

AirshowStuff

Magazine

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Space Shuttle Endeavour
Bombers Over SoCal
Red Flag 13-2 and 13-3
NAF El Centro Photocalls
Reports from the Field
and more!*



May 2013

AirshowStuff Magazine

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Cover Photo

ASM contributor Kevin Martini, strapped to US Army Golden Knight team member SSG Jared Zell, leaps from the Twin Otter jump plane during 'Tandem Camp' at the team's winter training ground, Homestead ARB. Photo courtesy US Army Golden Knights/SGT John Lopez. For more on Kevin's time with the team, see page 14.

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Mark Hrutkay

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We'd love to talk with you!

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GROUND

SEQUESTRATION'S IMPACT
ON 2013 AIRSHOW SEASON



Article by Ricky Matthews
Photo by Ryan Sundheimer


The 2013 airshow season is setting up to be like none we have ever seen before. Due to government mandated budget cuts, the 2013 Blue Angels and USAF Thunderbird schedules have been canceled, along with USAF and Navy Tac Demo performances and any other military support including static displays. Bases around the country have abandoned plans for open house events as they struggle to maintain even normal operations.

How did this happen? In 2011, Congress put sequestration into the Budget Control Act of 2011, to encourage lawmakers to reduce the annual deficit by 1.2 trillion before the end of 2012. If they failed to act, automatic budget cuts would kick in for the 2013 budget. When Congress failed to pass a budget, the cuts kicked in on March 1st of

this year. The military budget was slashed, and leaders immediately announced that they would end non-essential flying, suspend many defense contracts, delay construction/maintenance, and limit flying hours.

Even casual airshow fans know that the jet teams are the major draw that shows regularly depend on to bring in enough money from spectators and sponsors, and many shows have chosen to skip 2013 plans. As of press time, the current count of shows that have canceled due to lack of military or budget support is a whopping 42. This in turn is hitting civilian performers, some of whom make their living performing at shows, hard. Matt Younkin, who flies a Twin Beech 18, told AirshowStuff that he has lost 10 of his scheduled shows this year due to cancellations.

The International Council of Airshows has gone so far as to hire a

lobbying firm in an effort to present the dramatic impact sequestration has had on the airshow industry to lawmakers. Some industry professionals have attempted to organize letter writing campaigns and petitions to pressure representatives as well. Unfortunately, it seems that there is little hope for military support for airshows to be restored this year. The jet teams do continue to fly, but must use their precious few flying hours to maintain basic currency in the aircraft rather than practice routines. The Blue Angels have announced that some members of their team will be sticking around for another year since they did not get to fly this year. Both teams fully intend on flying their full show schedule in 2014. The USAF Thunderbirds are taking applications for 2014 performances and the Blue Angels are scheduled to release their 2015 schedule at the ICAS Convention in December. 



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NEED WE SAY MORE?

NOW SHOWING: SPACE SHUTTLE ENDEAVOUR



*Article and Photos
By Kevin Helm*

LOS ANGELES -- On October 30, 2012 the California Science Center (CSC) opened the doors of the newly built Samuel Oschin Pavilion to the public. During the next few years, visitors will be able to view Orbiter Vehicle 105 (OV-105), commonly known as the Space Shuttle Endeavour, up close. The temporary facilities currently house two exhib-

it spaces while the design and construction of the permanent Samuel Oschin Air and Space Center is under way.

Beginning in the main hall of the Science Center, the exhibit "Endeavour: The California Story" provides a grand introduction to OV-105 Endeavour. Wall displays tell OV-105's life story. They begin with the conception following the January 28, 1986 Challenger STS-51-L tragedy, continue with the "Made in Califor-

nia" construction montage which spans the growth from August 1, 1987 when the vertical tail arrived in Palmdale to May 3, 1991 with the introductory delivery flight departure. Photographs detail all 25 of Endeavour's missions to space flown during her working years, and a commemorative video loop chronicles the last mission during retirement, "Mission 26: The Big Endeavour", its final transport journey from the Los Angeles International

Airport to the California Science Center.

As visitors enter the exhibit, they're confronted with a venerable collection of artifacts. The strong smell of rubber permeates the air from the set of single use Michelin main landing gear tires. They are the very ones Endeavour relied on for the final 43 seconds of her last mission STS-134. Her landing was the second shortest of the shuttle program and had resulted in a small

brake fire. Visitors are also invited to touch the nose landing gear tires reused during STS-134 from the previous STS-130 Endeavour mission.

The galley, one of three fuel cells and the waste collection system (WCS) were removed from Endeavour's middeck for the exhibit. They are presented alongside video stations to explain the technology behind how astronauts eat, breathe and "function" in space. With an eye toward the younger, curious,

yet somewhat informed audience, the eight minute NASA TV "Space Potty" film explains the different WCS modes and attachments by visiting the ground based "functional" and "positional" WCS trainers at Johnson Space Center.

For the mission control wonks, the CSC went to great lengths to acquire the Rocketdyne Operations Support Center (ROSC) from the Canoga Park plant. It was donated by the Space Shuttle Main Engine (SSME) contractor and was completely reassembled on site. From the ROSC, engineers monitored the RS-25 SSME performance parameters real-time during all 135 shuttle flights and about 3,000 ground test firings.

Spectators can view a full launch sequence beginning at T-1 minute and ending at T+8.5 minutes, a compelling feature that puts you right at the heart of a real mission—almost. According to California Science Center Curator of Aerospace Science, Kenneth Phillips, the ROSC "screens display data that has been sanitized and presented to represent a notional launch blended with launch videos from flights of Discovery and Endeavour." The intent of the exhibit is to permit the public to better understand the visuals and data used by launch controllers during Endeavour's 8.5 minute flight to orbit, he said. Of course, actual RS-25 performance data is considered sensitive information.

Proceeding to the main pavilion, visitors are given their first glimpse of Endeavour up close and personal. Sitting approximately 12 feet off the ground, visitors can walk 360 degrees around as well as under the 147,000 lb. orbiter. Endeavour sits atop the 25,000 lb. Overland Transporter, which delivered all of

the previously built Space Shuttles from USAF Plant 42 in Palmdale to Edwards Air Force Base. She's stable on this perch, and state-of-the-art seismic shock isolators ensure her protection from earthquake damage by allowing 24" of lateral displacement in all directions.

Since Endeavour is in her final resting place, NASA, at the Science Center's request, performed very little post-flight work other than harvesting systems for future use and ensuring the orbiter was safe for public display. Thankfully for aerospace enthusiasts, there are many interesting scars and features

to be seen on the thermal protection system, which consists of different types of surface materials applied in various temperature regions that protected the orbiter on re-entry.

During Endeavour's final STS-134 mission, some of the over 20,000 black High-Temperature Reusable Surface Insulation tiles that cover the bottom and nose of the orbiter were damaged during launch. The damage was severe enough that one tile had to have a "focused inspection" by sensors on the boom arms of the Shuttle and International Space Station before

being cleared for re-entry. The imagery and laser scans showed that the damage site measured 2.43" x 2.95" with a maximum depth of 0.89". Analysis showed the aluminum structure below the damage would experience maximum temperatures of around 219 degrees Fahrenheit during re-entry, well below the 350 degree safety limit. This area and the other lesser damaged tiles can clearly be seen on the bottom of the orbiter. It's easy to notice the tile interior—white in color and visually resembling the consistency of Styrofoam.

Also during the STS-134 mis-

sion, Endeavour flew a boundary layer trip tile experiment on the port wing. A special tile with a .5" tall protrusion was mounted to transition the boundary layer from smooth, laminar flow to turbulent flow around Mach 19.5 and another tile with an embedded thermocouple was placed downstream to measure any increase in surface temperature. Both of these tiles are marked "INSTRUMENTATION" and are easy to identify.

