



CONTRAILS



Volume 8 Issue 4

“Information for and about Volunteers”

Winter 2005

FROM THE EXECUTIVE DIRECTOR

Daniel J. Ryan

What a year it has been at the Arizona Aerospace Foundation! We appointed a new Director at the Titan Missile Museum, in former Board of Trustee Yvonne Morris, transplanted Brian Ewenson from the Washington D.C. area to assume the duties of Director of Education & Programs, and placed Joan Ardern as our Director of Development & Community Relations. In addition, we are very pleased that we were able to lure Brook Sims from



the state of Idaho to return to Tucson as the Volunteer and Human Resources Administrator. These individuals represent significant advancement in the continued growth and development of the AAF and all of its related entities, please join me in offering an official welcome if you have not already done so.

The Collections department had an incredibly busy year with the acquisition of several important aircraft including the featured aircraft located on the bottom of this page. Warning the object in this picture is much larger than it actually appears! This will be quite a project that I expect will require the better part of next year to complete.



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Just a quick recap of some of the activity in Collections for the past year including the acquisition of the NASA KC-135 “Weightless Wonder”, the Kaman SH-2F “Sea Sprite”, the Douglas C-9 “Skytrain II”, and the V-1 “Buzz Bomb”.

Thanks to all of you for your many thousands of hours of volunteering and for making our visitor experience like no other in the world of aviation and space museums. As we enter the holidays, please accept my wishes for a happy season, and a healthy and prosperous New Year.

**TMM
DIRECTOR's CORNER**

By Yvonne Morris



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

Business is starting to pick up at the Titan Missile Museum, and we're certainly excited that our volunteers who are winter visitors are also starting to trickle back into town. We missed our friends. Welcome back!

Service Pins

The following TMM volunteers earned new Service Badges in the last 2 months:

250 hours

Rex Eaton, Don Scholler

500 hours

Wes Whitman *

750 hours

George Birch , John Lovern

1000 hours

Jim Schultz

1500 hours

Pat Parker

1500 hours

Bernie Gordon

3000 hours

Ray Colony, Dean Hendrix *

5000 hours

Ralph Hoemke *

*** Combined Service at TMM and PASM**

Congratulations to each of you!

Volunteers of the Month

The Volunteers of the Month for September, October and November at TMM are as follows:

September: John Lovern: John is the lead volunteer archivist at TMM. Without John, the archive would be closed to all research at this point because we don't have a staff archivist. Additionally, John supervises the other archive volunteers and ensures that we're following the correct conservation procedures. It's an important job, even if it's behind the scenes, and one that contributes a great deal to the mission of the museum. Thanks John!

October: Chuck Penson: With the exception of our returning winter docents, I think all of the TMM docents have seen and used the new topside video tour produced by Chuck Penson and his wife, Kathryn Bevacqua. We use this video in inclement weather, and it's received rave reviews from docents and the public. Chuck and Kathryn donated their time and talent to producing this terrific video, and it allows the museum to offer an excellent value to our visitors even when bad weather prevents us from taking our visitors on a walking tour of the topside portion of the site. Thanks Chuck!

November: Jim Schultz: Jim is a prime example of the "can do" attitude that the Titan volunteer corps possesses. Recently, he stepped up to the plate on a Saturday when we were short-staffed. Not only did he volunteer to work all day, but in the afternoon he spearheaded a 3-docent rotation. Jim gave the last tour of the day at 4pm, and even though he'd been run ragged all day, his last tour of the day was as professional and engaging as his first tour of the day. We know this because the visitors raved about him all day long, including the visitors on his last tour. Jim's dedication and professionalism under adverse conditions made a positive and lasting impression on our visitors that day, and he represents the

experience that we want all of our visitors to have when they visit the museum. Thanks Jim!

Congratulations to John, Chuck and Jim and thanks for a job well done!

The White Elephant

It's that time of year when the great white elephant comes out to play in Green Valley.

I'm talking about the annual Country Fair White Elephant Parade, an October tradition in this neck of the desert. Volunteers Len Defendorf, Jim McMillan, Woody Woods, Dave Weeks, Sandy Johnson and Sue Hein did a fantastic job, as usual, on the parade float this year. It was truly a site to behold. We didn't place this year, but it was not for lack of trying. However, winning a White Elephant is not the point of our entry in the parade. Entering the parade is one way that we acknowledge and pay tribute to the Country Fair White Elephant organization for the tremendous work that it does.

