the Valiant Air Command offerings thanks to Kathy Lowes patience and resourcefulness. There is a waiting list of students applying to be included in the program.



Artist's rendition of the future Event Center



Executive Officer's Report

Bob Boswell, Executive Director
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As we start to exit from almost three years of the COVID pandemic, visitors have returned to our museum in record numbers. Not only through the front door where we have had days of over 200 visitors but also at our events. One fly-in / drive-in breakfast had over 300 attendees and a Flying Club lunch on Thursday drew over 65 aircraft and 161 members for a lunch. Many thanks to David Love Tower Chief and his controllers for their outstanding aircraft management of both arrivals and departures. Both very successful events were hosted by Jolene Clark and her Hoopla Helper Catering business. It is easy to see that the general population is ready to get out of the house.



Our volunteers are the backbone support of our museum, and we could not continue without them or our sustaining members. A subcommittee of our Board of Directors has been formed to develop recommendations on two areas of interest: Volunteers working hours to earn an annual membership and improved annual Membership Benefits including the number of guests visitors the members are allowed to bring to the museum. These recommendations will be provided to the April BOD for review. We welcome suggestions from our members on these two areas. You can email me at: bob.boswell@valiantaircommand.com, or call the museum: (321) 268-1941, direct ext. 4104 when the answering machine starts talking.

Our return to normal means the resumption of annual elections. You will be voting on candidates for Commander, Maintenance Officer, and Public Relations/Marketing Officer this year. We have excellent incumbent officers; however, we welcome

members in good standing to consider running for any of these positions.

Most importantly, volunteer and become an active supporter of our museum's activities, and events and contribute to the direction this museum takes as we continue to grow in the future. The 2nd phase of our museum expansion plan has been completed: the new South Ramp behind the Matthews Family Vietnam Memorial Hangar.



We are continuing to provide museum expansion talks to both private and public organizations to solicit needed funding to build a much-needed multi-use hangar/convention center next to the new South Ramp.

We have started working on the possibility of hosting a Space Coast Warbird AirShow at our home airfield, Space Coast Regional Airport, Saturday and Sunday, March 23 & 24, 2024. This two-day airshow will be structured like our old shows similar to our 2019 event. It will be entertainment for the whole family including a YMCA Kids Zone, a Carnival, Military Reenactors, Radio Controlled Flight Demonstrations, static displays, and multiple vendors with dry goods and food. Of course, we will have a very large and exciting series of aircraft demonstrations that will include modern front-line fighters, war birds of all kinds, aerobatic acts, and a surprise event that I cannot reveal at this time. Keep an eye on our website. There will be a VAC Members Hospitality Chalet on the show line along with a Beer Garden. We will be asking for volunteers to help with both the advanced planning and working the actual show. If you are interested in helping, reach out to me at the email address or phone number provided earlier in this article, or come by the museum on any Tuesday or Thursday to see me.



Finance Officer's Report

Tracy Bohrmann, Finance Director
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It has been an interesting couple of months in the financial world. I'm sure everyone is aware of the recent bank failures and the resulting uncertainty roiling the markets. Understanding the basic mechanics of how banking works can help everyone keep their money safe in an uncertain world. And while the following is not to be construed as financial advice, I do think it may be helpful to review the basics as well as some of the concerns impacting banking.

The business model of commercial banks is to take money in the form of deposits. They agree to pay you interest on this money deposited. Banks need to make money to pay the interest owed as well as pay their employees. Banks make money by lending money to people. These are mortgages, car loans, etc. The current regulatory environment for banks allows a fractional bank system, whereby they are only required by law to keep in reserve a small amount of capital to satisfy people wanting to make withdrawals in proportion to the amount of money they lend out. Of course, this means everyone who has made deposits to the bank cannot come at the same time and withdraw their money, there is simply not enough money available to do that. In usual circumstances, this doesn't happen where withdrawals come on the same day so a run on the bank was not very common. In addition, the FDIC will guarantee each depositor will not lose their money in the case of a bank run, as long as it's less than \$250,000. Great for those of us with less than that in the bank. However, depositors that have a much larger amount of money could lose any money over this amount.

A key difference in the modern finance environment is the speed of information transmitting to people coupled with frictionless banking features. Social media allows a once localized pool of information to now be disseminated across a large group of people almost instantly. Rumors can start with one or two people can get to the other side of the world very quickly. This tends to make groups that have a large amount of money at risk want to protect their money before everyone hears the information and acts first. They withdraw their money, which other people hear about, and that spurs further withdrawals from the same bank. Very quickly the on-hand cash reserves

are depleted and the bank fails to meet its obligations.

In addition, the speed of banking and ease of banking makes it much easier to precipitate a run. For example, in the movie *It's a Wonderful Life*, you see a line of people waiting outside the bank. Now, all many people need to do is hop on their phones and use mobile banking to transfer money easily to another bank. If you believe the bank is at risk, you can withdraw a large amount of money in minutes and transfer it to another bank. This is what is meant by frictionless banking and contributes to overall banking system volatility.

As of this writing, \$500 billion has been withdrawn from small banks in the two weeks since Silicon Valley Bank failed. These are smaller regional banks that are not considered too big to fail. While the FED has agreed to cover all depositors to the original failed bank, this situation does not apply to other bank failures. Indeed, the government may only guarantee deposits if the bank failure represents a systemic risk to the financial system. It's a toss-up on a case-by-case basis if amounts over the FDIC insurance limit will be covered.

