



# CONTRAILS



Volume 10 Issue 3

*“Information for and about Volunteers”*

Fall 2007

## FROM THE EXECUTIVE DIRECTOR

*Daniel J. Ryan*

Now that the “Spirit of Freedom Hangar” is completed and the capital campaign is coming close to completion, you may ask, “what’s next”? Well, first and foremost, we all know that we need to improve our food service operation at the Pima Air & Space Museum. While the staff of Thunderbird’s Grill does an outstanding job with the tools and facilities that they have to work with, we are currently “under serving” our visitors.



The preliminary plan is to locate a full service restaurant in the area where the tram ramada was previously located in the area where hangar #1 connects to the “Spirit of Freedom Hangar”. We are in the planning stages and the first phase of design. We have established a total footprint for the facility at 3,500 square feet. We intend to offer two food service options, a quick-serve area, and a full service dining area. The preliminary cost for this project is estimated at approximately \$850,000. This amount does not include kitchen equipment, or furniture, fixtures, and equipment. We anticipate the total projects to be in the \$1.2 - \$1.4 million range. Beyond this, we have a wish list of projects for the Pima Air & Space Museum the scope of which will be determined in large part by what we are approved for in the next Pima County Bond election.

At the Titan Missile Museum we need parking lot improvements, exterior lighting, and repaving of the access road. We also plan to construct a multi-purpose building that can be used as an auditorium, theater, and public meeting space. The Board of Trustees has formed a new Master Planning sub-committee. This group recently held a kickoff meeting and will resume meetings in September to continue mapping the future growth of the organization.

We will keep you posted as we learn more about the future development of the Foundation. Thanks for all that you do and I’ll see you on the grounds!

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## TMM DIRECTOR'S CORNER

By Yvonne Morris



Greetings from Down Under—down under at the Titan Missile Museum, that is.

### NEW VOLUNTEERS AT TITAN

We are very fortunate to have a large Docent training class right now. Please join me in welcoming Maggie Austin, Sam Densler, John McGee, Kitty Sprout, Herb Wolfe, Jerry Zimmerman, Jim Reynolds, Jeff Maurone and Hayward Sumner to the Titan volunteer corps. Kitty is a new Education Docent, and everyone else is training to be a Tour Docent. On behalf of everyone at Titan, welcome! Also, we have a new record for most distance traveled to volunteer at the Titan Missile Museum. Jeff Maurone commutes from Seattle, Washington. Now that's dedication!

### NEWLY MINTED DOCENTS AT TITAN

Congratulations to Jerry Zimmerman. He recently completed Docent certification training and received his yellow slip. Well done!

### TMM VOLUNTEERS OF THE MONTH

**June 2007: Steve Pagel**

**July 2007: Dave Runt**

**August 2007: Bob Darcangelo**

Congratulations to each of you, and thanks for your great work on behalf of the museum and the Foundation.

### MILESTONES

George Birch	2000 Hours
Ken Crombie	500 Hours
Bob Flemming	750 Hours
Carl Immel	7000 Hours
Larry Kistler	4000 Hours
Bill Luikart	250 Hours
Steve Pagel	2000 Hours

Jane Smith	2000 Hours
Steve Taylor	250 Hours
Calvin Tidwell	1500 Hours
Lathan Varnado	750 Hours
Brenda Visotski	1000 Hours
Brad White	3000 Hours

**Congratulations to all of you, and thanks!**

### VISITORS FOR MAY-JULY 2007

May 2007: 3477 (+3% over last year)  
 June 2007: 3096 (+10% over last year)  
 July 2007: 3383 (+4% over last year)  
 Total Visitors Year to Date: 43,662  
 (+2,945 visitors over last year to date)

### TMM ON THE HISTORY CHANNEL

The Titan Missile Museum was featured in two shows on the History Channel in early August. The first feature was on a show called *Mega Movers* in an episode entitled *Army Mega Moves*. It included a 15-minute piece on moving Titan II ICBMs. Titan volunteer and museum founder, Hugh Matheson, was the on-screen expert, and he did a great job.

The second feature was on the series *Lost Worlds*, in an episode entitled *Secret A-Bomb Factories*. The on-screen experts for this feature were Chuck Penson and Yvonne Morris.

This is great exposure for the museum. Copies of these shows will be available for you to view at the museum. Thanks to Dwight Mears, we already have a copy of the *Mega Movers* show. A copy of the *Lost Worlds* show should be available by the end of the month.

### SPECIAL EVENTS

#### **Summer Survivors Picnic**

The Summer Survivors Picnic was a big success, even though the monsoon did its best to dampen our spirits. Approximately 20 folks from Titan braved the storm to attend the picnic, and all of us were really glad that we did. The food was provided by "Port-A-Pit,"

and it was fantastic. Brook did a great job organizing the picnic, as usual, and she also made sure that I brought dessert back to the museum for all the Titan volunteers. Thanks to Brook and to all the Foundation staff who assisted with this great picnic. Also, I'd like to thank Titan volunteer Marge Humphrey for taking pictures of the event for us.