It's another way for us to thank the White Elephant for its support of the Titan Missile Museum education program.

Please take a moment to say thanks to the White Elephant Parade Committee, and especially Len Defendorf. Not only did Len spearhead the committee this year, but he accepted the ultimate challenge to portray the role of the White Elephant on the float. What a trooper!



Again, welcome back to our winter volunteers. And to the folks who hung around all summer, I want to say thanks. It was hard, hot work, and you all did a great job.

I enjoy working with all of you!

MEET YOUR TMM VOLUNTEERS

By Sandy Johnson



I want to thank everyone at TMM and PASM for their cards, calls, visits and prayers while I was out of commission. I am feeling much better and am back, happily, to some of my volunteer duties.

There will not be any volunteer biographies again this month because I need to get the group together when the winter residents return. I have to get them to sit down and write up their information and I need to get their pictures. This is a very shy (yeah, right) bunch of people. C'mon folks---help me out. Please get your information to me, and let me know when we can get together for your pictures. I am looking forward to seeing all of you soon. Welcome back.

Sandy

PASM COORDINATOR'S CORNER

By Brook Sims



Who Is Brook Sims?

I was born in Mountain Home, Idaho to an Air Force pilot and his small-town Idaho sweetheart. Due to the Air Force I was able to travel to such far away places as Guam, Japan, and Hawaii and then not so far away places as Montgomery, AL, Colorado Springs, CO, and Tucson, AZ. As much as an Air Force brat can be a native to Tucson I did go to high school here and graduated from the University of Arizona. At the U of A I was able to jumpstart my enthusiasm for volunteering as a Docent for the Arizona State Museum and a Gallery Assistant at the Joseph Gross Gallery. After finishing college I soon moved to Boise, ID where I had the opportunity to work as the Volunteer Coordinator for the Idaho Botanical Garden and The Peregrine Fund's World Center for Birds of Prey. And not only did I enjoy working with volunteers I also volunteered at the Boise Art Museum. But before I recently returned to Tucson I got to spend six months in Oxford, England where I was able to travel throughout the United Kingdom, Italy, Spain, France, and Denmark. And boy did I get to see a lot of museums. Now I am back in Tucson with my two cats, gradually getting moved and settled in. I am enjoying meeting all of the volunteers and hope to help with the volunteer program in any way that I can.

Wanted: Team Leaders

We are missing Team Leaders in the following areas:

- *AMARC
- *Tram
- *Hangar 1
- *Student Tours
- *Walking Tour
- *Administration

Team Leaders are a vital member of the volunteer team and are essential in volunteer communication. The Leader's responsibilities include, coordinating the work schedules, team communication, and assuring that volunteers are properly certified (where applicable). If you are interested in becoming a Team Leader or would like more information about becoming a Team Leader, please contact Brook at 618-4819 or bsims@pimaair.org.

Holiday Potluck

Join us on Thursday, December 15th at 5:30 p.m. for the Pima Air and Space Museum's Holiday Party! The museum will provide the main dish and beverages, but we ask that you bring a side dish or dessert to share. The party will be held in Hangar 4. Pima Air and Space Museum's staff and volunteers are invited to attend, as well as a guest of the staff or volunteer. Please RSVP to Brook (618-4819).

Artist Needed:

Nose Art for Special Event bars (contact Lou Prawitz or Brook Sims).

Greeter Team

By Bill McGuire

HELP!! We are well staffed on Mondays, Wednesdays & Fridays but Tuesdays and Thursdays are wide open. It's a fun job & the benefits are very good. The hours we request you work are from 09:00 till 14:00 so if you are interested please contact Brook Sims or myself (546-1246). Training takes about one hour.

Also, Saturday and Sunday spaces are available!!!