Norm and I have worked to address and mitigate the risk to the Valiant Air Command by making sure the deposits owned by the business entity are in diverse banks with reduced exposure to regional-level banking. While I might be more comfortable with investing in financial products with higher yields than a savings or checking account on my personal behalf, I am extremely risk-averse to money owned by the VAC. I believe that shielding the resources from banking volatility is the best course of action at the moment.

On the good news front, the VAC has seen a huge rise in visitors over the first quarter of 2023. Local hotels are booked almost to capacity and local businesses are all seeing an uptick in revenues. After the last couple of years of low visitor volume, as well as being closed and then only partially open, it has been fabulous to have the museum open 7 days a week and busy most days. Event bookings have been increasing over the past year which hopefully will form a customer base for the future. The C47 has been doing quite a bit of flying and she is now able to cover most of her expenses allowing her to do more flying and be seen by a greater number of people. We are in the planning a designing phase of the new event center and we can't wait for construction to begin.



Facilities Officer's Report

Hawk Moore, Facilities Director
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The Facilities team continues to stay extremely busy with supporting event setup, aircraft movements out of the hangars and on the tarmacs, event tear down, aircraft movement back into the hangars, facilities infrastructure work, and support to other VAC teams.

Tom Etter, David Shores, Terry Nies, Roger Tonovitz, Joel McGinley, Jim Bowers, Larry Dickinson, Charlie Meyer, Charlie Hammer, Greg Goetz, Curt Reus, Rob Shaw, Bob Walter, Peter Massaras, Jim Grammatico, and Kari Bartz provided outstanding support to the team over the past quarter, although it's hard to say whether Charlie Meyer is still on the Facilities team with how much support he's provided to the Operations Team (see photo where it's not clear whether Charlie's taking a nap or vacuuming under the floor of Tico Belle). Large events included the January, February, and March



VAC Fly-In/Drive-In Breakfasts, two Corn hole Tournaments, the Sierra Space Corporation hosted Inflatable Habitat Unit & Lunar Vehicle setup (see photo), Space Coast Porsche 356 Club, the 16th Armored Division Reenactment Group, the Titusville Rotary Jaz N Space fund raiser, Lockheed-Martin two-day meeting visit, the Old Farts Flying Club Fly-in and Lunch (65 aircraft and 161 visitors, along with 200 other regular museum visitors), and the National Modern commercial film shoot. The use of the new tarmac on the south side of the Vietnam Hangar has given us much needed flexibility on moving aircraft out of the hangars while still being able to conduct flying operations with the C-47, B-25, fly-in breakfast and lunch visitors, events, etc. Justin Hopman of the Airport Authority continues to be very open to allowing us to make use of the new tarmac through close coordination with him.



The team worked in concert with RJ Jones, Marvin Juhl, and ADS representatives to get our Main Hangar burglar alarm system updated with a new main Honeywell panel and four new wireless sensors. The system now covers the entrances/exits that had been inoperable since before the hurricane leaks over the electrical/fire/burglar alarm panel in the northeast corner of the hangar.

Justin Hopman provided a copy of the roof insurance estimate from Engle Martin. Norm Daniels and Hawk discussed, at length, a few days later. Since roofing companies are still charging higher prices and materials are still hard to come by following the hurricanes, we are waiting until April or May 2023 time frame to look at replacing the roof on the Main Hangar while gathering estimates. We currently have two estimates to recover the roof with metal or TPO (Thermoplastic Polyolefin) roofs. We will get updated quotes from multiple companies before deciding on how to proceed. Another aspect to fixing the roof entails having a steel company check the red iron truss and purling infrastructure to ensure it is sound before completing the roof. The roof replacement needs to be completed before the next hurricane season starting on 1 June 2023.

We have a new guy with a lot of facilities experience on the team. Bob Walter is a retired Army Combat Engineer and who recently oversaw the maintenance of over forty (40) elder care facilities. He and Hawk have discussed how to replace the rotten wooden frames around all the windows (1st floor and 2nd floor) in the front of the museum. Many of the leaks we've had in the library have been caused by the rotten wood frames and dried out caulking. Bob will also work with Roger Tonovitz to replace toilets and vanities in several bathrooms. The Resto Team cut the requisite aluminum panels to cover the rusty areas on the PX fire/emergency door. Bob prepared and riveted the panels to the door. He still plans to grind down the edges and Bondo the panels before painting the doors red and installing a "Do Not Block, Emergency Exit" sign to the door. We lubricated the hinges on the door, so it is swings much easier than before.

Terry Nies and Charlie Meyer dismantled, replaced the tire, and remounted the port tire of the F-104 with the assistance of other team members. With the help of John Makinson, we found a local Dominion Metal Recycling Center in Cocoa (John knew of a sister center in Deland, FL) to recycle and get