### **Moonlight MADness**

As many of you know, the museum is experimenting with staying open late one Saturday night each month during the summer. We're calling these events "Moonlight MADness." The first two Moonlight MADness events in June and July were very successful. Thirty-eight people came to the June event, and for 36 of them, it was their first time at Titan. We doubled our numbers for the July event, with 86 people. The majority of these visitors were also experiencing Titan for the first time. We conducted a survey, and most of the visitors found out about the events on the internet and through the calendar sections of the Tucson and Sahuarita newspapers. No one admitted to seeing the paid ads that we ran for the June event in the Sahuarita Sun and the eastside editions of the Tucson newspapers.

The majority of the visitors for the June event were from Tucson or further away. Fifty percent of the visitors for the July event were from Sahuarita and came because of the kid's events with our MAD Scientists.

All of the visitors have been very enthusiastic about the events, and so far, they're making money for the museum. All of the Docents who've been working these events also say they've really enjoyed it. These are very

important observations to note. If the public continues to respond well, and if the volunteers can continue to support a nighttime event like this one, we may look at making some version of this event a permanent offering at the museum.

The last two Moonlight MADness events will be August 25 and September 29. The September event should be particularly exciting, as it will be tied together with a promotion that gives free admission to Sahuarita residents. Many of you have signed up to work these events, and we hope to see you there. As always, I'm very grateful for your support.

### **Town of Sahuarita Promotion**

As many of you know, every year on the last Saturday in September, the Town of Sahuarita celebrates the anniversary of its incorporation with a big party for its residents called Fiesta Sahuarita. This year, in conjunction with the Town of Sahuarita and Fiesta Sahuarita, the museum is going to help Sahuarita residents celebrate by admitting residents of Sahuarita to the museum free of charge for the 13 days leading up to Fiesta Sahuarita. In return for letting Sahuarita residents in for free, the Town is giving the museum a \$5,000 grant to market the promotion. To market the promotion, we're sending a direct mail piece to every resident of Sahuarita, and running a coupon ad in the Sahuarita Sun. Sahuarita residents will have to bring the mailer or the coupon with them, and two adults and up to six kids will be admitted free. Reservations will be required, and we'll limit each tour to ten or twelve free Sahuarita residents so that we won't be overwhelmed. September is traditionally our slowest month, so we're confident that we can handle the additional influx of visitors without a problem.

This special promotion will run from September 17 through September 29, including the Moonlight MADness event for September. This is our chance to really catch the attention of Sahuarita residents, and that's the reason we're taking this opportunity to work with the Town on this promotion.

## **ON THE HORIZON**

### **Changes in Operating Hours**

At the July meeting of the volunteers, we discussed some of the needs of the museum, including the continuing need to expand our tours and programming. One need that we have is to be able to accommodate more visitors in the busy season. Therefore, beginning this year, from November 1 through the end of April, the museum will stay open until 5:30 pm every day and we will add a 4:30 pm tour. This means that for those months, the morning shift will give the 12:30 tour, and the afternoon shift will start giving tours at 1pm so that each shift has the same number of tours. Feel free to come and talk to me about this if you have questions.

### **New Brochures**

The design process for the new Titan Missile Museum brochure is complete and we should receive the new brochures within the next 30 days. The front of the brochure will look exactly like the new rack cards which are already being distributed.

### **W-53 Warhead Casing**

Thanks to efforts by Scott Marchand and his staff, Titan is in line to receive a W-53 warhead casing from the National Atomic Museum. This will be a remarkable acquisition for the museum if the request is approved. If all goes according to plan, the casing should arrive sometime in the late fall or early winter.

## **SPECIAL ATOMIC BOMBING EXHIBIT FOR THE MONTH OF AUGUST**

July and August mark somber anniversaries in the atomic history of the United States. In the last issue of Contrails, I provided you with some information on the July anniversary of the first atomic test at the Trinity site in New Mexico. August marks the 62<sup>nd</sup> anniversary of the two atomic bombings of Japan to end WWII. The museum has a temporary exhibit on the atomic bombings of Japan which will be on display for

the month of August and the first two weeks of September. It is located in the case where the Trinitite was on display in July. Please take a look at this exhibit the next time you're at the museum. In the meantime, here is some information that you may find useful when answering questions from our visitors.

At approximately 2:00 a.m. on August 6, 1945, a modified American B-29 Superfortress bomber named the *Enola Gay* left the island of Tinian for Hiroshima, Japan. This mission was piloted by Colonel Paul Tibbets, commanding officer of the 509th Composite Group, who named the bomber after his mother. The four-engine plane was carrying the uranium 235 gun-type atomic bomb named *Little Boy*. Measuring over 10 feet long and almost 30 inches across, it weighed close to 5 tons and had the explosive force of 20,000 tons of TNT.

A T-shaped bridge at the junction of the Honkawa and Motoyasu rivers near downtown Hiroshima was the target. At approximately 8:15 a.m., Little Boy exploded, instantly killing 80,000 to 140,000 people and seriously injuring 100,000 more. The bomb exploded approximately 1,900 feet above the center of the city. Crewmembers of the *Enola Gay* saw a column of smoke rising fast and intense fires springing up. The burst temperature was estimated to reach over a million degrees Celsius, which ignited the surrounding air, forming a fireball some 840 feet in diameter. In less than one second, the fireball had expanded to 900 feet. The blast wave shattered windows for a distance of ten miles and was felt as far away as 37 miles. Over two-thirds of Hiroshima's buildings were demolished. The hundreds of fires, ignited by the thermal pulse, combined to produce a firestorm that incinerated everything within about 4.4 miles of ground zero.