PASM SERVICE AWARDS

Congratulations to the following volunteers who have earned milestone badge awards since the last *Conrails*:

250 Hours

**Robert Bates, John Edris
Al Mosher, Dick Cary
Frank Fuqua, Jerry McCafferty
Bill Paul**

500 Hours

**Al Bettilyon, Bob Dietrich
Noreen Frizelle, Bill McLaughlin
Bill Smith, Ken Cullen
Ray Hovis, Les Powell**

750 Hours

**Dee Brunner, Frank King
H.F. "Mac" McFadden
Jim Walech, Glen Carlson**

1,000 Hours

**Ken Brandt, Charles Hubbard
Don Olson**

1,500 Hours

**Dick Brown, Mike McAuliffe
Ed Sanford, Jim Harner
Tom Wiley**

2,000 Hours

**Ed Cullen, Bill Earle
Earl Larsen, Perry Shirk**

3,000 Hours

Ted Dore, Lee King

5,000 Hours

George Kircher, Dick Lockhart

7,000 Hours

Ray Hiatt

PASM Calendar:

The following meetings and events are scheduled for the coming months. Call the Museum Scheduler (618-4800) or the Volunteer Coordinator (618-4819) for information or details.

Dates and times are subject to change.

- | | |
|---------------|--|
| 11/19 | Volunteer Presentation Series
(10:00 a.m., Stitt) |
| 11/19 – 11/20 | Restoration Closed |
| 11/24 | Thanksgiving (Museum closed) |
| 11/28 | Team Leaders and Captains
meeting (9:00 a.m., Stitt) |
| 12/10 | Volunteer Orientation
(9:00 a.m., Stitt)
Titan Holiday Party |
| 12/15 | Pima Holiday Party
(5:30 p.m., H 4) |
| 12/17 | Volunteer Presentation Series
(10:00 a.m., Stitt) |
| 12/26 | Team Leaders and Captains
meeting (9:00 a.m., Stitt) |
| 12/25 | Christmas & Hanukkah begins
(Museum closed) |
| 12/31 | New Year's Eve |
| 1/01 | New Year's Day |
| 1/03 | Titan All Hands Meeting (8:00) |
| 1/11 | Pima All Hands Meeting
(10:00 a.m., Stitt) |
| 1/14 | Volunteer Orientation
(9:00 a.m. Stitt) |
| 1/21 | Volunteer Presentation Series
(10:00 a.m., Stitt) |
| 1/30 | Team Leaders and Captains
meeting (9:00 a.m., Stitt) |
| 2/08 | Pima All Hands Meeting
(10:00 a.m., Stitt) |
| 2/10 | Volunteer Orientation
(9:00 a.m., Stitt) |
| 2/10 – 2/11 | SR-71 Symposium (Pima) |
| 2/18 | Volunteer Presentation Series
(10:00 a.m., Stitt) |
| 2/27 | Team Leaders and Captains
meeting (9:00 a.m., Stitt) |

SR-71 Symposium

It's that time again when the SR-71 pilots and enthusiasts head to the Pima Air and Space Museum. The 2006 symposium is going to be held on Friday and Saturday, February 10th—11th. There will be speakers, an open cockpit, and lots of new gift shop merchandise.

We will need additional volunteers for those two days, so for those of you who are interested please be sure to contact Brook.

See you out there!

Meet Our NEW PASM Volunteers

Welcome to the new volunteers who have joined the PASM family since the last Contrails issue. Their names and volunteer assignments are:

**Jerry Cogelja TR, Annette Sostarich RS,
Dave Menser RS, Al Hanabergh RS,
Bob Epstein AD, Pamela Asbury-Smith CH,
Tino Jubera RS, George Rimmell EX
Randy Hannon GR, Robert Kern TR
Art Kidder RS, Steve Madsen EX
Ray Mendenhall RS, Manuel Rodriguez RS
Donald Spann RS, Ted Thompson TR
Chris Wellborn RS**

Volunteers of the Month...

September – **Irwin Feldman**

October – **Bill Minor**

November – **Chuck Perger**

Where Did They Go?

By: Don Clay

Whatever happened to Ryan Aircraft that built the *Spirit of St. Louis* for Charles Lindbergh, the PT-22, the Navion, the Firebee jet target drone, and the X-13 VTOL? Well, Ryan was acquired by Teledyne in 1968 and Teledyne was acquired by Northrop Grumman in 1999.

Ryan Aeronautical Company was formed by T. Claude Ryan in San Diego in 1934. In 1941, they starting building the first of 1,298 open-cockpit PT-22 Recruits for pilot training. Ryan's flying schools trained Army pilots in large numbers during the War, and became the largest private flying school during that period. What happened to Republic Aviation that built the P-47 Thunderbolt during World War II, the F-84 Thunderjet during the Korean War (first flown in 1946), F-84F Thunderstreak, and the F-105 Thunderchief during the Cold War and the Vietnam War? Well, Republic was acquired by Fairchild in 1965 and became the Republic Aviation Division of Fairchild Hiller.