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Facilities Officer's Report

Continued from pg 6

paid for the corroded F-11F-1 wings. Rob Shaw and Hawk took the wings to the recycling center. The team moved the F-86 into the Restoration Hangar so the new owners' restoration team could disassemble it and ship it to CA. Tom Etter and Rob Shaw replaced the HVAC filters in all units. Jim Grammatico recently provided me a diagram of all the HVAC locations, thermostats, etc. Joel McGinley continues to work his magic with all of the VAC vehicles with the able assistance of Jim Bowers and other team members when needed. Jim welded up a stand that Charlie Hammer has been using on the F-104. Tom, Rob and Hawk trimmed up four of the palmetto trees in front of the museum and placed the fronds/seed branches in the swale along the outside fence behind the Restoration Hangar. Joel and Jim worked some minor leaks on the man-lift by re-working some of the hose connections and cleaned and re-greased the boom. Joel and Jim returned the Entwistle tug to operation with periodic assistance from other team members. They fixed a minor fuel leak and isolated the rear-wheel hydraulics and installed brackets to the rear axle. The Entwistle tug now has two-wheel (front) steering, not four-wheel steering. Larry Dickinson's C-123 tug that is periodically used by the Airport Authority was brought into the Motor Pool for TLC. Joel worked on the battery and checked the brakes. Jim Bowers removed the gear shift, welded in a new metal piece into the worn groove and then re-cut the correct size groove back into the shift bar to take out the sloppy shifting movements. Joel brought over the Big Bertha tug in front of Motor Pool. The brakes aren't functioning. Joel will check it out and advise if it is a bad master cylinder or what. Joel continues to move chargers around to different aircraft, the man-lift, crane, 7K forklift, etc. He advised us that he will more than likely need to replace more batteries in some of the equipment (several were bought on 23 March). Roger Tonovitz swapped out all the non-working metal-halide fixtures in the Vietnam Hangar and replaced the non-working metal halide bulb overlooking the south tarmac. The cornhole tournament people were extremely happy with the added lights for their tournaments. Roger also installed a timer at the Vietnam Hangar electrical panel that controls the LED lights outside of the man-cave and STEM areas on the east side of the hangar as well as the two metal halide lights on the south side of the hangar overlooking the

new south tarmac that were previously on 24-hours a day. Tom Etter, Joel McGinley, and Hawk used a golf cart to exercise the canopy of the F-105 and ensure the weather stripping seals the canopy from leaks. Jim Bowers has measured and come up with designs to clamp the main gear and nose gear of the A-7A and F-8K. He thought he had pipe to cut and fashion two halves for each cylinder, but the walls were not thick enough. More to follow.

During the setup of the Sierra Space Inflatable Habitat, one of the trailers ran over our Stop Sign on Tico Road. The team shored up the Stop Sign and reinforced the mailbox.

The team moved the Lockheed F-104 from the Restoration Hangar for the Lockheed Martin meeting and then back to Resto, the week after the meeting.

The team supported the necessary electric preparation for the new HVAC system. It involved the removal of our antiquated 7.5-ton HVAC system, and the installation of two new 4-ton HVAC systems by Jim Grammatico and Kari Bartz.

The team safely moved the XP-82 to the Vietnam hangar, pulled the B-25, H-19, S-51, Dr.1, Me-208, H-19, F-14, F-106 simulator, and S-2 simulator forward to make room for the man-lift borrowed from Mark Adema. This allowed full access to the back of the Main Hangar to run the necessary electrical line and conduit from the electrical panel in the NW corner of the hangar to the middle of the back of the hangar. Curt Reus and Larry Dickinson assisted Chris Cook Electric with the movement of the man-lift and keeping the surrounding aircraft safe. They both did an outstanding job to help ensure the electrical changes were completed before Jim and Kari arrived from Michigan to complete the old HVAC removal and new system installation. Roger Tonovitz and Bob Walter did the lion's share of work to assist with the removal of the old system and running of an additional high and low side copper refrigerant lines between the inside units and outside condenser. Roger completed the necessary hole drilling in the wall next to the inside air handlers and outside condenser units to handle the additional set of copper lines. Jim and Kari expertly completed the successful removal, installation, setup, and testing of the new systems. In concept, the new twin systems should save VAC electrical costs since only one 4-ton system will run most of the time. The second system will only kick on when there's a 4-degree differential with cooling or heating. *Continued on pg 8*

Facilities Officer's Report

Continued from pg 7

The crane has been down for over a month. Joel McGinley and Jim Bowers continue to troubleshoot. They fixed the solenoid connection, but when they fired up the crane, it sprung a hydraulic leak. They are concerned that with only roughly 20% of the lines being replaced in recent years, there could be a more catastrophic failure in the future. Joel and Jim continue to troubleshoot the brake issues with the "gray-beast" tug between the Main Hangar and Motor Pool.

The team of Terry Nies, Rob Shaw, Curt Reus, Roger Tonovitz, and Hawk removed and cleaned up the wiring and connectors under the S-2 simulator per the request of Commander Norm Daniels. This was a monumental task, removing roughly 400 lbs of copper wiring and connectors from the simulator. Joel McGinley, Tom Etter, David Shores and Hawk removed 60 lbs of connectors from the wiring to maximize the amount of money received for recycling the metals. Jim Grammatico, Kari Bartz, Roger Tonovitz, David Shores, and Hawk segregated the metals from the old Main Hangar HVAC to maximize the amount of money received for the metals. Rob Shaw, Curt Reus and Hawk took two loads of metal to Dominion Metals. The loads brought \$925 revenue back to the museum.

Curt Reus provided weekend event support to several events along with other VAC volunteers to ensure safe vehicle movement/parking.

Hawk Moore met with three employees from Midwest Roofing to work to secure a third estimate to replace the Main Hangar roof. Hawk took them up on the roof using the man-lift and spent nearly an hour with them on the roof as they measured and assessed the roof. We hope to have a third estimate before the April BOD meeting. Midwest Roofing will propose a TPO (Thermoplastic Polyolefin) roof. Hawk is also working to secure a fourth estimate for the roof.