Three days later, another American B-29 bomber, *Bock's Car*, left Tinian carrying *Fat Man*, a plutonium implosion-type bomb. Originally scheduled for August 11, 1945, the mission was advanced to August 9 due to weather concerns. Major Charles W. Sweeny was in command of the

mission. With the primary target, Kokura Arsenal, unavailable because of weather, the secondary target, the Mitsubishi Torpedo Plant at Nagasaki, was chosen. Clouds covered Nagasaki when Bock's Car arrived. But at the last minute, a small window in the clouds opened and bombardier Captain Kermit K. Beehan made the drop at 10:58 A.M. Nagasaki time.

The bomb exploded at 11:02 a.m. over the narrow Urakami Valley northwest of downtown Nagasaki. *Fat Man* exploded at 1,840 feet above Nagasaki and approximately 500 feet south of the Mitsubishi Steel and Armament Works with an estimated force of 22,000 tons of TNT. Unlike Hiroshima, there was no firestorm at Nagasaki. Despite this, the blast was more destructive to the immediate area, due to the topography and the greater power of *Fat Man*. However, the hilly topography limited the total area of destruction to less than that of Hiroshima, and the resulting loss of life was also less. Of the 286,000 people living in Nagasaki at the time of the blast, 74,000 people were killed and another 75,000 sustained severe injuries.

Japan announced its intention to surrender on August 15, 1945. To this day, the United States remains the only country in the world to use atomic bombs in time of war.

### **VOLUNTEER MEETING**

The next Volunteer Meeting at Titan will be September 11, 2007, at 0800 hours in the classroom. There will be door prizes, as usual, and we will also begin planning the 2007 Holiday party. So you don't want to miss this meeting!!!

### **THANK YOU!**

**I want to thank all of the volunteers at Titan for working as hard as you do. I'm grateful to all of you for your dedication and professionalism. But most of all, thanks for keeping it fun!**

## **PASM COORDINATOR'S CORNER**

*By Brook Sklenar*



### **SUMMER SURVIVORS PICNIC**

It was a frightful afternoon – with the cracking of thunder, lots of lightning, flooding, power outages, and muddy grounds, however, we were somehow able to still pull off the annual Summer Survivors Picnic. Mostly due to the efforts of our Operations (Reed, Gilberto, Janet, and Juan) and Events staff (Janet, Patti, Doug, and Phil), but most importantly the staff of Port-A-Pit Catering. We would also like to thank our special guests for attending Col. Michael W. Spencer and Col. Ronald K. Laughbaum. And of course it wouldn't have been a picnic if our volunteers from TMM and PASM had not braved the chaotic weather and attended. We thank all of you who attended and hope you had a great time!



### **ANONYMOUS DONOR FUND CALL FOR DONATIONS**

From the desk of our liaison of the Anonymous Donor Volunteer Fund, we are quickly running out of money from this fund. If you would like to donate or know of someone who would like to donate to a worthwhile cause please let Brook, or Cynthia know. This fund has provided for the Summer Survivors Picnic, assisted with the funding for the Volunteer Field Trips, provided the awards for our presenters at the Volunteer Presentation Series, assisted with coffee supplies in the Blue Trailer, and much more. We would like to continue with these programs and events, so if you could assist in anyway please contact Brook or Cynthia.

## **PRESIDENTS VOLUNTEER SERVICE AWARDS**

In his 2002 State of the Union address, President George W. Bush issued a challenge to all Americans to make time to help their neighbors, communities, and Nation through service. He called on each person to dedicate at least 4,000 hours – or two years – to service over the course of their lives. He created the USA Freedom Corps to help all Americans answer his call to service and help foster a culture of service, citizenship, and responsibility.

In 2003, President Bush created the President's Council on Service and Civic Participation to find ways to recognize the valuable contributions volunteers are making in our Nation. The Council brings together leaders from the worlds of business, entertainment, sports, education, government, nonprofits, and the media.

The President's Council on Service and Civic Participation created the President's Volunteer Service Award program as a way to thank and honor Americans who, by their demonstrated commitment and example, inspire others to engage in volunteer service.

Recognizing and honoring volunteers sets a standard for service to others. It encourages a sustained commitment to civic participation and inspires others to make volunteering a central part of their lives. The President's Volunteer Service Award recognizes individuals, families, and groups that have achieved a certain standard – measured by the number of hours served over a 12-month period or cumulative hours earned over the course of a lifetime.

### **Award recipients receive:**

- An official President's Volunteer Service Award pin.
- A personalized certificate of achievement.
- A note of congratulations from the

President of the United States.

- A letter from the President's Council on Service and Civic Participation.

### **Award Criteria:**

The AAF will award any individual the Gold Level award for 500 volunteer hours earned over a 12-month period (January 2007 – December 2007). These awards will be presented at the Annual Volunteer Appreciation Dinner to volunteers from PASM and TMM.