Fairchild Aviation was formed in 1926 as the Fairchild Aviation Corp. In 1964, Fairchild acquired Hiller Helicopters and formed Fairchild Hiller. In 1965 it acquired Republic Aviation and formed the Republic Division of Fairchild Hiller. Later it was renamed Fairchild Republic in 1973 and built more than 700 A-10 Thunderbolt II (the Warthog). Problems with the T-46 jet trainer led to an announcement in 1987 that Fairchild Industries was leaving the aircraft business. This essentially marked the end of over 60 years of Fairchild aircraft manufacturing. Remaining assets were sold off in 2003.

During World War II, the Fairchild PT-19 Cornell that was first developed in 1938 was one of the primary Army pilot trainers. They added an enclosure to cover the two open cockpits and

sold it to Canada as the PT-26. The twin boom Fairchild C-82 Packet entered service in 1944, and the Fairchild C-119 Flying Boxcar (1947) was the mainstay transport plane of the Korean War.

The Grumman Aircraft Company was founded in 1929 by Leroy Grumman. The FF-1 was the first plane they built for the Navy. It was a biplane with retractable landing gear. During World War II, Grumman built the F4F Wildcat and the F6F Hellcat fighters and the TBF Avenger torpedo bomber. Grumman's first jet fighter was the F9F Panther, operational in 1949. In the 1960s, Grumman built the A-6 Intruder. For 20 years, Grumman built the F-14 Tomcat in its Long Island facility up until 1992. The first Tomcats were delivered to the Navy in 1972.

Remember the Northrop Flying Wing? Northrop Aircraft was formed by Jack Northrop in 1939, and in 1944, the company produced the P-61 Black Widow night fighter. The first flight of the XB-35 Flying Wing came two years later. Then came the F-5 Freedom Fighter and several derivatives of it including the T-38 supersonic trainer and the F-20 Tigershark. The stealth bomber B-2 Spirit, a descendant of the Flying Wing, first flew in 1989. Northrop Aircraft either merged or acquired its major competitor, Grumman, in 1994 and the Northrop Grumman Corporation was formed.

Through the years, the conglomerate Northrop Grumman acquired Westinghouse Electric Corp, Logicon, Teledyne Ryan Aeronautical, Litton Industries, Newport News Shipbuilding, TRW Inc, and others. And, they are now the designated prime contractor for the A-10 Thunderbolt II.

Final Flight



LEO J. BOICE

October 24, 1920 to October 3, 2005

Graduated from the Kingston school system and Moran Business School and then attended New York University majoring in music. While in college he made his first solo flight in a piper cub on floats in the Hudson River and decided to quit and attend the Ryan School of Aeronautics at San Diego where he received his Commercial License. Upon obtaining his flight instructor rating he was hired as a flight instructor in the CPT program at RPI and Siena College at Albany, N.Y. Shortly after Pearl Harbor he transferred to Scotia where he taught primary and secondary flight to cadets in the war training service and the Navy V-5 program. He met his wife, Jean, at this time. She became a very well know aviator in her own right, obtaining most of the ratings and eventually running an advanced flight school at Teterboro.

Leo joined the Navy and became one of the first Aviation Pilots 1st Class to be inducted. After attending the Naval College of Flight Instructors at NAS New Orleans he accepted a commission and taught cadets at NAS Millington until being discharged on Dec. 7, 1945.

He and his wife, Jean, started an airport and flight service (fixed base operation) at Catskill N.Y. after the war, operating it for about 10 years doing all sorts of flying, including air shows (Stearman aerobatics). Leo became a commercial and private examiner for the CAA and issued many licenses. In 1951 he joined Eastern Airlines and flew many different aircraft. He was a check Captain and instructor on the DC9 for a time but preferred line flying. He retired from active flying in 1980 with total flight time of just under 25,000 hours.

He believed that he had flown 21 of the models of aircraft displayed at PASM.

The Engine with One Moving Part

Submitted By A. Sostarich

If you look up the tailpipe of a V-1 flying bomb (A.K.A. Buzz Bomb), you might think something's missing. The inside of the engine is just a big open space, without any of the mechanism one might expect. It's supposed to be that way.