Hawk met with representatives from Cooter's Transport and Towing and Sims Crane and Equipment to assess preparations to allow the movement of the Space Perspective Capsule from the other side of the airport, down the taxiway, and exit through our North Gate via a lowboy trailer within the next two months. The oak tree over the North exit driveway will need to be trimmed and the Mig-21 may need to be moved (we need to replace the tires to allow this movement and subsequent movement to the Restoration Hangar for restoration) to allow the capsule and trailer to safely

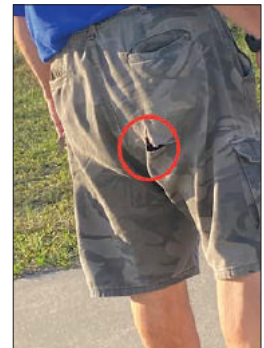
exit through our North driveway. Cooter's will contract to have FPL/another contractor temporarily lift the museum electrical hookup to the Main Hangar across the driveway. It is roughly 4 inches too short to allow the capsule to safely pass underneath the museum electrical wires.

Curt Reus and Hawk repaired the B-52 cooling exhaust line. Metal tape and duct tape was used to successfully re-attach the ducting and insulation to the exhaust port to the outside of the B-52. The system is cooling again as the weather gets warmer.

Rob Shaw, Curt Reus and Hawk were called over to support the Commemorative Air Force mission on 11 March. We used a tug to take our nitrogen cart down the taxiway and across the runway to fill the nose and left main wheels (see photo) on the B-24A Diamond Lil. We had a great time supporting one of only two flying B-24s in the world.



Joel McGinley, Curt Reus and Hawk installed a rotating trailer jack-stand to the blue utility trailer to make it much easier to use. Curt Reus and Hawk removed the brackets from the utility trailer that bit Curt in the butt (see photo) while we completed the procedure. Curt Reus and Hawk bought and installed fire extinguishers onto the three VAC golf carts for additional ramp and hangar safety. Jim Bowers and Joel McGinley fixed the C-123 stand with the welder.



Joel McGinley is spearheading the proper disposal of Ni-Cd battery cells that were pulled from the Restoration Hangar and other areas. The process of taping and storing the approximately 900 pounds of battery cells is extremely labor intensive. Charlie Meyer and Peter Massaras have been doing the bulk of the work to box them up. Tom Etter and Hawk were able to procure a full pallet of water for the museum from Wally World (no small feat in recent months) on 23 March. Tom Etter, David Shores, and Hawk completed a tough job of cleaning out the hangar door tracks on the south side of the Main Hangar. Hawk has been able to secure one quote to have the crumbling concrete replaced between the hangar tracks of the Main Hangar with an epoxy-based concrete. More to follow in the future.

The F-11F-1, restored by the *Continued on pg 9*

Facilities Officer's Report

Continued from pg 8

phenomenal Restoration Team was moved to the Vietnam Hangar on 21 March 2023 by a combined Restoration and Facilities Team (see photo):

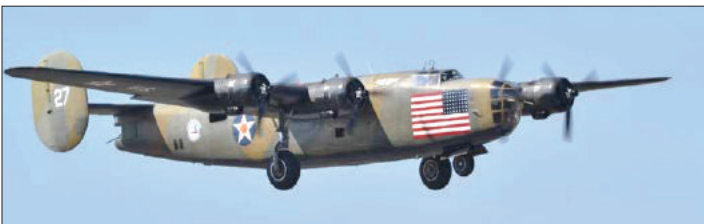
I'm sure I've missed a ton of little things the Facilities



Team does day in and day out to keep the VAC running as smoothly as possible. I appreciate everything they do behind the scenes!

Some of my favorite photos and a video (see link below) from the CAF and Old Farts Flying Club visit and to our airport on 16 March.

COPY & PASTE (<https://www.dropbox.com/s/oscnwq-i6zpdw8p/Video%20Mar%2009%202023%2C%2011%2007%2002.mov?dl=0>)



CAF B-24A Diamond Lil Space Coast Regional Airport flyover



CAF B-24A Diamond Lil taxiing in front of VAC



1946 Fairchild 24W-46 as part of Old Farts Club Fly-in



1944 Grumman G-44 Widgeon as part of Old Farts Club Fly-in



CAF P-51D Gunfighter (courtesy of Rob Shaw)



1943 Howard Aircraft DGA (Damn Good Aircraft)-15 as part of Old Farts Club Fly-in



P R Officer's Report

David Shores, Public Relations Director
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We have had 141 visitors at the museum who purchased tickets on TUI's website in Europe.

We have made over \$26,000 from Groupon. Press releases and ads on Facebook and TGIF in Florida Today have increased attendance at our Fly-in /Drive-in breakfast.

We have a new letterhead which can be made for any board member.

I met with Rita Pritchard last week and brought her up to date with happenings at the museum.

Our fly-in/drive-in breakfast has been mentioned in Florida Today in TGIF.

Our ad appeared on the front cover of Space

Coast Fun Guide and the museum was described inside.

The rendering of our new activity center/hangar (below) was sent to Senator Tom Wright, Representative Chase Tramont, Troy Post NBRDZ, and Rita Pritchard, County Commissioner.