## **VOLUNTEER PRESENTATIONS**

**The series schedule is as follows:**

**September 15<sup>th</sup> – Col. Ronald K. Laughbaum  
“Modified A-10C”**

**October 20<sup>th</sup> - Andrew Boehly  
“Duxford – Imperial War Museum”**

**November 17<sup>th</sup> - Bob Dundas  
“The F-105 in Vietnam”**

**December 15<sup>th</sup> - Glen Chapman  
“The U-2 and Its Spy Days”**

Please contact Brook Sklenar at 618-4819 if you are in need of more information. And if you would like to do a presentation or know of someone who could give a presentation in 2008 we are currently looking for speakers.

## **VOLUNTEERS OF THE MONTH**

**June – Keith Connolly**

**July – Clarissa & Jim Stone**

**August – Don Campbell**

## **NEW VOLUNTEERS**

**Jay Bond, Marian Walsh, Bob Walsh, Vern Spohn, Mike Berk, Ebony Christian, Mary Herod, Gene Anderson**

**MILESTONES**

**250 Hours**

Pat Johnson, John Eichelberg, John Truesdale,  
John Miller, Clarence Ebert, Dale Trudo,  
Gary Gardner, Rex Eaton

**500 Hours**

Paul Kuras, Chuck Wacker, Dave Menser

**750 Hours**

Harvey Diesner, Dave Jester, Mike Bokor,  
Bill Stickel, George Nicholls

**1,000 Hours**

Chuck Mitchell, John Sprenkle,  
Frank Aman, Ken Moyes

**1,500 Hours**

Jim Walech, Dee Brunner, Steve Brown

**2,000 Hours**

Martin Keimon, Tom Wiley, Charles Hubbard

**3,000 Hours**

Earl Larsen, Midge Bevilacqua

**5,000 Hours**

Chris Lefteroff

**6,000 Hours**

Dick Lockhart

**12,000 Hours**

Bill McGuire

**13,000 Hours**

Virgil Falkner

**Dual Hours:**

Ken Crombie – 497  
Rex Eaton – 1,204.5  
Ralph Hoemke – 5,982.5  
Bill Luikart - 469.5  
Wes Whitman – 1,892

**VISITOR NUMBERS**

**117,788 (January—July)**

**A 2% decrease compared to last year.**

**3,821,923 (1976—July 2007)**

**NEED FOR DONATIONS**

- Golf Cart for (8-10 people)
- Carpeting or Tile for the Blue Trailer
- Gutters for the Blue Trailer

**PASM CALENDAR**

- 9/3 Labor Day  
(Museums Open, but No AMARC)
- 9/8 New Volunteer Orientation  
(9:00 a.m., Stitt Auditorium)
- 9/12 Volunteer All Hands Mtg.  
(10:00 a.m., Stitt Auditorium)
- 9/13 Rosh Hashanah
- 9/15 Volunteer Presentation Series  
(10:00 a.m., Stitt Auditorium)
- 9/22 Yom Kippur
- 10/8 Columbus Day (no AMARG)
- 10/13 New Volunteer Orientation  
(9:00 a.m., Stitt Auditorium)
- 10/20 Volunteer Presentation Series  
(10:00 a.m., Stitt Auditorium)
- 10/31 Halloween
- 11/10 New Volunteer Orientation  
(9:00 a.m., Stitt Auditorium)
- 11/11 Veterans Day (no AMARG)
- 11/14 Volunteer All Hands Mtg.  
(10:00 a.m., Stitt Auditorium)
- 11/17 Volunteer Presentation Series  
(10:00 a.m., Stitt Auditorium)
- 11/22 Thanksgiving Day

**DID YOU KNOW THAT:**

**Lee Vensel is a Greeter on Fridays?**

**Bill McGuire says that Captain Vensel  
does an EXCELLENT job!!!**

## Space Gallery Report

By Earl Larsen

### Follow the Water

Greetings again from your Space Gallery. As you may recall from my last article, I gave you an overview of the scheduled August 4<sup>th</sup> launch of the Phoenix Mars Lander Spacecraft, the objectives of the mission, and other exhibits which complement the Phoenix Mars Mission. The Delta II rocket launched exactly on time in the predawn hours, thus beginning its 295 day cruise to the Martian North Polar Region for entry and descent to the surface of the planet. One of the complementary exhibits in our gallery which I have chosen to expand upon in this Fall issue is entitled "Follow the Water." NASA has become truly consumed in its search for water for which the Phoenix Mars Lander Spacecraft has been designed and built, its primary purpose to dig beneath the Martian polar topsoil to the layer of water ice below in hopes of discovering evidence of the possibility of earlier life forms.

**Search for Water.** Liquid water is the key to sustaining life on earth and possibly on other planets and moons. So it was stated by Philip Ball, one of several authors who have focused on the relationship between liquid water and the evolution of life on earth. His book, "Life's Matrix", on display in this exhibit together with four other works, all share one common denominator, that is, water as the basic substance which generates and perpetuates life. Water must be in a liquid form in order to 1) facilitate movement of chemicals into and out of cells, 2) properly function as a catalyst for chemical reactions between organisms and proteins, and 3) provide organisms a relatively painless medium of transportation into far flung corners around our planet. This may sound like pretty heavy stuff but I think it makes its point, water is unquestionably the most basic building block in our solar system.