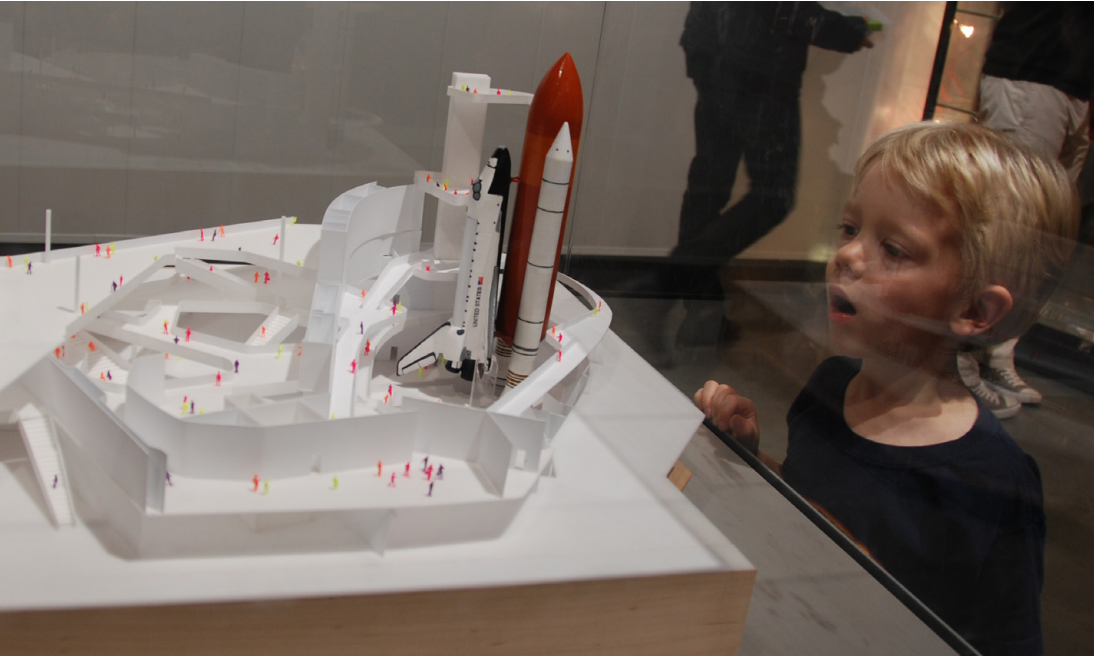
An RS-25 Space Shuttle Main Engine that was previously in Canoga Park is also on display in the main pavilion. It was pieced together for

display purposes from flight hardware and is generally representative of a Block I engine. The SSME's gimbal bearing, the part that connected the engine to the orbiter and allowed the engine and nozzle to move to steer, flew on OV-102 Columbia during the first five shuttle flights (STS-1 through STS-5). The nozzle flew aboard OV-99 Challenger during its first four missions (STS-6 through STS-8 and 41-B) and aboard Columbia during STS-32.


The three nozzles mounted on Endeavour herself are actually known as "replicas" reutilized from production nozzles that were used

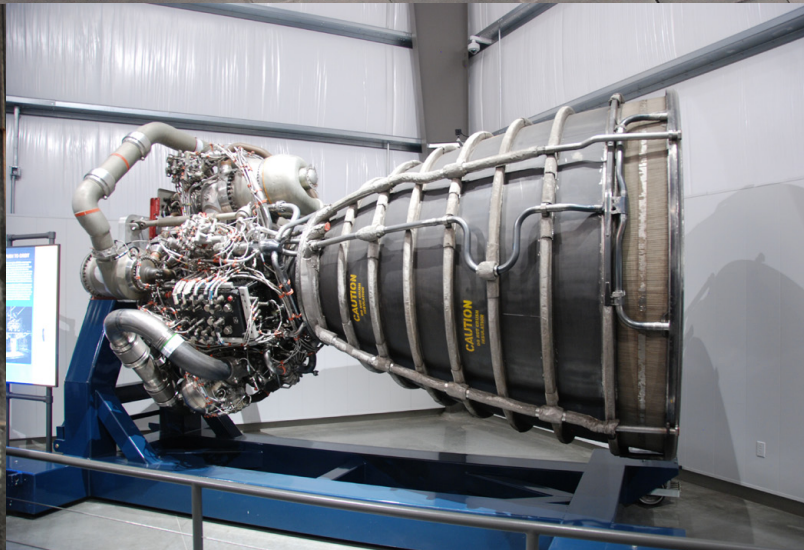
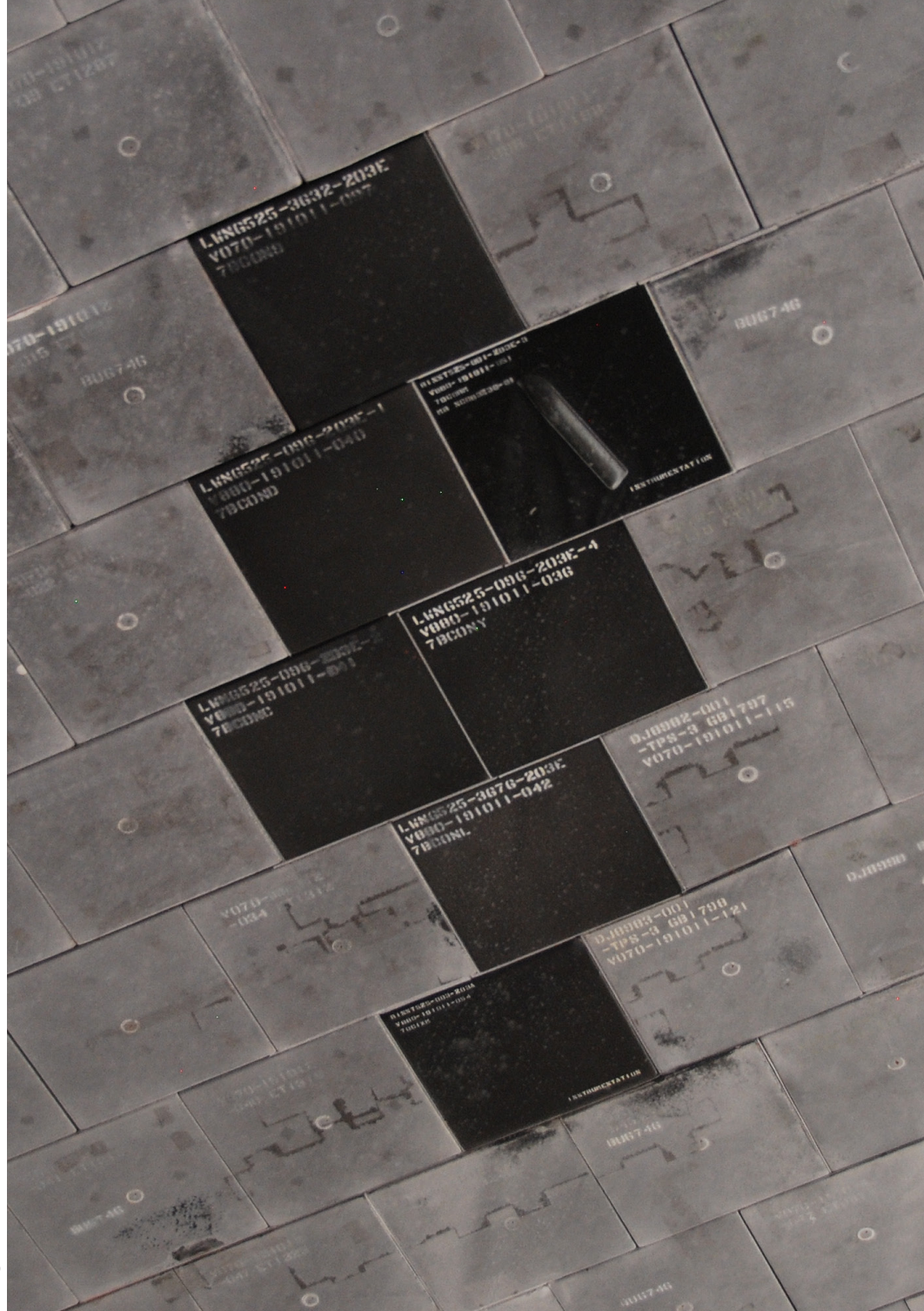
for testing purposes. This is due to the fact that NASA has kept all Block II SSMEs to use on future launch systems. Engine nozzle #1 (top) flew five missions prior to becoming a test specimen; three powering Endeavour (STS-54, STS-59 and STS-68), one aboard Discovery (STS-56) and one lifting Columbia (STS-58). The other two nozzles were test fired a total of 91 times.