Curator's Corner

By Jem Golden

The Curator team has been kept busy this quarter. We received numerous donations including a World War II Sherman Tank Factory diorama. We know just the place for it!! Stop by and see it. Additionally, we re-arranged the main lobby to accommodate a new flight simulator and relocated a mannequin that is now near the Link Trainer. The Thames River gun emplacement from the main display room has been moved to the Main Hangar. We added artwork to the Main Lobby, rest rooms, and Vietnam hangar that add some interest to all those areas. Preparing the F-11F-1 Tiger for display, the Curator staff provided the Restoration crew with a mannequin that will be installed as the aircraft pilot.

In the Vietnam Hangar, the POW display in the Memorabilia Room now contains artefacts for Navy and Air Force personnel with write-ups and histories that add some dimension to the display. We've also set up a flight deck crew mannequin to give visitors a sense for how our flight crews were often dressed for action. In the hangar itself, we've made progress on the MASH display by adding two display cases containing materials and artifacts.

Generally, we continue to improve on various displays in the Main Memorabilia Room after installing mannequins at the SBD Dauntless, the Army staff car, and the L-5 Stinson in the Main Hangar.

The work continues!

Heavy metal in the air 3-11-2023



VAC Guests at the Fly-in/Drive-in Breakfast enjoyed the Commemorative Air Force visit to the Jet Center. The B-24 Liberator, T-6 Texan, and P-51 Mustang were selling rides and did many takeoffs and landings.



Procurement Officer's Report

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I'm sure most of us at one time or another have thought "it's impossible to repair or fix something that looks so hopeless". Perhaps an old piece of furniture, an old beat-up automobile, or an old unrepairable aircraft. Unrepairable aircraft? Unrepairable aircraft! I'm sure most aviation buffs have heard of Glacier Girl, a Lockheed P-38 Lightning that was restored to flying condition after being buried beneath Greenland ice for over 50 years. How about the XP-82 Twin Mustang (on display at VAC) with more than a decade of restoration labor under Tom Reilly and his restoration team, that has become the only airworthy Twin Mustang? Then there's the Stinson L-5 (also on display at VAC) that was completely restored, including replacing ninety percent of all the wood structure. It too was brought back to life, to standard airworthiness. All three appeared at the start to be a hopeless case and, yet there you have it. F11F-1F Super Tiger is another such case that all volunteers in restoration, when it first arrived by flatbed, believed this one is surely a basket case that's completely hopeless. Surely there's no way that this can ever be repaired or put back together to look anything like an F-11F-1. This one is going to take a medical transplant in many areas. Corrosion at a point where skin and parts in many areas were falling off. The wings, left and right, were cut off with a torch, outboard about three feet from the wing roots.



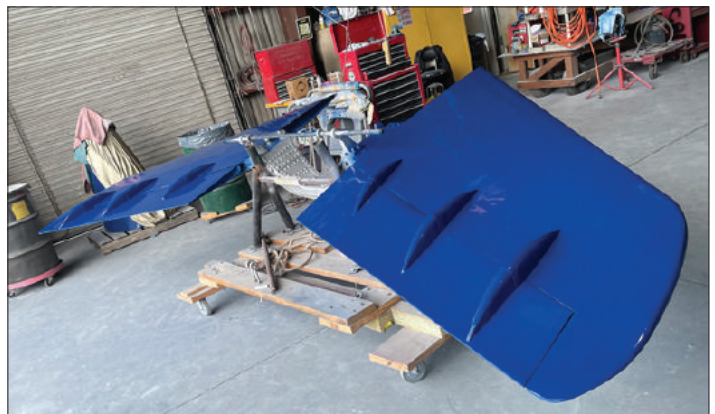
Cockpit • before



Cockpit • after



Horizontal Stabilizer • before



Horizontal Stabilizer • after

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Most of the right horizontal stabilizer was missing. Tailhook and mechanical accessories beyond repair. Many access panels were corroded beyond repair. The cockpit canopy and instruments were corroded, the list can go on and on. Now let us look at the before and after repair pictures.

Procurement Officer's Report

Continued from pg 11



Tail section • before



Tail section • after



Finished and ready to be picked up

The end result, like the three aircraft above, is what determination, perseverance, dedication, and the love of preservation of warbird aircraft can do to make a difference in getting to a satisfactory completion that all can be proud of. (Please read the article "Samuel Oschin Air and Space Center" written by Dennis Jenkins in this quarter of UnScramble.)

A special thanks to Larry Mathis and Tom Wilke for the superb painting of the aircraft, and special thanks to Pete Jolly, Pete Massaras, and John Makinson for solving so many problems in restoring the F11F-1. And thanks to all our volunteers, many who deserve a Purple Heart for their cuts and bruises in the performance of their duty, for a job that appears at first to never end, now they see the fruits of their hard labor. A big THANK YOU to (I'm sure I'm going to miss some names), Bouck-Jim, Bettencourt-Phil, Brinckerhoff-Jim, Dickinson-Larry, Dilts-Chuck, Dykes-Roger, Filippi-Bob, Graefe-George, Hamilton-Bob, Hammer-Charlie, Reus-Joe, Smart-Dave, Weller-Jim, Werglikowski-Dave, Westman-Bob, White-Eli, and many others who jumped in to help on special occasions when extra manpower was needed.

An other item of great interest our museum has put together is a flight simulator, not a game but a flight training simulator that one can do simulation flights over the Space Center or perhaps Orlando International Airport with an instructor.