**Follow the Water.** NASA's recently adopted slogan is gaining momentum, consider the far-reaching implications of the future success of the Phoenix Mars Mission. Comets, planets, moons, all contain a great deal of water ice and water vapor. What makes earth so unusual is the preponderance of liquid water. Perhaps liquid water may be locked away under insulating rocky surfaces, and thick layers of ice such as on Mars. The great majority of worlds in our solar system are frigid beyond human imagination. Let your mind wander for a moment free from preconceived ideas. On Mars, for example, air temperatures range from – 125 degrees F. at night to – 13 degrees F. in the afternoon. However, during the summer, soil temperatures can rise to 50 degrees F. or higher because the soil and rocks absorb sunlight making them warmer than the air. Isn't it just possible then that that warming is enough to allow the existence of liquid water below those surfaces? This is what the Phoenix Mars Lander hopes to discover for us during its three-month surface operations of trenching and analysis.

**Where are we now?** The role of water and its potential importance to the evolution of extra-terrestrial life continues to drive NASA's exploration of the solar system. A spacecraft is on its way to Mercury to locate water that scientists think they have identified. A spacecraft will begin a 20-year journey to Pluto, its moons, and icy bodies of the Kuiper Belt. Plans may solidify to approach the three icy moons of Jupiter, and maybe one day to probe their oceans, which scientists assume exist. NASA's agenda is, to say the least, ambitious, and once again underscores their resolve, that water may exist, or did exist, on other planets in our solar system.

## Restoration Update

By Bob Strand

### New arrivals:

1. Lockheed P-3. This is a four-engine turboprop long-range air search plane. It was derived from the old Lockheed Electra passenger plane. The long boom on the tail was part of the MAD gear (Magnetic Anomaly Detection) for finding submerged submarines.
2. NASA owned Lear jet executive transport.

### Old plane: New paint job.

The Douglas B-23 Dragon has lurked on the PASM back lot for many years. It is the "Daughter" of the B-18 now on display in the Spirit of Freedom Hangar. It was planned as a replacement for the B-18. Only 38 were built in 1938 but they were under armed as only three 30 caliber guns were installed. The B-23s top speed of 282 mph was much higher than the B-18s top speed of 212 mph, however, its range was increased by only 200 miles. It was a 1930's hot rod, which in a military sense relegated it to the "flash in the pan" category.

The PASM airplane represents the post war modification to an executive transport. The military bomber had a short nose that housed the bombardier's position. The executive transport version has the bombardier's position removed and a longer nose added to hold baggage. As a bomber, however, it was the first Air Corps bomber to have a gun position in the tail. The painted over windows for this gun position can be seen behind the trailing edge of the rudder.

### Large Old plane: Repaired rudder.

The Douglas C-133 Cargomaster transport has been on display at PASM for many years. Shortly after its arrival at PASM, a severe windstorm surgically removed the rudder and broke it into two pieces. The rudder pieces are now in the Restoration Hangar and have been spliced back together. Upon completion of the repair, the rudder will be re-installed but in a much stouter manner. The rudder is approximately one half the size of a Greyhound bus.

Another point of interest on the C-133 are the series of "belly bands" on the forward fuselage. Early in its career, several of the C-133's had the nose section break off in flight. These bands were a retrofit to control that problem.

### Really old rusty plane: Curtiss 0-52 OWL (1939 vintage)

All of the structural repair work and corrosion removal has been completed. Window glazing is still in progress. Pilot's windscreen is installed. Two sliding hatches need glazing.

Next up on painting schedule.

1. F-111 Aardvark
2. F-101 Voodoo

### The Grumman "Wildcat"

#### F4F-4/FM-2 Navy Fighter

By Bob Strand

The FM-2 Navy fighter on display in Hangar four is one in a series of Navy fighters developed by Grumman Aircraft Company starting in the early 1930's. The PASM FM-2 was recovered from Lake Michigan, where it was a victim of student pilot qualification exercises to introduce new pilots to aircraft carrier landings. It is remarkably well preserved thanks to the cold fresh water of Lake Michigan.



FM-2 IN FLIGHT

The "Wildcat" design originated from a series of biplane fighters that resulted in the F3F biplane. The F3F served on aircraft carriers from 1936

until late 1941. It carried two .30 cal guns, had a top speed of 238mph and a range of 985 miles.



GRUMMAN F3F AIRCRAFT  
CARRIER FIGHTER.

When war clouds gathered in 1939, the Navy realized that biplanes were now obsolete and asked Grumman to develop a monoplane with improved performance for aircraft carrier service. Grumman basically took the F3F, eliminated the biplane wings and made it into a mid-wing all metal monoplane. Fitted with a Wright R-1830 engine, six 50 cal guns, armor plating, self-sealing fuel tanks, and folding wings, the new fighter became the F4F-4 "Wildcat". It was used by the Navy starting in 1939 and remained the Navy's only aircraft carrier fighter until the arrival of the F6F "Hellcat" in 1943.