Endeavour will reside in the Pavilion until 2017, when her permanent home in the Samuel Oschin Air and Space Center is built. The California Science Center has raised \$100 million of the \$200 million it needs



for the entire project, and fundraising efforts continue. It is planned to encompass 70,000 sq-ft of exhibit space, anchored by the Endeavor ascending skyward, mounted on a replica external fuel tank and flanked by two solid rocket boosters of both mockup and flight hardware lineage. Visitors will be able to walk under and around the towering 184 foot tall launch stack and ascend to multiple levels for amazing views of the half open cargo bay, the crew hatch and flight deck. At the uppermost point, visitors will behold the shuttle from above.

More than 1 million people have visited the California Science Center in the four months since the Endeavour exhibit opened, a considerable increase over the yearly average of 1.6 million visitors a year. The Endeavour exhibit remains free and open to the public and is worthy of an afternoon trip alone or with friends and family. Free timed entry tickets can be reserved ahead through the California Science Center box office for a small handling fee, and this is recommended. Visiting and walking underneath Endeavour is an intimate experience and available only for a few years before the final towering launch configuration display is assembled. 



Knights Away!

Tandem jump with the
US Army Golden Knights

Article by Kevin Martini





Skydiving. Some people consider it crazy, some consider it an amazing rush. Merriam Webster defines it as “The sport of jumping from an airplane at a moderate altitude and executing various body maneuvers before pulling the rip cord of a parachute.” Either way, I am about to find out for myself. It’s around 8:30 in the morning on a beautiful south Florida morning at Homestead Air Reserve Base as a large group of people are ushered into a tiny office trailer. There is just enough room to fit the 10 or so jumpers around a table, a television, and the handful of family and friends who have come along to support their loved ones. Waiting for us at each position at the table is a four page document and a pen. The room is full of the sounds of chairs dragging

against the linoleum floor, meaningless chit chat, and laughter. A lot of laughter. After a couple of minutes I recognize that it is a strained and nervous sort of noise. Filled with the kind of jokes, conversation, and laughter that only come from a mix of stress, nerves, and excitement. Can you blame anyone? In a matter of an hour we are all going to thrust our bodies out of a perfectly good airplane at 13,000 feet.

SFC Noah Watts, the tandem team leader, enters the room and stands in front of the group. A tall and fit man, he quickly commands the attention of the room without saying a word. “Good morning ladies and gentlemen, as you may already know, I am SFC Noah Watts” he begins. His cadence and delivery are distinctively “Army”, however

he presents each sentence with a natural sense of humor. Before diving into an instructional video, SFC Watts makes one point clear. “If you remember anything from this session, I want it to be this. Arch, Relax and Have Fun.” He says this again, only this time with a smile. “Arch, Relax and Have Fun.”

We watch the presentation video which consists of some exciting footage of various famous people who have had the honor of jumping with the Golden Knights in the past, broken up every minute or two with the expected warnings and legal mumbo jumbo. Once the video finishes, it’s on to the legal waiver sitting in front of each person jumping that day. As SFC Watts begins to go over each section I notice a glaze fall across the faces of some of those

in the group. I think everyone has sat patiently for just about as long as possible given the anticipation of what the near future brings. SFC Noah deftly picks up on this as well, and his words per minute increase to a level where I honestly believe a trained court stenographer would have a hard time keeping up. Nothing is being missed mind you, but I wonder in my head if he could recite this document in his sleep. “Sign here”, “Initial here”, “Print your name here”, “Have your neighbor witness and sign for you.” Five minutes and two pages in, I question if I am skydiving today or closing on a new house. We finish up, pass our completed waivers to the front, and are told that our next stop is the equipment room, where we’ll be fitted with the necessary gear. We are just about to get up, when a voice from the rear of the room cracks “Now honestly, how many of you can stand up without the chair coming with you?” The room erupts into laughter, but I have a sneaking suspicion that there are several in the group who are doing a mental double-take as they slowly stand up.

SFC Watts leads the group out of the room and starts across the 30 or so feet of open ground we need to cover to the tandem equipment room. It’s a bit like herding cats. As soon as the energized group is out in the open, they quickly fall into individual discussions, or find themselves looking up to watch one of the demo teams drifting down for landing. The tandem team has a schedule to keep, so SFC Watts does a good job getting everyone’s head out of the clouds and back on terra firma where they need to be. We enter the equipment room, and after a few seconds of waiting for our eyes to dilate from expo-



Kevin Martini



Kevin Martini



Kevin Martini

sure to the bright Florida sun, we are greeted by the pleasant smile of Liz Hoffman as she is engaged in a sort of rhythmic dance with her arms repacking a parachute. Due to the fast paced schedule a full day of tandem jumps demand, the individual members of the team simply do not have the time to repack their own parachutes. That job and responsibility falls squarely onto Liz. A job that demands 100% attention to detail combined with being able to perform said job masterfully quick. You see, not only are everyone's lives completely in her hands as she packs each parachute, but for everyone to get the chance to make a tandem jump before the sun goes down, Liz has to pack each parachute quickly.

A few moments pass before the rest of the tandem crew enters the room. Smiling and in good spirits, they begin to call out the names

of the jumpers they have been assigned to. Once located, each group begins a casual banter that includes the requisite introductions. I start to understand why Liz is required to move so quickly, because the tandem team moves just as fast equipping each jumper with their kit. Each person is given the gold and white jump suit, helmet and goggles, gloves (if desired) and of course a harness. I glance over at SSG Jon Ewald who is working to fasten and adjust the harness on a young woman who has a deer in the headlights look all over her face. Clearly she's nervous, but a few calming words from SSG Ewald, followed by a couple of well-timed jokes puts her at ease. You can tell this isn't the first time that any of the team has had to deal with fear and anxiety, and they know just what to say.

It's only a matter of 15 minutes

before the first group of four jumpers is ready to go. They are led outside, and into the waiting cargo vans along with their respective tandem instructors and videographers. Those of us in the later jump groups can only look on with jealousy and anticipation as the two vans pull away on their way to the airfield and the awaiting jump plane. Some choose to pass the time sitting in quiet reflection. Some meander about chatting with one another, while others stand in the tough Bermuda grass craning their necks skywards, watching either the Gold or Black demo teams practicing, or looking for the small black dot of the Twin Otter flying high above. No matter which they choose, the time passes slowly. Obviously Homestead ARB does not defy the space/time continuum, but standing on the ground waiting for your turn to go feels like you've awakened early on Christ-

mas day. Knowing that you have another hour before you can wake your parents and begin the festivities. All you can do is lie there, stare at the ceiling, and wait.

After what feels like two hours, we hear the radio crackle to life with the sounds of Otter pilot CW5 Kelley Caudle announcing they are inbound to the target. "Roger" replies SFC Tom Bovee the landing zone safety officer, "You have a hot target. Winds are at two five zero at five to ten knots." The faint drum of the Twin Otter can be heard, and I finally find the little black dot in the vast sea of blue sky. Moments later, I spot even smaller black dots being left behind by the plane. I watch as the team and their passengers fall from the sky. The large white drogue chute is easy to make out against the Florida sky. Squinting a little, I am actually able to make out the silhouette of the solo videog-

rapher falling along with the tandem jumpers. The speed at which they are falling is perceptively high, made even more obvious when the tandem jumpers deploy their main parachute. The solo videographer continues to fall away from them so quickly I hear myself verbally say "WOW" without intending to do so. A few seconds later, I hear the faint WHOOSH sounds as each of the parachutes fill rapidly with air. All jumpers are out and safely under canopy.

In no time at all, the solo videographers start to land after making several high speed spiraling descents. They need to get on the ground quickly so that they can in turn film the landing of their assigned tandem pair. Next up are the tandem groups, stacked one on top of each other in the sky, like the spiral shaft of a parking garage. High above me, the screams

of exhilaration come wafting down. High pitched screams, hoots, and woooooo's make their way down to the landing zone as the parachutes get larger and larger in the sky. Family members and friends on the ground begin to respond with cheers and applause of their own, as one by one each tandem jumper come in for a safe and soft landing in the grass. Several members of the ground crew rush to each person to quickly spill the air from the parachute, as well as to share in the excitement that each person has just enjoyed.