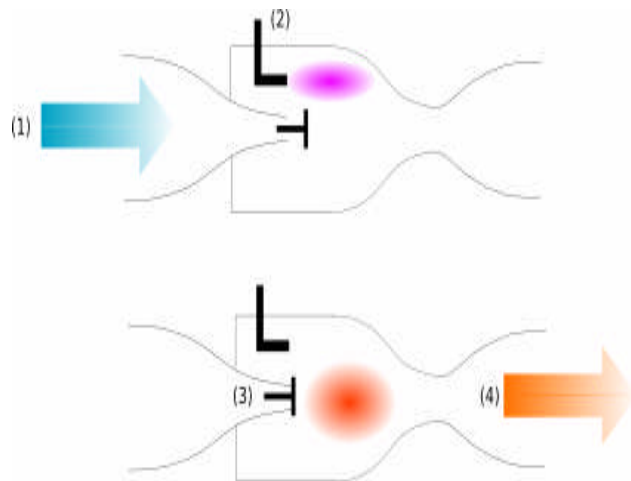
The Vengeance Weapon 1, or V-1 for short, was a product of the kind of innovative thinking that often progresses much more quickly in wartime than peace. It was the first operational cruise missile, although that name came much later, and the first (maybe the only!) production aircraft to use a Pulsejet engine.

The pulsejet is the second-simplest air-breathing engine known. (The simplest is the Ramjet.) Instead of the multiple moving parts and close manufacturing tolerances needed for both piston and turbine engines, it consists of nothing but a combustion chamber, an acoustically resonant tailpipe (hence the seemingly excessive length), and a shutter on the intake that acts as a one-way valve. Fuel and ignition systems are very simple, consisting of a spark plug used only for starting, and a fuel nozzle in the combustion chamber. Air entering at the intake mixes with the fuel and is ignited, raising the pressure in the combustion chamber and causing the shutter to close. The exhaust leaves through the tailpipe, creating thrust, and when the pressure in the chamber drops, the shutter opens to admit another gulp of air to repeat the cycle. This occurred about 40-60 times per second, creating the sound that gave the buzz bomb its nickname.

The pulsejet had several advantages in this role. It could be built from non-strategic materials (steel), required a minimum of close-tolerance parts and thus could be built inexpensively by

unskilled (slave) labor, and was reasonably reliable in the short run, making it suitable for a single-use aircraft.

The pulsejet's disadvantages, however, were sufficient to keep it out of the mainstream of aviation as the turbojet rapidly evolved into a more suitable power plant. The pulsejet developed very little thrust until it had some airspeed to compress air into its intake, necessitating a steam-powered catapult to launch the V-1. It required a source of airflow for starting. The engine's fuel consumption was high for the thrust it produced, and it was unbelievably noisy. It also produced unacceptably high vibration levels that would have led to eventual mechanical failures and pilot fatigue in a manned craft. Thus the turbojet engine, with its smooth, efficient, and, eventually, very reliable operation, became the power plant of choice for modern jet aircraft. Current research in hypersonic flight, where turbines become less useful, may use some elements of these early designs.



Pulse jet schematic. First part of the cycle: air intake (1), mixed with fuel (2). Second part: the valve (3) is closed and the ignited fuel-air mix (4) propels the craft.

Restoration Report

By Bob Strand

The biggest news to recently break at the Pima Air and Space Museum has been the recent arrival of the Convair B-36 from Fort Worth, Texas. This aircraft is one of four remaining examples left from the 325 machines that were produced. The aircraft was disassembled in Fort Worth, Texas and shipped by truck to Tucson. The last section to arrive was the wing center section which was approximately 140 feet long and weighed 50,000 pounds.

The XB-36 was first designed in October 1941. The demands for bombers during World War II, however, delayed completion of the first two prototypes for almost five years. The size of the aircraft was larger than any bomber produced in the USA with a wingspan of 230 feet, a length of 163 feet and a vertical fin height of 46 feet. The two main landing gear tires had a diameter of 9 feet and 2 inches. These wheels presented a high weight concentration for the gross weight of 265,000 lbs. To prevent the aircraft from cracking conventional runways, the production models were fitted with two sets of four wheel bogie type landing gears. In its first flights, the prototype achieved speeds of 346 mph. The aircraft was fitted with six Pratt and Whitney R-4360-25 Wasp Major engines, each delivering 3000 hp. A pusher propeller arrangement was used.