The F4F-4 was also sold to the French (briefly) and to the British. The British called it the "Martlet" and placed it in aircraft carrier service. Two "Martlets" became the first American built fighters to down a German plane in September 1940 while operating from the Orkney Islands. The "Martlets" also saw service in convoy duty from British aircraft carriers, as well as Naval operations in the Mediterranean and Army operations in the African Western Desert.

The U.S. Marines were also equipped with "Wildcats". The most notable campaign was the invasion of Guadalcanal in the Solomon Islands in August 1942. Marine "Wildcats" became the "Cactus Air force" supporting the 1<sup>st</sup> Marine Division in what historians have called the most bitterly contested campaign in American history since the Campaign of Northern Virginia in the Civil War. It was also

the time when Lt. Edward "Butch" O'Hare, flying a "Wildcat", downed five Japanese "Betty" bombers in about 6 minutes. He single-handedly saved the aircraft carrier Lexington from almost certain destruction. O'Hare was awarded the Medal of Honor for this action.



FIRST PRODUCTION "WILD CAT".  
DID NOT HAVE FOLDING WINGS.  
SERVED WITH THE MARINES.

The "Wildcat" was flown by a Marine pilot who is also pictured in the PASM Arizona Aviation Hall of Fame, Captain Joe Foss. Capt. Foss (later Major) flew out of Henderson Field, Guadalcanal as a flight commander for the Marine fighter squadron VM F-121. Capt. Foss downed a total of 26 Japanese aircraft including, five in a single day. He was awarded the Medal of Honor for his actions during the bloody fight for Guadalcanal.

The production of "Wildcats" began at Grumman's Beth Page, Long Island, NY factory. With the introduction of the F6F "Hellcat", production of the F4F was assigned to the General Motors Corporation factory in Edison, N.J. The aircraft produced at Edison carried the designation "M". The early "Wildcats" produced there were designated as FM-1.

The "Wildcat, however, was not dropped from production with the advent of the F6F. There was a continuing need for the type with the introduction of the small escort carriers. The FM-1 was upgraded to an improved model, the FM-2.

Comparison of the two "Wildcat" Models

	F4F-4 (FM-1)	FM-2
Engine	R-1830 - 85, 14cyl.	R-1820 - 56, 9cyl.
h.p.	1200	1350
Max. Take off wt.	7952 lbs	7412 lbs
Max. speed	318mph	332mph
Armament	<b>6</b> - .50 cal.	<b>6</b> - .50cal.

The FM-2 had improved performance compared to the original F4F-4. It was 540 lbs. lighter with the same military load as the FM-1 and the engine developed 150 more horsepower, which greatly helped it to take off from the small escort carrier's short flight decks.

The "Wildcat" was simple to operate. Some observers might even say that the cockpit controls were crude. Engine controls were similar to airplanes of the WWII period but things went downhill from there. There was no hydraulic system at all in the airplane. The wheels were raised and lowered by a hand crank connected to the landing gear structure by sprocket wheels and bicycle chain. The pilot had to count the number of crank turns, around 28, to fully lower the wheels and position the main landing struts in their proper extended and locked position. Failure to fully extend the landing gear struts always resulted in an embarrassing belly landing featuring a bent propeller, a crushed fuselage underside and an engine change.

The flaps were vacuum operated and the six guns were manually charged by three cable connections on each side of the cockpit. The engine used a cartridge starter. This was the Breeze Company type which opened like a shotgun breech. The breech can be seen near the top of the right wheel well in the PASM example.

At the outbreak of WWII, the "Wildcat" was in the same role to the U.S. Navy as the Hawker "Hurricane" was to England's R.A.F.

Both were outstanding fighters, available in quantity at a time when both Nations sorely needed a good warrior.

## MEET YOUR PASM VOLUNTEERS



**Wayne Butler**

Wayne enlisted in the Army Air Corps in December 1943 and served as an Aerial Gunner on the B-24. He was one of seven members who founded the 162<sup>nd</sup> Fighter Group Arizona Air National Guard in Tucson in 1956. He served as an aircraft mechanic and later in the positions of Line Chief, NCOIC Maintenance Control, and Field Maintenance Chief. He was promoted to Chief Master Sergeant in April 1961. From 1979 to 1982 he served as the first Senior Enlisted Advisor for the state of Arizona.

While in the aircraft maintenance field, Chief Butler worked with a variety of aircraft including the P-40, B-24, C-87, C-54, C-47, C-46, AT-6, T-33, F-86, F-84, F400, F-102, and A-7.

He was elected president of the first class at the Air Force Senior NCO Academy. The majority of his classmates were active duty Air Force plus one from the Air Guard and two from the Air Force Reserve.

Wayne's decorations include the European Campaign Ribbon and the North Africa Campaign Ribbon. He retired in February 1982.

Starting at PASM as a Tram Driver in December, 1998, and has since moved on to do AMARG Tours.



**Joe Seibold**

Born on Dec 1, 1929 in Elwood, Indiana, attended St. Joseph's grade school and graduated from Elwood High School in 1948. Joe enlisted in the Air Force that same year and was discharged in 1952.

While attending Art Center College of Design in Los Angeles, CA Joe was hired by Ford Motor Co. in his junior year and went to work in Dearborn, Michigan as a design sculptor or clay modeler which ever you prefer.