With little time to spare, the team members quickly assist the jumpers to their feet and listen to them regale how amazing the last 15 minutes of their lives were. The tandem instructors hoist their parachutes over a shoulder and walk with a purpose towards the equipment room and Liz's waiting hands.

All the while talking, laughing, and of course, high fiving the jumpers who just went along with them. Once into the equipment room, they grab a freshly packed parachute, the next jumper they are assigned to, and begin the process all over again. At first I expected it to be methodical and repetitive, however I was pleasantly incorrect. Each member of the team took the same time and care on the next group of jumpers as they did with the first. SSG Rich Sloan approaches me and introduces himself. He helps me select a jump suit, finds a helmet that fits my abnormally large head, and then assists me into my harness. The reality of what I am about to do begins to set in, and I am reminded of some of the faces of those I saw go before me. The harness weighs quite a bit more than I expected, and I am actually reassured by this.

SSG Sloan heads off to help others when I am introduced to the second person who will hold my life in his hands this day. "Kevin?" asks SSG Jared Zell as he walks up and shakes my hand. We exchange pleasantries as he begins to tighten and adjust my harness. I chuckle out loud and comment "hey...at least buy me dinner first" because a few key adjustment locations feel as though I'm being fitted for a tuxedo. SSG Zell laughs politely, clearly this is not the first time he has heard that one, but I appreciate the laugh, after all, it was a pretty dismal joke. SSG Zell moves quickly and competently, and before we have time to talk very much more he is finished. The harness has now gone from reassuring, to heavy and tight. Next I am introduced to SGT John Lopez, the videographer assigned to my jump. He escorts me

outside into the sun where we chat for a minute or two. He explains that he will be falling with us in the sky, taking pictures and video of my free fall, all of it in high definition glory. We then move into a recorded video interview. One question, "do you have anything to say to your family or loved ones?" gives me pause. After an uncomfortable stare into the empty camera lens, I could only think to say "my last will and testament is that my wife gets everything." We both chuckle, and wrap up the interview because it's time to load up into the vans.

After a five minute ride over to the airfield, we exit the van and then pause on the flightline. Each member of the Knights checks, and double checks each other's gear. Sitting off in the distance I notice something bright and shiny, and my attention is drawn off of the gear

check. The team had just taken ownership of a brand new DHC-6-400 Twin Otter. It was sad to see it sitting tied down, because the thing just looks like it wants to be up in the air. My hopes of getting a chance to jump from it were dashed as it was explained that the pilots were still in the process of going through the required check rides and supplemental training that comes along with a new aircraft and more importantly, a new glass cockpit. In almost perfect timing, the Otter that I will jump out of begins to start, and a minute or two later, taxis over to where we will board. We are then escorted in pairs, each jumper with their respective tandem instructor, over to the plane. We board, strap on our seat belts and before you know it, feel the power of the Otter's twin turbo prop engines pulling us down the runway and into the air.

My ears pop several times, and the ambient air temperature drops as we ascend higher and higher in to the sky. The mood in the plane is jovial, but also tense at the same time. The loud drone of the engines makes it hard to hear one another so conversation is a struggle. At around 10,000 feet SSG Zell announces that it's time for me to be attached to him, and I'm invited to do something that I have no adult memories of. I'm asked to sit on another man's lap. It's humorous and every bit as awkward as you can imagine. Next I hear words that I honestly never thought I'd ever hear another man say to me. "I have you buckled in at the hips, but now I need you to lean back into me." I chuckle, smile an awkward smile towards SGT Lopez as he snaps a quick picture, and then lean backward into SSG Zell. He attaches

the main D rings, and then tightens everything down. At this point I can almost feel each breath, and I swear we're so attached I can even detect his pulse. I only hope he can't feel my leg bouncing up and down with excitement and nerves.

We're only a few minutes away from the big plunge, and SSG Zell yells in my ear that it's time to go over our exit procedures. We practice where I need to hold my hands, and the ever important 'Arch, Relax, and Have Fun'. I go over this another couple of times in my head, trying to make sure that I don't screw this up. Before I know it, we're inbound towards the landing zone, and are given a hot target. The exit door slides open, and the pair who will be jumping first stands and makes their way over to the door. I hear a few muffled shouts and then in an instant they are gone. SGT



Kevin Martini



Kevin Martini

Kevin Martini



Kevin Martini



Lopez, SSG Zell, and I are up next. We have to perform a combination crab/duck walk up to the precipice, stopping with my toes dangling over into the void. I can feel the power of the windstream as the Otter pushes through the 13,000 foot air at around 100 MPH. From behind, I hear SSG Zell screaming over the wind "Ready? One..... two.... and...." during which time we rock forward at the one count. The majority of my body weight dangling in the air. Then backwards on the two count, safely back inside the plane. I should stop and explain something here. They may say this procedure is so you and the videographer can be sure to exit at the same time, however I'm convinced this little maneuver is there simply to A, scare the crap out of you, and more importantly B, give the tandem instructor the momentum he may need to make sure I get out of the plane, in case fear paralyzes me. Thankfully this day, fear was not the victor.

I hear the three count and we plunge forward, and even now, I'm having a hard time trying to find the right words to explain just what happened next. I've built this jump up in my head countless times, all the while I kept imagining that it must feel like the first drop of a roller coaster. The way your stomach flies up into your throat. Or like the lightness sensation you get when driving a car over a parabolic hump in the road. I couldn't have been more wrong. It's like all the flying you've ever done in your dreams. No sudden sensation of falling, no uncomfortable feeling of imminent death, you're just there...simply present in the atmosphere. The only indication of movement is the sound of rushing wind flying by my

ears, or the fleeting vision of the Otter climbing higher and higher away from me (reality is it's not climbing, I'm falling!) That all lasts for a split second before I think, "Oh crap... don't forget the arch! The one thing they said not to forget...hurry!" as I arch my back hoping it wasn't too late. All of these thoughts went through my head in what felt like 2 minutes, however a quarter of a second was more like it. Of course I wasn't too late with my arch, and a second later I feel the slight tug of the drogue shoot slowing our decent. SSG Zell slaps me on my shoulder, letting me know that I could release my hands and that I was now free to move about the cabin. What follows next was simply sheer exhilaration. Freedom.

Awesome. Rushing to the ground at 120 MPH simply feels like floating. I was screaming, what in my head had to be very manly guttural noises, mixed in with "heck yeah" but I have a feeling that SSG Zell's ears might have been full of the annoying screams of the Geico pig commercial. Thankfully, the rushing air prevented him from either confirming or denying exactly what sounds were made. During our free fall, videographer SGT John Lopez was orbiting around Jared and I, snapping pictures, as well as documenting this ride in HD video. Even though the only sound heard in free fall is the wind, you can clearly make out my mouth screaming "THIS IS AWESOME!! WOOOOOOO". SGT Lopez's mastery of control in free

fall was extraordinary. Effortlessly moving left or right, up or down, wherever the creative desire for "the shot" took him. At one point he rolled over onto his back and I had to chuckle to myself, in between the manly yells, that he appeared to be relaxing in a reclining chair made of nothing but air. All too soon I begin to feel the drag induced by the main parachute being deployed and I brace myself. Just like the feeling of free fall, I've built this moment up in my head, expecting a sudden and jolting stop. I was once again incorrect. The deceleration was dramatic; however it was smooth throughout approximately 5 seconds. The only pain or discomfort I feel comes from the harness taking up my weight. It's a

fact of life that most harnesses pinch in areas that most folks wouldn't appreciate very much, especially us men. To say it was painful would be over dramatic. It was unpleasant, and I can't say I enjoyed it, but I also can't say that it "hurt". Once under canopy I can fully appreciate the view. The chaos of free fall is quickly replaced with the serenity of canopy decent. I am able to converse with Jared easily at this point, but most of the time was spent simply enjoying the ride. Beautiful white puffy clouds to the left and right, F-16s parked on base, the other members of the tandem team descending both above as well as below us. SSG Zell makes gentle swooping right, and then left turns. All of which ensure proper spacing

from other members of the jump, but that doesn't matter to me. I'm convinced he's doing it simply for my sheer enjoyment, and I love every second of it. A few times the need to descend rapidly is presented, and we enter into a tight spiraling turn. Centripetal force draws our bodies parallel to the ground, and we dump some excess altitude in a hurry. This force not only shifts our perspective of the world, it induces a higher G-load than I anticipated. I feel my body shift deeper into the harness, once again bringing with it the discomfort of the leg loops. Along with the G-load, a second sensation that I didn't expect has made its presence known. I should preface this by saying I'm not prone to motion sickness. I do