This was instigated by Melvin Juhl and Jim Grammatico when they came across an old helicopter simulator that had laid way back in the hangar collecting dust for many years. By obtaining the right software and computer hardware, the necessary monitors and electronic instrument gages, they assembled a very extensive and impressive simulator that the museum can use to help bring in additional *Continued on pg 13*

Procurement Officer's Report

Continued from pg 12

revenue. Putting it together wasn't as easy a task as one would think. It took additional expertise and manpower with electronic background knowledge to set up the simulator station correctly. Special thank you goes to Mel and Jim who instigated this project and also many thanks to Lewis DePaemelaere, Ken Pagurek, Pete Massaras, Larry Mathis, Tom Wilke, Jim Brinckerhoff, plus those I've forgotten, that helped in getting it to a completion stage. Commencement on training multiple instructors is ongoing and twenty-five percent of the needed instructors have completed training with great success. We have already started to see revenue and on one occasion we had eager customers waiting in line for their turn. VAC sees a quick return on its investment.

Phantom Airborne Brigade

The Fly-in/Drive-in Breakfast guests this February 11, 2023, got to see Phantom Airborne Brigade parachute jumpers get ready to go up in a perfectly good airplane with the plan to jump out of it. They say it is fun.



Getting briefed pre-jump



Getting on "TICO" and ready for the jump

Our F-86 Sabre is leaving

The F-86 Sabre (Skyblazer) will have a new home in Chino, California sadly leaving in mid-February. The firm that purchased the F-86 from the owner will completely update the aircraft's systems, refurbish, and repaint the aircraft. The F-86 Sabre fighter interceptor has been a visitor's favorite display for over a decade. We hope to replace this F-86 with another soon. The Sabre was heavily involved in the Korean War.



Loaded on a trailer for its trip to Chino, CA

Our restoration guys are the best

The photo shows a corroded piece of support hardware from the left side landing gear door of the Fairchild C-123 Warbird and its replacement.



Parts are no longer available for the C-123, so they need to be made. Larry Knoch researched, purchased and donated a piece of aluminum extrusion close to the original. To make the piece fit, Rob Underwood milled the extrusion to factory specifications and Larry Dickinson will drill mounting holes and install. The right side landing gear door shows no signs of corrosion.

Samuel Oschin Air and Space Center at the California Science Center

by Dennis R. Jenkins, FRAeS, Project Director

The Restoration Shop at the Valiant Air Command has recently completed an extensive restoration (really, reconstruction) of a Grumman F11F-1 Tiger (BuNo 138608) for the California Science Center Foundation.



This was an early (delivered as an F9F-9) short-nose airplane that was converted into one of the long-nose prototypes. The airplane was delivered on 28 February 1955 and retired on 30 November 1959 with only 299 flight hours on the airframe. It became a gate guard at NAS Jacksonville and then was displayed on a pole at the Admiral Farragut Academy in St Petersburg for 30 years. Since it spent most of its life in Blue Angel markings (despite never have been assigned to the team), the National Naval Aviation Museum requested it be repainted as an exhibition airplane. This seems like a good time to describe the Tiger's future home.

The California Science Center is located in Exposition Park, near Downtown Los Angeles. Prior to 1996 it was known as the California Museum of Science and Industry. The mission of the California Science Center is to stimulate curiosity and inspire science learning in everyone by creating fun, memorable experiences. The latest expansion is the Samuel Oschin Air and Space Center, the permanent home for space shuttle Endeavour – one of only three remaining space shuttles and the only one of these national treasures on the west coast of the United States. Exhibits on space exploration have the power to awaken innate curiosity and wonder in everyone and inspire people to learn about science and engineering. Alongside Endeavour, the Samuel Oschin Air and Space Center will feature 150 new hands-on exhibits that allow guests to explore the science, technology, engineering, and mathematics (STEM) involved in aeronautics and space exploration. It is important to note that the Science Center is not

a museum, per se, and uses artifacts as a means to explain science and engineering principles rather than as stand-alone displays.

Integrating a diverse collection of aircraft and spacecraft, immersive experiences and the California Science Center's signature hands-on, educational exhibits, the Samuel Oschin Air and Space Center will present a dynamic and fun learning experience for people of all ages. It will include three multi-level galleries – Air, Space and Shuttle – while spanning four floors and covering more than 100,000 square feet of exhibit space.

Air Gallery explores how the pursuit to master the sky involves tradeoffs among four forces of flight – lift, thrust, drag and weight – that affect every aircraft ever flown, whether it flies high, low, fast or slow. The Air Gallery will have three primary thematic areas: Taking Wing, At Home in the Sky and Pushing the Limits and will include approximately 20 aircraft on display. From a replica of the Wright Brothers' 1902 Glider, to the forward 50 feet of a Korean Air 747, the gallery will show the evolution of flight design through science and engineering concepts. Significant aircraft that will be displayed include the Grumman F11F-1 Tiger, North American F-100D Super Sabre, Convair F-106A Delta Dart, British Aerospace T.4 Harrier, de Havilland DH-115 Vampire, Republic RC-3 Seabee, Douglas DC-3, Bell 47G, and an S1C Pitts Special.

Space Gallery examines how the machines we build to explore space extend our reach and help transform our ideas about the universe, whether it's with powerful telescopes that look at distant stars and galaxies, robots that go places and collect data, or spaceships designed to transport humans and protect them from lethal environments. The Space Gallery's three primary thematic areas include Lift-Off, Robotic Spacecraft and Telescopes and Humans in Space. The collection includes examples of spacecraft from every stage of the U.S. manned space program including Mercury MR-2, Gemini 11, Apollo-Soyuz Command Module (ASTP), and SpaceX Dragon space capsules, along with an array of engineering models of planetary probes, telescopes and Earth observation spacecraft.