He moved up through the ranks and was promoted to Modeling Supervisor in 1984. Joe worked for Ford in Germany, England and Japan in the modeling departments. He spent his last three years in Dearborn as the Design Centers Human Resource Manager after he developed a comprehensive computer based human resource budgeting system. Joe retired in 1996 and now spends half the year in Michigan and half in Tucson.

Joe is a member of the EAA and IAC (International Aerobatics Club). He has built his own airplane, a Zenair 601 HD, which he flies as often as he can find the time. Joe is working on a second airplane, an updated Zenair model

As a member of the Greeter team, Joe spends his Sundays at the museum.

Joe and Pat have been married since 1951 and have 5 children, 9 grand children and 4 great grand children, most of whom live in Michigan.



**Robert S. (Bob) Hewett**

Born on March 27, 1935 in Lakewood, Ohio, raised in several northern Ohio towns and graduated from Lakewood High School in 1953, he received a scholarship from Yale University and graduated in 1957 with a BA in history.

Bob was recruited by the Central Intelligence Agency in September, 1957. In January, 1958 he enlisted in the United States Air Force. After basic training at Lackland Air Force Base, he went on to Officer Candidate School graduating in September, 1958 and was commissioned a 2<sup>nd</sup> Lieutenant in the Air Force Reserve.

Bob was then assigned to the USAF Intelligence School, Sheppard Air Force Base, Wichita Falls, Texas and served there as an instructor until September, 1959, at which time he returned to Washington and the CIA.

At the CIA Bob served as a case officer and manager both at headquarters and stations abroad for 37 years. He retired in 1994 as a GS-15 and speaks German, some French and Swedish.

As an Air Force Reserve Officer, Bob had assignments to various Air Force intelligence organizations in CONUS as well as overseas. He retired from the Air Force in 1986 with the rank of Lt. Colonel.

After joining PASM in July, 1995 as a Tram Driver, he then became an Education Docent in 1997. Bob served as the PASM staff Volunteer Coordinator in 1998-99. He currently serves as a Walking Tour Docent.

Besides PASM, Bob enjoys music and reading history (particularly military and American). He has been singing before audiences since the age of seven and is currently a member of the Dry River Singers, a small (9 members) singing group.

Bob and Barbara moved to Tucson in July, 1995 from northern Virginia. They have three children and three grandchildren, all of whom live in Tucson.

### **CORRECTION**

In the printing process of the Summer 07 issue of the Conrails, the last sentence of the biography of both Roger Misgen and Pam Asbury - Smith was incomplete.

The last sentence of Roger's biography should have read: "They have 7 grown children and 7 grandchildren."

The last sentence of Pam's should have read: "Pam is now fulfilling another desire and that is as a volunteer at PASM."

### **A day in the life of an Old Soldier**

By: Shel Coudray

Here it is Saturday, July 28<sup>th</sup> 2007. It's been a long day for me at the Pima Air and Space Museum. It's been raining hard all day. We are in the middle of an unusually wet Monsoon season. I am assigned to hanger # 3, which is full of beautifully restored WW-2 aircraft. I am sitting just inside the main entrance to this huge hanger and am surrounded by historical airplanes. A British Hawker Hurricane is out in front of me. A B-25J and an A-26C are in the distance. Lots and lots of airplanes - even a rare F1-156 Storch hangs over my head. My favorite, of course, is a beautiful bright and--- shiny aluminum B-24J, the "Bungay Buckaroo" and sometimes when there is no one else in the hanger, I slowly walk around it saying hello to Sam and Bob or to Tony, who has stuffed

himself into the Ball Turret, or to John Coyle way up front in the Nose Turret. Some of the crew are still here and some are gone like Smitty and Alvey who have made their final landings.

It is 4:00 pm and suddenly the hanger is empty of visitors. The rain is getting worse, there is thunder and lightning. I walk to the glass doors. There are a few people running between hangers. I decide to go back and sit at my desk since we still have an hour until closing time. Maybe the rain will slow down by then.

Something is wrong - it's getting dark in here and I notice the overhead lights are off when a loud crack of thunder startles me. I become disorientated for a moment then I hear the faint sound of radial engines. I close my eyes to hear better. The sound is getting louder. They are Pratt and Whitney R1830's. It sounds like four of them. The noise is incredible. I open my eyes and snap my head to the right, in place of the beautiful Bungay Buckaroo is an old weather beaten B-24D, #155 painted on the nose. I see Sam and John Coyle motioning to me to come on. We are waiting for you. I am startled! I look around me and find that I am no longer in Hanger #3. There is no hanger #3 and no historical aircraft, except in the distance, I see a long line of B-24's sifting on the coral runway waiting for their turn to takeoff.

I snap my head to the right again, it's still there on the taxi strip. # 155 waiting for me. I see Bob MacPhail jump down from the camera hatch, he is running towards me. I run towards him. He is furious—Where the hell have you been Coudray - we have already lost our place in line. Get your ass in gear.

I'm sorry Bob, I must have fallen asleep while waiting for you in the jeep. I had a strange dream about being a volunteer in a museum 60 years from now.