Courtesy US Army Golden Knights



not get queasy or dizzy on airplanes (both large and small) or on roller coasters. However, about the time we finished our first spin, in came the twinge of dizziness. It never got bad, and I know if I asked, SSG Zell would stop, but I didn't want him to. We finish our second revolution and Jared rolls us out of the spin, once again on a slow comfortable descent. I think it took my eyes and ears about a full second to sync

back up with the rest of my senses. We begin our approach to the landing zone, and I can hear the people on the ground hollering up to me. Even without really knowing one another there was a sense of camaraderie as I hollered and applauded back. Looking ahead to where we would land, I could see SGT Lopez standing on the ground, his hand waving largely over his head. The tandem jumpers need

to land near their videographer, as video of a landing 100 yards away is nowhere near as exciting and I feel SSG Zell click his heels together in acknowledgement of SGT Lopez's signal. We turn right from base, and onto final approach, gliding nice and easy towards the soft grass. "Legs up!" I hear SSG Zell call from behind and I lift my knees up to my chest. We're getting closer to the ground, and everyone else, moving forward at a sprinting pace when I hear Jared call out "Legs out!" At this point all I had to do was extend my legs straight out from me, and keep my heels up as high as I could. I must have done this right, because only a second or two later we were sliding on our butts across the ground as if we were sliding into second base. Members of the team run up, pulling cables to spill the air from our parachute, as SSG Zell works quickly to disconnect himself from me. I'm back on the ground, standing on my own two feet and all I want to do is go again. SGT Lopez comes up with his camera to ask how my ride was and without thinking I give him a high five. Damn the camera man, I'm excited! We conclude the camera interview, grab our assorted gear and start walking over towards the equipment room. SSG Zell and SGT Lopez have to drop their gear, grab a fresh parachute and a fresh jumper and go do it all over again. I enter the room and in a few quick minutes remove the harness, helmet, and jump suit. I steal a sip of water from the drinking fountain, grab my camera, and head back outside just in time to see the next group load into the vans and pull away. I look at them, look up at the sky and find one emotion growing slightly under the excitement and adrenaline. Jealousy. 

BOMBERS OVER SOCIAL



Article by Christopher Roberts





Eric A Rosen

The roar of radial engines was very prominent over Southern California in mid-March, as two separate bomber tours made stops in the region. The first to swing through was the Commemorative Air Force's AirPower History Tour, which showcased their B-29 Superfortress "FIFI", the only flying example left in the world. This tour was followed up by the Liberty Foundation's Memphis Belle B-17 tour.

The AirPower tour flew into San Diego's Brown Field on March 11. Accompanying FIFI on this leg of tour was the P-51 Mustang "Man O-War", C-45 Expeditor "Bucket of Bolts", and an SNJ. The general public could book a flight on any of the four aircraft, and prices ranged from \$65 on the C-45 to \$1495 for the bombardier seat on the Superfortress.

One San Diego resident, Re-


tired USAF Brigadier General Robert "Bob" Cardenas, was one of the lucky few who got to experience a ride in FIFI. However this was not Cardenas's first ride in a B-29. In fact over 65 years ago Cardenas was the pilot at the controls of one of the most famous B-29 flights in history. On October 14, 1947 he piloted a B-29 that dropped Chuck Yeager in the Bell X-1 to the first manned supersonic flight. This was the first

trip into San Diego for FIFI in recent memory. After San Diego the AirPower tour made stops in Palm Springs, Camarillo, and Burbank.

The next tour to fly into the region was the Liberty Foundation's Memphis Belle tour. The tour had last visited San Diego in February 2010 with the B-17 "Liberty Belle". Sadly in 2011 Liberty Belle was forced to make an emergency landing in a field outside Chicago,

Illinois. The aircraft sustained little damage during the forced landing but the fire which caused the landing burned out of control and consumed most of the aircraft after the local fire department refused to enter the field to extinguish it.

The Liberty Foundation turned to another B-17, "The Movie Memphis Belle", to continue the Liberty Tour, while Liberty Belle is being rebuilt. The Memphis Belle on tour

is not the original Memphis Belle, which completed 25 missions with the 324th Bomb Squadron in WWII, but it was the aircraft used in the 1991 movie of the same name. The Belle made a stop into El Cajon's Gillespie Field, just east of San Diego, on March 23. While there, guests could get rides and do free walk-through tours. Other California stops following San Diego included Long Beach and Burbank. 



NAVIGATOR CAPT. C.B. LEIGHTON

BOMBARDIER CAPT. VB EVANS

The Movie

Memphis Belle

NAVIGATOR CAPT. C.B. LEIGHTON
BOMBARDIER CAPT. VB EVANS



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NAF EL CENTRO PHOTOCALLS

Article and Photos by Eric A Rosen

The quiet lassitude of a warm and sunny October day in the Imperial Valley of California was disrupted by the overpowering sounds of afterburners, prop wash, and jet noise. At 42 ft below sea level, it is certainly a unique location for a naval base. Originally opened in 1942 as a Marine Corps Air Station, it was used to train many Marine aviation squadrons for deployment to the South Pacific during World War II. By 1946, MCAS El Centro was decommissioned and the Navy took

over the base as a Naval Air Station where it was used primarily for aircraft storage, gunnery, and rocket training. In the following year, the Navy made Naval Air Facility El Centro a permanent installation.

With good weather occurring over 300 days of the year and plenty of wide open space in which to practice, plus limited non-military air traffic and multiple bombing ranges in the area, the base operates by hosting active and reserve aviation units of the Navy. NAFEC

provides training from “touch and go” simulated carrier landings to practice ordnance delivery, including air-to ground bombing, rocket firing, strafing runs, and dummy bomb drops. Because of NAFEC’s exceptional location, it is known to every naval aviator and plays a crucial role in their training. The number of flight operations averages 200 per day and 65,000 annually.

In 1967, the Blue Angels began using NAFEC as their winter training base. Starting every January, the





team arrives from its home base of NAS Pensacola in Florida to prepare training for the following airshow season. During their two month training, the Blue Angels team performs up to two flights a day as they learn and refine the demonstration routine for the upcoming airshow season.

Toward the end of Blue Angel training, the Public Affairs Office (PAO) on base hosts a photocall for a select group of aviation photographers from several aviation forums including Aviation Photographers of Southern California (APSoCal) and Arizona Aviation Photographers (AzAP) to get up-close and photograph some of the Navy's aircraft arsenal in action, performing daily operational training. El Centro is a four-hour drive from Los Angeles, so I decided to arrive early in the morning to catch some launches and recoveries before we were allowed on base. This afforded me a grand opportunity to preview which squadrons and aircraft types were being hosted later that afternoon.

I'm glad I arrived early because there was a plethora of squadrons and different types of aircraft on base this year. I tried to catch the British RAF Lynx and Merlin helicopters but they were both camera shy. The fixed-wing aircraft visiting

for training at the ranges in the surrounding area were T-45 Goshawks from VT-23 "The Professionals" and VT-22 "Golden Eagles". There was also a mixed detail of legacy and Super Hornet F-18s of VFA-106 "Gladiators" from NAS Oceana, two detachments of US Marine F-18 squadrons from MCAS Beaufort VMFA-115 "Silver Eagles" and VMFA (AW)-533 "Hawks", and EA-6B Prowlers of VAQ-129 "Vikings" from NAS Whidbey Island.