Production aircraft were changed to meet performance improvements. B-36A's incorporated a new raised cockpit with a green house type canopy. Twenty two B-36A's were built.

B-36B's were powered by Pratt and Whitney R-4360-41 engines. These engines raised the top speed to 381 mph. The gross weight was 227,000 lbs with a range of 10,000 miles. No B-36C models were built. The YB-36C was an experimental design incorporating six Pratt

and Whitney R-4360-51 engines of 4300hp each. A tractor propeller arrangement was used. This design was expected to increase top speed to 410mph. This engine did not reach prototype development, however, and the project was cancelled in May 1948.

The B-36D achieved further performance improvements through the incorporation of four General Electric J-47 engines each developing 5200 lbs of thrust. These engines were mounted in pairs near each wing tip. This engine arrangement gave a top speed of 439mph, a cruising speed of 225mph, and a range of 7500 miles with a 10,000 lb bomb load. Fuel capacity was 32,910 gals.

The aircraft that the museum now has is a B-36H. This model was the largest number produced at 154 aircraft. Our aircraft was unarmed and used for special experimentation. It was fitted with a nuclear reactor to determine the affect of radioactivity on aircraft instruments and structural parts of the airframe.

The last B-36 was retired in May 1958. The fleet was scrapped at Davis Monthan AFB.

The source of most of my information was from a book, "U.S. Bombers, B 1-B-70", by Lloyd S. Jones, Aero Publishers, Inc. I recommend this book for additional reading on the B-36.

Did you Know That:

- 1) **The first AMARC Tour was 19 Jan 99**
- 2) **Pete Hammerton (deceased) and Kirby Nunn narrated 4 tours, with each bus filled to capacity**
- 3) **The first team leader was Kirby**

MEET YOUR PASM VOLUNTEERS

The Sunday Tram Team



Gary Sparks and Pat Donovan

Gary was born in Quincy, IL May 8, 1929, graduated from Hamilton High School in 1946 & enlisted in the US Army. Sent to Japan in the Army of Occupation, he spent almost 14 months in Kobe Japan assigned to the Criminal Investigation Div. Promoted to Cpl. Gary returned to the US in Jan 1948 and received an honorable discharge.

After one semester at Culver-Stockton in Canton, MO Gary transferred to the Univ. of Iowa. An Aviation Cadet Selection Team visited the University and Gary was selected and assigned to Class 51G. Gary reported to Connally AFB, at Waco, TX in Sept 1950 beginning a busy flying career.

After flying the T-6G at Connally it was on to Craig AFB, Selma, AL and the P-51 Mustang. Commissioned, with wings and bars in Oct 1951, then to Gunnery School at Luke AFB, AZ. After gunnery school Gary flew 100 missions in the P-51 at K44, Kimpo Korea.

Gary flew many different aircraft during the next 20 years, (T-33, F-80, F-84G & F-84F, F-86F & F-86E, F-89J, F-101, F-100, F-4, T-39, C-47, & the L-20). During his military career, Gary received the WW2 Victory Medal, the Good Conduct Medal, & the Army of Occupation from the US Army. Flying combat in the USAF resulted in the DFC & Air Medals with clusters and numerous other awards including the Air Force

Commendation Medal and the Air Force Meritorious Service Medal.

After Gary retired from the USAF as a Major in 1970 he went to work as Chief Pilot for an Oil Company in Texas where he flew the G-2 jet, the Lear jet, & the Citation jet. Later Gary also flew the Twin Otter and numerous light aircraft.

Gary and wife moved to Tucson in 1982. Their daughter Teri and her family live in Texas.

Gary has worked at the Pima Air Museum as a volunteer since 1996. He started out showing movies in Hanger 2, next on the Presidential airplane, then Hanger 3 and has been giving tours on the tram since it started.

Gary is a member and past President of the Tucson Radio Control Club and builds and flies radio controlled model airplanes.

Pat Donovan was born in Newport, RI in 1938. After attending one semester at Rutgers University and having been in the R.O.T.C, and being broke, he decided to enter the military.