## Dr. Anselm Franz: Jet Engine Pioneer

By: Joe Pacholec

Although Sir Frank Whittle and Dr. Hans von Ohain share credit for developing the first practical jet engines to power an aircraft, neither one of their engine designs ever saw combat in World War Two. The world's first jet fighter, the German Messerschmitt ME-262, was powered by a pair of Jumo 004 jet engines which were the first successful axial flow turbojets. The man who developed the Jumo 004 was Dr. Anselm Franz (excerpts from his biography obtained from the online Wikipedia encyclopedia are presented below).

**Anselm Franz** (1900-1994) was a pioneering jet engine engineer, known for the development of the Jumo 004 turbojet in Germany during World War II, and his work on turboshaft designs in the U.S. after the war.

Born in Schladming, Austria, Franz studied mechanical engineering at the Technical University of Graz and earned a doctoral degree from the University of Berlin. In 1936, he joined Junkers, and during much of the 1930s he was in charge of supercharger and turbocharger development.

Meanwhile, Hans von Ohain's first engines were being run at Heinkel, although there was little official interest. In early 1939 Otto Mader at Junkers said that even if the jet engine was worth looking at, he had no one to run such an effort. **Helmut Schelp**, from the **Reichsluftfahrtministerium** (RLM), suggested that Franz would be perfect for the job, given his experience in turbocompressor work.

The program was set up later in 1939, initially consisting of a very small team drawn from the supercharger division. Unlike the Heinkel designs, the Jumo would use an axial compressor, as opposed to the centrifugal compressors, in order to have a smaller frontal area. Franz decided to focus on development time instead of performance in order to avoid having the program killed off if it didn't produce a working engine quickly.

The first testbed run of the experimental 004A took place in the spring of 1940, and had full speed runs in January 1941. The engine flew on a Messerschmitt Bf 110 on March 15, 1942, and after a number of these A models were delivered, the Messerschmitt Me 262 first took to the air with the 004A on July 18. The RLM was finally interested in the design, and ordered 80 production quality versions. The new **004B** version included a number of changes, but ran into problems that greatly delayed its service entry. It was not until the spring of 1944 that the engine could enter full production. It nevertheless went on to power the majority of the Luftwaffe's jet designs.

After the war Franz moved to the US, and worked for a time with the USAF on engine-related issues. In 1951 he was hired to set up a new turbine division at Lycoming's otherwise unused plant in Stratford, CT. He decided to focus on engine areas not currently served by the larger companies (GE and Pratt & Whitney), eventually settling on helicopter engines. His first design, the T53, would go on to be one of the most popular turboshaft engines in history, powering the Bell Aircraft UH1 Huey and AH-1 Cobra helicopters, and the OV-1 Mohawk ground attack aircraft. In the 1960s he led development of a new design for tank use, which developed into the AGT-1500, used on the M1 Abrams tank.

Franz retired from Lycoming in 1968, having risen to Vice President. He died in 1994, holder of the US Army Outstanding Civilian Service Medal, the R. Tom Sawyer Award from the American Society of Mechanical Engineers, and the Grand Decoration of Honor from Austria.

Although the above biography does an excellent job of describing Dr. Franz and his accomplishments, I have found additional information on him which will be the source of a future Contrails article.

## Last Flight

Since the last issue of Contrails we have discovered that two members of our PASM family have passed.

### Jack Green

Jack Green, who had been fighting cancer for the past 8 months passed away Thursday, June 28<sup>th</sup>, 2007 surrounded by his family here in Tucson. The Memorial service was held July, 28<sup>th</sup>, 2007 near Kent, WA.

After 5 years in the USAF Jack finished his working career as a DOD civilian with the US Navy. He began his volunteer career at PASM on 4/1/2005 and donated 250 hours with the Exhibits team, he will be missed. Jack is survived by his wife Jean and their three children.

work station, gathered the necessary tools and went to work with a quiet but determined resolve. Rust was banished, frozen bolts relinquished their stubborn grip, hinges once again were persuaded to move and gradually useful parts emerged from what at first looked to be a hopeless mass of old steel. Tino's skill and willingness to tackle one tough job was the deciding force leading to a successful project conclusion.

Men with his combination of skill and willingness to give of himself are not easy to find. The Pima Air and Space Museum was indeed very fortunate to have had this man give part of his retirement years toward our goal of becoming a world class museum.

### Faustino "Tino" Jubera

Restoration volunteer Faustino "Tino" Jubera, spent 20 years in the USAF from July 1951 to August 1971. He began his PASM career in the Spring of 2005. He was a heavy equipment operator and operated trucks, fork lifts and front loaders. Tino will obviously be missed. He passed away on Friday, July 20, 2007, his wife died several years ago from cancer.

Bob Strand from Restoration writes: Faustino or "Tino" as the volunteers in Restoration knew him, was one of our long time mainstay workers. He brought a broad knowledge of airplanes acquired after a long career in the U. S. Air Force. He also brought a willingness to tackle any job that was handed to him with a cheerful attitude.

Tino's most recent exploits centered around our project to restore the Douglas A-20 Havoc bomber. We were dismantling the two engine mounts to salvage the exhaust system parts which were badly corroded or had numerous parts that were supposed to move but couldn't. Tino set up a

## INSIDE THE SPIRIT OF FREEDOM