From the moment we arrived on the field, the flying action kicked into high gear. A KC-130J from MCAS Miramar's VMGR-352 "Raiders" was beating up the pattern with six touch-n-go passes. In between passes, T-45 Goshawks from VT-23 headed out on training flights. After departure, some would circle around the field and perform simulated carrier landings. Others would fly off for other training scenarios. The KC-130J crew finally finished their practice touch-n-go's and returned to MCAS Miramar. The next set of aircraft to start their training routines included multiple F-18s from VFA-106 with touch-n-go simulated carrier landings. They would take off in singles and in formation. Some of them were even carrying BDU-33 practice bombs for range training. The groups of photogra-

phers gathered that day had hoped for a photo opportunity of the EA-6B Prowlers taking flight along the runway. We had seen them in the morning beating up the pattern for quite a while and were wondering if they would fly during the photocall itself. As they taxied out to the runway, the groups were ecstatic to see them so close as they lined up on the runway and took off in sections.

As it happened that day, the two detachments of Marine F-18s from MCAS Beaufort were finishing

their training cycle at NAFEC. The final cycle of their training included dropping live ordnance, characterized by yellow stripes on the munitions. The payloads varied widely, with all load-outs geared toward close air support, which was the focus of this training evolution. During morning launches, they carried CBU-99 Cluster Bombs, also called the Mk-20 Rockeye II, and MK-77 firebombs, or Napalm canisters. During the time of the photocall we observed several different pay-

load versions including 5 inch Zuni rockets, 500 lb JDAMs (GBU-38s), and 500 lb Paveways (GBU-12s). A few of the aircraft were equipped with the AN/AAQ-28(V) LITENING targeting pod and Mk-80 series general purpose bombs. To be able to photograph several aircraft loaded with live ordnance during a photocall event when normally we would see empty racks or the small BDU-33 bombs was quite a treat. Apparently, we just happened to be at the right photocall at the right time,

since I have never had a chance to photograph these before at any previous photocall events. In addition, a D-model Hornet from VMFA (AW)-533 was outfitted with the Advanced Tactical Airborne Reconnaissance System (ATARS), a system for image acquisition, data storage, and data link used by the United States Marine Corps. This is a pretty rare modification as only 18 aircraft in the Marine Corps are fitted with this set-up and they are only used by the all-weather squadrons.







More recently, myself and other photographers from the same groups returned to NAF El Centro for a February photocall which included a Blue Angels over-the-field practice session before the start of the airshow season. Some individuals arrived early to photograph the morning practice of the Blue Angels from outside the base. After the Blues finished up their morning flight, the base opened up to its normal training activity. Initially, the

skies started out bright and clear for the morning practice. Before being allowed on base, we caught a C-2 Greyhound from Fleet Logistics Squadron (VRC-30) "Providers" practicing several simulated carrier takeoffs and landings. Before long, some clouds started forming in the skies around the base, adding some dramatic background scenes later as the Blues flew their afternoon demonstration.

Having been given permission to

come aboard base, we were given a safety briefing by PAO Michelle Dee and her deputy, Kristopher Haugh, who would be accompanying us out on the field. Kris briefed us on the squadrons we would see in training that day, and it turned out to be a very short list. This gave everyone the impression that it would be a very long day with little activity.

By the time the Blue Angels returned for their afternoon practice, the skies that had been filled with

nice puffy white clouds earlier had changed to an ominous grey. Commander Thomas Frosch, Blue Angel #1, called for the four-ship diamond formation to initiate the practice routine by throwing on full afterburners as they took off down the runway. Shortly after the diamond formation cleared the field, the two opposing solos took to the skies and joined in the practice. All the while, the skies kept getting darker and more ominous. With all the differ-

ent angles and maneuvers the Blues exhibited during their afternoon practice, it certainly made photography a bit difficult in such contrary lighting. As soon as the Blues finished their demonstration practice run and released the field back to normal flight operations, we headed out to the other runway for the rest of the photocall.

At the briefing, it was mentioned that both EA-6B Prowlers from VAQ-129 "Vikings" of NAS Whidbey

Island, Washington and T-45C Seahawks from Training Wing 1 (TW-1) "Eagles" out of NAS Meridian, Mississippi were there for training. The Vikings were at NAFEC for to conduct field carrier landing practice (FCLP) training. The runway is painted similarly to an aircraft carrier deck with the exception of being 10,000 feet long by 200 feet wide, compared to the actual deck dimensions of only 700 feet long by 100 feet wide. The TW-1 pilots were





out for flight and range training using blue Mk-76 practice bombs. Throughout the day, Goshawks and Prowlers would take off, land, or perform a few touch-n-go's. This is a very standard sight to see at NAFEC. Suddenly, the airspace around NAFEC became quite busy as several other aircraft entered the pattern around the base and did touch-n-go take off and landings.

There was a Boeing E/A-18G Growler from VAQ-129, an F/A-18E Super Hornet from VFA-86 "Sidewinders" out of NAS Lemoore, an E/A-18G Growler from VAQ-136 "Gauntlets", as well as several other Hornets from VMFAT-101 "Sharpshooters" out of MCAS Miramar. The Sharpshooters had four aircraft visit; a T-34C Mentor, two standard F/A-18C Hornets and an F/A-18D in a special paint scheme. This special paint scheme, known as the 'Medal

of Honor Bird', has been painted to honor four Medal of Honor recipients, two US Navy sailors and two US Marines. The paint scheme is all white with green trim and lettering. On the intakes of the aircraft is the citation for the Medal of Honor and under the canopy are the names of the recipients. To see this particular fighter jet was nothing short of spectacular. Unfortunately for us, that turned out to be a one-shot deal. Though everyone was a bit disappointed that it did not make any more passes, it was still a very pleasant surprise for the aviation enthusiasts since it presented a grand opportunity to photograph and see it.

Three MV-22 Ospreys also appeared, one from VMM-163 "Ridge Runners" and two from VMM-363 "Lucky Red Lions"; both squadrons hail from MCAS Miramar. The two




VMM-363 Ospreys arrived for a gas-n-go and then taxied out toward the runway, with one implementing a short takeoff on the taxi way whereas the other one turned on the runway and executed a short rolling takeoff. Let me tell you, the

rotor wash from an Osprey is pretty potent. That was my first experience so close to an Osprey and it nearly blew me over. Being out along the runway is a very exclusive experience. With the EA-6B Prowlers rolling by with their

two Pratt and Whitney J52 turbojet engines, an intense feeling of heat and power slams through you like a freight train. Nonetheless, it is quite a distinct feeling from what you are hit with when an F/A-18 Super Hornet with its two General Electric F414 turbo fans in full afterburner rolls by on takeoff. That kind of power thumps heavily in your chest and has the feeling of turning your insides into jelly. If you are not ready for all that force, you can easily be blown off balance. Even still, since it was a bit chilly out there that afternoon, this was a welcome sensation.

Unfortunately, the weather did not cooperate this year for the photocall, and the skies turned a bit gloomy as the clouds thickened up throughout the day. The greatest challenge photography-wise turned out to be a phenomenal yet fleet-

ing 15 minute window of the most intensely high contrast of silver linings and dark grey clouds. At least it was not the completely washed out or uniform grey look that the skies can become, and it did create some wonderful texture and definition to the clouds. All in all, it was an interesting day for photography at NAFEC, to say the least. Initial expectations were low after the Blue Angels flew, but you never know what will turn up at NAFEC.

I would like to thank the entire staff of NAFEC especially Michelle Dee and Kristopher Haugh of the Public Affairs Office and our sailor escorts, AC2 Nicholas Sanchez, MC1 William Larned from Navy Region Southwest, MA3 Jordan Reckmann and MASN Oronde Vassell. You guys know how to choose a grand opportunity for us passionate aviation photography groups. 

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RED FLAG

13-2 / 13-3



Article by Eric A Rosen
and Christopher Roberts

Multitudes of military aircraft flying over a 12,000 square mile airspace simulating air-to-air and air-to-ground target acquisition, air combat, and attack formation. This is the Nevada Test and Training Range (NTTR), the largest contiguous

air and ground space available for peacetime military operations. The NTTR is the training range for a military exercise held by the US Air Force called Red Flag. Hosted by the 414th Combat Training Squadron, the formal designation for Red Flag based out of Nellis AFB is a realistic aerial combat training exercise that has trained various aircrews from

all four branches of the U.S. military and its allies for years.