Shuttle Gallery will reveal how the world's first reusable spacecraft has helped us learn to live *Continued on pg 15*

Samuel Oschin Air and Space Center

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and work in low Earth orbit and prepare for bolder and more distant missions. The California Science Center will be the only place in the world to see a complete space shuttle stack with a flown orbiter, Endeavour, mated to real solid rocket boosters and ET-94, the last remaining flight-qualified external tank. In addition to preserving an important part of space exploration history, guests will have an unparalleled educational experience as they view this national treasure up close from multiple angles and elevations. To keep the building less than 200 feet tall (so as to not overwhelm other museums in Exposition Park), the Shuttle

Gallery's floor is 25 feet below grade. The Endeavour stack will be protected from earthquakes by a system that includes six seismic isolators supporting an 1,800-ton concrete pad that supports the stack.

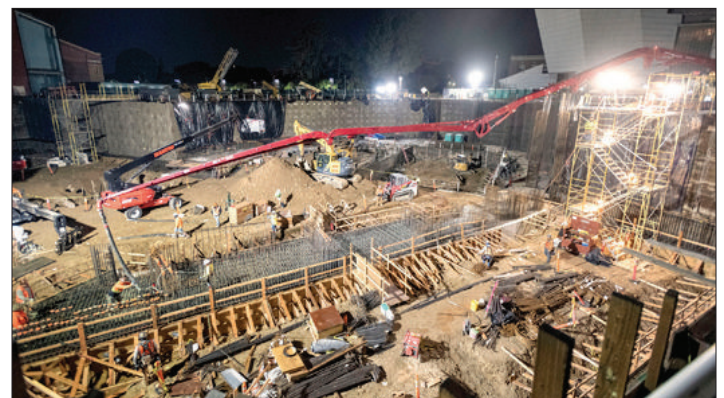
Construction began in April 2022 and is about 30 percent complete. So far, we have installed almost 4 million pounds of rebar and poured about 4,000 cubic yards (16 million pounds) of concrete. We intend to stack Endeavour in the new building late this year, then build a protective enclosure around the vehicle so that the contractor can finish the building. At the present time, we anticipate completion in the summer of 2025 with a grand opening sometime after that as the exhibits are finished.



The white circle is where the restored F-11 will be hung from the ceiling



Samuel Oschin Air and Space Center



Shuttle Gallery's floor will be 25 feet below grade

Flying The F-86

By Doug Matthews

Over 7,800 F-86 Sabre jets were made between 1949 and 1956 in the U.S., Japan, and Italy. Canada and Australia built an additional 1927 of the popular airplane for a total of almost 10,000 Sabres. The F-86 was operated by the U.S. Air Force and Navy as well as many foreign allies (as late as 1994!). It was the first supersonic-capable jet (1947). Its typical weapons were six .50 caliber machine guns although later versions had cannons and missiles. 90 survive today, 9 of which are flying; Built by North American Aviation, the first model was delivered to the USAF in 1948. The engine is a General Electric J-47.

As America's first swept-wing fighter, the F-86 Sabre was very successful in the Korean war against the MiG 15 and ultimately achieved a 10 to 1 kill ratio. However, in the early days of the war, things were different. The U.S. pilots had not fought the MiG 15 and tactics were evolving. At the outbreak of the war, our primary fighter was the F-80 "Shooting Star", a 1944 design. The F-80 scored kills but was no match for the MiG 15. As F-86s started to arrive, things improved but it was soon clear that "their swept wing fighter" was in many ways as good as or better than "our swept wing fighter"!

A first impression look at the MiG 15 gives a knowledgeable viewer distinct opinions. It looks stubby and has a big, fat-planform wing. It has a jet engine derived from a gift of ten original engines from Rolls Royce. The U.S. developed the same engine for U.S. Navy fighters like the F-9. It has cannon as armament. Put these initial factors together and you get a very fast jet with a service ceiling higher than an F-86, an aircraft with a good climb and turn rate, and an impressive weapons platform. Add to this that the pilots flying the MiG were not just North Koreans, but Chinese and Russians as well!

The first model-the F-86A-was a great step forward from the F-80, but it still did not have the design attributes needed to overcome all the MiG advantages. As feedback was provided to North American and the USAF, the design evolved eventually into the F-86F, which could include a wing shape modification, leading edge slats, and a better version of the General Electric J-47 engine (-27). These improvements, coupled with the U.S. pilot's training and discipline, lead to an

impressive score of victories.