In July of 1958 he entered Navigator Preflight Training as an Aviation Cadet at Lackland AFB, TX. Following preflight it was off to Harlingen AFB, TX for Navigator Training and then to the Advanced Navigator Radar Bombardment course at Mather AFB, CA. From there it was off to McConnell AFB, KS for B-47 ground school followed by flight school at Little Rock AFB, AK. Next came his first operational assignment, the 343rd Bomb Squadron, at Lincoln AFB, NE.

When Lincoln closed, Pat attended USAF Pilot Training in class 67-6. He volunteered for duty in Vietnam where he flew the C-7A Caribou in support of the Army including the Special Forces in the Mekong Delta and along the

Cambodian Border. Upon returning to the US it was to the C-141 School at Tinker AFB, OK and then to the 75 MAS at Travis AFB, CA. In 1978 Pat volunteered for the C-5A and attended the C-5A School at Altus AFB, OK. Pat then flew worldwide missions although mostly in the Pacific with monthly trips to Vietnam. When the Yom Kippur War broke out in 1973 he flew in support of the Nickle Grass operation and says that it was his most enjoyable war.

Following the C-5 tour he was off to be a Missileer in the Titan II system at Davis Monthan AFB, AZ. Pat was a Titan Crew Commander, Sector Commander, and Squadron Operations Officer before retirement in 1978.

After acquiring a degree in Aerospace Engineering at the U of A he went back into the C-5 business as a Pilot Instructor at Altus AFB, OK . He instructed for 14 years before returning to Tucson as a full time resident and Tram Driver at PASM in 2001.

Pat and his wife, Sherall, live in the Tanque Verde section of Tucson. They have two children and two grandchildren .



Don Campbell

Born on January 30, 1929 in Chicago, Illinois. He attended grade schools in Waukegan, Illinois and Long Beach, California before moving to Akron, IOWA (not Ohio) while he was in the seventh grade. Don graduated from Akron High in 1947 and joined the US Naval Reserve and took a

summer cruise aboard the USS Randall APA-224 out of Norfolk, Virginia. In the fall he entered Iowa State University. He was discharged from the Naval Reserve in 1950 to take advanced Air Force ROTC and in March 1952 he graduated with a degree in Forestry and a Commission as a Second Lieutenant in the Air Force Reserve.

Don served on active duty for two years at Selfridge AFB, Michigan, an AC&W Site near Armstrong, Ontario, Canada and Truax Field, Madison, Wisconsin as an Adjutant and Personnel Officer. He remained active in the Reserve and Air National Guard units in Michigan, New Jersey, Iowa and Nebraska and retired as a Lieutenant Colonel. Don's civilian career included work as a Forester for the Iowa Conservation Commission and in the Real Estate Division of various Corps of Engineer Districts. He retired from the Corps of Engineers Pacific Northwest Division, as Chief of Acquisition, in 1989.

Don began his volunteer service with the Pima Air & Space Museum in 1992 as a Docent giving school tours. He also gave tours of the Presidential plane and led adult tours at various times. He currently works as team leader with the Exhibits Team. He has over five thousand hours of volunteer time with the museum.

Don and his wife Dorothy also volunteer to help at special events. They have three grown children. They live in Tucson year round.

The Capitol Campaign

By: Dan Ryan

The Capital Campaign for the “Spirit of Freedom Hangar” is gaining momentum and Pima County has agreed that re-bidding the project in the early spring is a prudent measure based on the timing of the bid process directly following the Hurricanes in the Gulf Coast region. We will target for a construction start for early summer of 2006. For those of you that have already made contributions for the building project, thank you for your contributions. For those of you that are still contemplating a contribution consider this; with lead gifts from community leaders and members of our Board of Trustees, we are close to achieving our first milestone of matching the Pima County bond grant of \$1,000,000 by years end.

From the Space Gallery:

By: Howard Fox

COMING IN JANUARY 2006:

“THE PHOENIX MARS MISSION.” An introduction to the mission hardware, objectives, existing evidence supporting mission objectives.

“FOLLOW THE WATER.” An introduction to the existence of liquid water, water ice, and potentially habitable ecological niches around the Solar System.

Have you visited the
“Henry Dudley
Memorial Lending
Library” in the Ruby
Lounge???

Henry donated a great
collection of books
which you can read
there or take out.

Just remember to return
the books so others can
also enjoy them!!