Red Flag can trace its roots back to the 1970s, when the United States Air Force experienced a decline in its air-to-air success rate during the Vietnam War. Before Vietnam, the exchange ratio (the ratio of enemy aircraft shot down to the number of friendly aircraft lost

to enemy fighters) between enemy and U.S. losses had been a highly satisfactory 10 to 1. Between 1965 to 1972, the overall exchange ratio was down to about 2 to 1 in favor of the Americans. The Air Force instigated a full-scale investigation and analysis project called Red Baron II which showed three sobering facts about the USAF aircrews: the enemy frequently caught them by surprise, they were inadequately trained for the mission they faced, and they were not fully informed about the enemy. Moreover, the pilots who had relatively little fighter experience were at greater risk of losing; a pilot's survival rate in combat increased dramatically after they had completed 10 missions. As a result of their analysis, Red Flag was implemented for the first time in 1975 with a radically different approach to training fighter pilots compared to previously utilized training scenarios. Its goal is to train the U.S. Air Force "as it would fight."

Typically there are between 4-6 exercises a year hosted by the 414th combat training squadron. They are designed to sharpen aerial combat skills and provide realistic training in the combined ground, air and electronic threat environment—similar to anything found in the modern battlefield around the world. When units deploy to Red Flag, they must perform all aircraft maintenance and be as self-sufficient as they would during a wartime environment. At the first Red Flag ever held, there were 37 aircraft and 561 people participating. Today, an average exercise fields as many as 250 units and more than 750 aircraft including fighters, bombers, refuelers, airlifters, rescue, airborne warning and control system, and electronic jammers. Since the initiation of Red



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Flag training, over 28 nations have participated with more than 300 different types of aircraft.

Most of the units deployed to a Red Flag exercise are part of what is called the "Blue Force" (friendly). They use a variety of tactics to attack targets such as simulated airfields, missile sites, tanks, bunkered defensive positions, parked aircraft, mock airfields and vehicle convoys. These targets are defended by the "Red Force" (enemy) which utilizes electronically simulated anti-air-

craft artillery, surface-to-air missiles, and electronic jamming equipment. Additionally, the Red Force aggressor group flies F-16 and F-15 aircraft from the 57th Wing's 64th and 65th Aggressor Squadrons to emulate opposing aircraft like the MiG-29 Fulcrum and Su-30 Flanker. The pilots from these squadrons have been trained to closely simulate known enemy tactics and the aircraft are painted in the various camouflage schemes of potential adversaries.

A typical Red Flag mission day sees two sets of missions: one during the day and one at night. The first aircraft to leave are the tankers and AWACS, followed by a non-stop parade of afterburners. A single mission can have as many as 120 launches. After the last launch departs, the first arrivals start to land. In addition, the standard Nellis traffic continues to fly, including A-10s participating in Green Flag and the USAF Thunderbirds winter training flights.

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Red Flag 13-3, held in February 2013, added another layer of complexity to the already intense training environment. This training cycle focused on the use of electronic warfare, specifically Enemy Air Defense Suppression and Intelligence. This was noted by a few of the particular aircraft that contributed to the exercise, including EA-18G Growlers from NAS Whidbey Island VAQ-135

“Black Ravens”, EA-6B Prowlers from MCAS Cherry Point VMAQ-2 “Death Jesters”, F-16s from Shaw AFB 79th Fighter Squadron “Tigers” among several others. One particular unit participating in the exercise was the 55th Electronic Combat Group from Davis-Monthan Air Force Base, AZ. This unit had two EC-130H Compass Calls, which played a unique role in the exercise. They flew for both

the Blue Force and Red Force. As a friendly, the aircrews practiced their skills of working together with other friendly assets. As the enemy, their role was to degrade the coalition forces abilities by jamming communications, something friendly forces do not normally receive in training. In addition, members of the 526th Intelligence Squadron were also fully integrated into all aspects of the exercise in real-time. This marked the first time the IS had a bigger chance to train, learn, fight, and win alongside their counterparts in combat.

Some allied units were also incorporated into the Red Flag 13-3 exercise. Two of the Royal Australian Air Force E-7 airborne early warning aircraft for command and control, which are similar to the USAF Boeing E-3 Sentry, flew as part of the practice. The United Kingdom par-

Joseph D Ahmad



Joseph D Ahmad




Joseph D Ahmad

ticipants from the Royal Air Force comprised of both Tornado GR4 and Typhoon FGR4. The Tornados played a ground attack role while the Typhoons participated in an air supremacy role.

Red Flag was developed from one grand idea to many ideas over several years since its inception in 1975. It creates an exceptional opportunity for the aircrew units of the US Air Force, the Army, the Navy,

and the Marines to get a better understanding of the battle space and providing targeting, so that the aircraft can be effective in its mission. Its intense model allows for effective and realistic training against a realistic threat to test military hardware and tactics, and has been so successful that there are other “Flag” exercises, such as the International Maple Flag hosted by the Canadian Forces, designed to benefit other

commands and air forces. It is seen as one of the best examples to train today’s pilots and aircrew to be as adaptive for any military threat now and in the future.

Many thanks go out to the amazing service men and women at Nellis AFB, and especially to Airman First Class Timothy Young, Senior Airman Jack Sanders, and the rest of the Public Affairs Office. 

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Coming next issue:

CHINO!



REPORTS FROM THE FIELD

We have some of the best airshow photographers helping us bring you amazing photographs and informative reviews from airshows all over North America and even the world. The following pages are stuffed with this outstanding coverage of recent airshows and aviation events.

If you would like to see your own photos and reviews here, just contact us and ask how to contribute. The only requirement is a passion for aviation!









TICO Airshow - Titusville, FL

Article and Photos by Mark Hrutkay



TICO (short for the Titusville Co-coa Airport Authority) is THE warbird show on the Space Coast of Florida, presented annually by the Valiant Air Command. The show holds the reputation as being the oldest warbird show in the country, hosting their 36th show this year.

While many shows this year will go without a jet team performance due to sequestration (see page 6), TICO lucked out. Long before the budget issues arose, the airshow management made some fairly complex moves to change the dates of the show to assure an appearance by the Thunderbirds. As a result, the USAF Thunderbirds put on their only scheduled show of the season at TICO. The Thunderbirds usually attract record crowds and attendance for the weekend probably broke 30,000 by my estimates. Vendors told me that when the Thunderbirds fly the number of

people passing through the gate increases by at least 25%. The crowds were happy and it was great to see them for this one last time. Due to TICO not having the required runway length, The Thunderbirds were based at Patrick AFB about 20 miles south and launched to the show from there. As expected they worked hard and put on an exceptional show even with the impending budgetary constraints.

While the Thunderbirds drew the big crowds, TICO also had arguably the world's most widely known B-25 pilot on the field over the weekend. Col. Richard Cole, a young Lieutenant and co-pilot for Col. Doolittle was in the VAC tent signing autographs. Born on September 7, 1915, he is 97 1/2 years old and could easily pass for 80. A great man who is still very active, Col. Cole has been attending TICO for many years and until recently,

flew a B-25 during the show. Tom Griffin, navigator on one of the Doolittle Raid planes, passed at the end of February at age 96, leaving only four Raiders with us. Along with Dick Cole; Robert Hite, Joseph Saylor, and David Thatcher still survive. To honor these brave men, Tom Riley had his B-25 "Killer Bee" on the field and it flew daily.

Switching gears to jet warbirds, Rick Svetkoff brought his F-104B over from the Kennedy Space Center. I can't think of any other show the F-104 Starfighters have attended in the past four years or so, so having it here was a special experience. During the flights, the back-seat of the F-104 was occupied by General Steve Richie, the only USAF ace in Vietnam. While the Thunderbirds flew precision aerobatics, the Starfighter did some basic loops and rolls, and also made a series of very high speed passes. It is a real







crowd pleaser and something that is pretty much exclusive to TICO. Jerry Yagen saw to it that the show had a B-17, sending his B-17 "Chuckie" down from Virginia Beach to attend the show. Chuckie got a lot of comments, mostly from people who had never seen her. She spent most of her life in Dallas and didn't get east of the Mississippi very often. Her condition is nothing short of magnificent, and the sun glistened off of the polished skin. There was a lot of hard work that went into making her look that good. Chuckie flew daily and it was awesome to see a B-17 flying some low passes. Thanks to Mr. Yagen for his efforts to share the plane with the people on the Space Coast of Florida.