Over the years, I have had the opportunity to fly two of the Canadian F-86 versions (Mk 5 and 6). Now, more than sixty years after Korea, I recently renewed my acquaintance with this magnificent bird. With my 20-year hiatus from the F-86 and with flying so many other fighters during the interim, I felt like I was starting over again. After lots of studying and on first-flight day, I go through another detailed pre-flight with my maintenance technician. Prior to mount up, important things to remember are:

1. There is only one engine;
2. The cockpit layout is not, how shall we say, "ergonomically balanced". As with 1940's vintage aircraft, the instruments have a poor location. Flying in solid IMC weather will require a third eyeball. And prayer. Switches and lights are seemingly placed randomly throughout the compact cockpit;
3. Flight controls are hydraulically boosted, either by the engine pump or an Emergency pump. Without hydraulics from one of those sources-the aircraft is uncontrollable, necessitating an immediate "evacuation". The ejection seat is of the first series (ballistic), which is Latin for either "makes men shorter" or "bad back waiting".
4. There is only one engine;
5. The leading edge slats are aerodynamic/mechanical. This means that they extend and retract as they sense the angle of attack. Hopefully, they will do so at the same time;
6. There are NO position indicators for the flaps, slats, trims, or speed brakes;
7. As an early (axial-flow) jet engine, fuel control is very basic. Therefore starting the engine is a tedious business, requiring careful orchestration of the throttle and EGT;
8. Avionics in this F-86 is "authentic" (mostly 1950's vintage), with the cockpit having very little room for a 6'2" pilot, much less one looking for a place to mount an iPad;
9. Internal fuel is way less than I would like, even for a "fam hop". An average flight (takeoff, climb to FL350, cruise for an hour, and land, yields an average fuel flow of 300 gph. But on takeoff, the fuel flow is closer to 800 gph. My flight will be a takeoff, climb to 10,000 for air-work (slow flight and stall series), then descend for three landing circuits. There is no chart to plan this sort of flight so I do some estimates based on the T-33/F-80 I have been flying. Full

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Flying The F-86

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internal is around 2800 pounds of Jet A and I should taxi in with 1000 pounds. There are two long runways and the weather meets my personal minimums for such flights-CAVU.

As I entered the cockpit, I remembered how cramped it was, especially for a tall pilot. There was also that familiar musty smell that seems to lurk in all old military cockpits. Strapping in was difficult due to tight quarters, even though the crew chief helped. I looked over the instrument panel in denial-gosh it was "authentic" (a/k/a antiquated).

After the start, I ran through an extensive "ballet" of after-start system checks with my ground support crew. These checks verify the pitch-trim setting for takeoff (remember-no indicators, just a light) and adjustability, flight controls, backup flight control systems, etc. of course, the whole time I am sitting there doing these checks with the engine running, I was constantly thinking "fuel burn"! I taxied out with little power and was immediately reminded of the poor nose-wheel steering system. Taxi and Before Takeoff checks were completed and I took the runway for the "Line Up" items. I told the tower that I needed a few minutes on the runway and I did my Emergency Fuel Control check...twice! I powered up and started the roll briskly. Accelerating to rotation speed, I pulled back the appropriate amount. The bird hesitated, then lifted off nicely. Accelerating quickly to 180 kts., I retracted the landing gear and flaps.

I cleared the airport area and climbed up for the air work. I was reminded of what a sweet plane it is. I was at 250 kts. before I knew it, the plane is so aerodynamically clean (even with drop tanks). The throttle needed to be retarded to half! Air-work went well and I was reminded of the tremendous flight control response. The roll rate is awesome! I included some work with the speed brakes and changed the configuration several times. Once again comfortable, I returned for the airport work. I entered the pattern from a 360 overhead at 200 kts., the airport speed limit! Out went the speed brakes, then the landing gear and full flaps. As the plane approaches 160 kts., I was ready for pattern work. As clean and light as the plane was, it was a challenge to slow to the target 120 kts. on short final. By the fourth landing, I was crossing the numbers just above 100 kts., my short runway target speed. But

I had this feeling of sitting too low in the cockpit and my forward vision was limited on landings. The seat is not adjustable in height once you are seated, so I would need to find the right spot for future flights.

On flight #2, I will work on my air show aerobatic routine and simulated engine-out profiles. We will also run some tests and calculations on taking off with half flaps. It is very unusual to make a full-flap takeoff in a jet so we will see how it goes in a series of half-flap launches and re-plot our takeoff charts. Later, maybe I will re-create a Korean war "return to base with critical fuel" profile like they did "back in the day"-climb to 35,000+ feet, SHUT OFF a perfectly good engine, glide all the way to home base, then light her up for the landing! Then again, maybe I'll just pretend and say I did it!

I think about employing the machine in wartime-Korea, and against the MiG 15 (12,000+ having been made). My pluses-I can out-accelerate them, I have a reliable and advanced machine, plus a Lead-Computing gun-sight, I have six .50 cal. machine guns, I'm trained well, and we have great flight discipline. We learn the MiG's advantages and employ our tactics accordingly. The negatives-at the start of a fight, we both drop our drop tanks. Our wing loading is similar, but he has a much better thrust to weight. So he may be able to outclimb me (rate-wise). The MiG can out-turn me, it has a 5000' service ceiling advantage (50,000') and likes to come down at us screaming fast! He has a CANNON to shoot at me! We have to go 250+ miles to battle, he fights over home turf.

Given the choice of aircraft, I still take the F-86F. It is in 1952, a sleek, modern war machine, a state-of-the-art weapons system. The MiG on the other hand seems bulky, unattractive, out of balance esthetically, roughly manufactured, frailly-powered, and, well..... Russian! But be sure-the MiG 15 is no slouch and if flown by a real fighter pilot is a formidable adversary. It is a great performer and I will take extreme satisfaction in everyone I shoot down!



Our F-104 all most ready for static display



January Fly-in/Drive-in was well attended despite cold



Photo opportunity of the servers before the crowds came. It was a very cold morning by Florida standards, but a nice crowd came to enjoy breakfast. Note the good looking heaters in the white circles.



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