A-4 Skyhawk that came over from Sanford. This Skyhawk is a superb example and one of the very few left flying. The owners did a magnificent job of restoring it from what amounted to a stripped airframe. It did several few passes during each show. The Army Aviation Heritage Foundation came down from Georgia with the H Model Huey and a Cobra and sold rides in both. It was definitely a popular item with long but fast moving lines. When you take 14 people out at a time in the Huey, you can really cut the lines down fast. Priced at \$60 a person, it was a real value. The Cobra was more expensive, but well worth it to those who rode it.

Another rare jet at TICO was the

Michael Goulian flew his Extra 300SC in the show and put on his

usual amazing display of maneuvers and mastery of the aircraft. His show is very professional as is his entire operation. His team arrives in a custom tractor trailer complete with a hospitality area for which fans can buy special passes. The show wouldn't have even occurred without the sponsors who helped pay for it and the countless volunteers who did the actual leg work running the show. There were many people who aren't mentioned here who spent significant sums of money bringing their airplanes in to fly and display. I want to thank you all on behalf of those who didn't. The weather at TICO was normal Florida in the spring. For arrivals on Thursday, it was a postcard Florida day with perfect blue skies and ideal temperatures. That held for Friday's practice show, but things went downhill on Saturday when it got overcast with a bit of rain. Sunday was unquestionably the worst weather day. There was initially some rain, but as the Thunderbirds started their show, a very intense storm hit. Some tents were blown over, but luckily there was no major damage and the weekend proved to be quite a success in the end. I'd like to thank Col. Terry Yon of the VAC for his assistance in making this story possible. **AS**



From March 26th to 30th of this year, the Langkawi International Maritime and Aerospace Exhibition (LIMA) was held at the Malaysian resort island of Langkawi. This trade show focuses on the Asian aerospace industry. The show was very diverse; there was obviously heavy participation by the Royal Malaysian Air Force, Navy and Army fleets, but the Air Forces of Singapore, Thailand, Indonesia, UK, France, United States, Russia and Australia were also in attendance.

The RMAF, which is looking for a replacement for their MiG-29N/NUB aircraft, was wooed by several companies pitching their aircraft, including the Boeing/McDonnell-Douglas F/A-18F Super Hornet, Saab JAS-39 Gripen, Eurofighter EF-2000 Typhoon, Sukhoi Su-30 Flanker, and Dassault Rafale. The show opened on the 26th with a flyover of the Royal Malaysian Air Force. All major fighter types participated, beginning with two Northrop F-5s that performed a high speed pass. Then came the Hornets, Flankers, Hawks and MB-339s from all sides. This was a fantastic sight and a great opportunity for photography. Malaysia Airways also had one of their Airbus A380s perform a flyby with four Sukhoi Su-30MKM Flankers.

Both RMAF demo teams, the "Smokey Bandits" formation team and the Su-30 solo demo team, put on great performances each day. The Smokey Bandits fly four MiG-29N Fulcrums and one MiG-29NUB of 17 Squadron (Skn). The MiGs were purchased in 1997 by Malaysia and must be replaced by 2015, making this one of their last performances before retirement.

Other demonstration teams performed at LIMA as well, including the Indonesian Air Force's Jupiter





Aerobatic Team. The team consists of eight red-and-white KAI KT-1B Woongbi jets and has performed since its inception in 2008. The Russian Knights also performed, and flew a very exciting demonstration as always.

A large part of the airshow was the manufacturer's demonstrations. Boeing gave a fantastic demo of their F/A-18F Super Hornet, flown by a Boeing demonstration pilot. The aircraft used in the demonstration was from VFA-106 "Gladiators", based out of Naval Air Station Oceana, Virginia. The Swedish aero-

space company Saab demonstrated their JAS-39 Gripen using one of the aircraft from the neighboring Royal Thai Air Force (RTAF) fleet. France's Dassault Aviation gave a thrilling demonstration of their Rafale multi-role aircraft. The last European demonstration was flown by the Eurofighter Typhoon, an aircraft that is already serving with six different air forces worldwide. The demonstration was supplied by the RAF 3 (F) Squadron. The Russian company Sukhoi demonstrated their Su-30, which currently serves the RMAF as the Su-30MKM.

In addition to the airshow portion, there was also a maritime portion in the port of Langkawi. Several warships from different countries were on display and the Royal Malaysian Navy (RMN) and Maritime Malaysia put on a little show in the harbor. The RMN flew their Westland Lynx anti-submarine helicopter along with their Eurocopter AS555 SN Fennec, while Maritime Malaysia flew their Augusta-Westland AW139 and Eurocopter AS356N Dolphin helicopters and also had their Bombardier CL-415 perform a water bombing. **AS**





*Warbird Heritage Foundation Open House
Waukegan, IL*



Tom Hedlund



Tom Hedlund



Tom Hedlund



Alan Barbor



Alan Barbor



Tom Hedlund



Alan Barbor

Sun 'n Fun - Lakeland, FL
Photos by Darren Fulton





CAF Houston Wing Open House - Houston, TX

Photos and Article by Sam Bulger



Every spring in Houston the blue-bonnets bloom, the Astros play ball, and the Commemorative Air Force's Houston Wing holds its annual open house. On April 20th and 21st the Houston Wing held their annual open house to the delight of thousands. Included in the festivities were airplane rides, static displays, veterans and re-enactors on the grounds to talk to and pose for photographs.

Bob Dunn was the first visiting pilot to arrive, bringing his Fairchild PT-19. He was followed by the Gulf Coast Wing's impressive Boeing B-17, Rich Sharpe's Douglas A-26 Invader, and the Lone Star Flight Museum's North American P-51 Mustang, which made a brief appearance. Scott Rozzell was kind enough to bring his Beechcraft JRB (Twin Beech), North American SNJ, and, after a multi-year restoration, the CAF's Bell P-63 King Cobra. There was also an interesting and rare vintage Republic Twin Seabee amphibious aircraft. Rounding out the display was a pair of North American T-28 Trojans, a few Russian Yakolev trainers, Don Price's Fairchild PT-26 and all of the Houston Wing aircraft.

The Houston Wing started the show every day by performing the dawn patrol, lead by their freshly restored Lockheed C-60. The dawn patrol was an effective marketing tool as they flew around Katy; we had numerous people come out afterwards saying they were drawn in by the aircraft flying over.

The event was a resounding success with record attendance which garnered much positive exposure for the local Commemorative Air Force wings, warbirds, and general aviation. A big thank you goes out to the Houston Wing and all its volunteers who worked tirelessly on this annual event promoting the CAF and the Wing as the event went off flawlessly. **AS**





April Plane Crazy Saturday - Mojave, CA

Article by Eric A Rosen

On the third Saturday of each month, Mojave's Air and Spaceport hosts an event known as Plane Crazy Saturday. Each event's theme is built around Mojave Air and Space Port's mission of fostering a place of innovation as the world's premier civilian aerospace test center. The April 2013 edition of this event was themed the Experimental Fly-in: Home of the Homebuilding. Air racers, homebuilt models, and experimental aircraft, including ex-military fighters, were on display. That meant a whole lot of eye candy on the super-warm flight ramp.

Among the ex-military fighters that made it to the fly-in were two Mustang air racers. One was the all-composite kit built Blue Thunder of Blue Thunder Air Racing. This particular aircraft is a 3/4-scale version of the famous Second World War fighter, the North American P-51 Mustang. It was pretty hard not to make a beeline to this beauty, with its bright cobalt blue fuselage and white wings. Nearby was parked the other modified Mustang air racer, the Cloud Chaser Thunder Mustang, sitting in its brilliant burnt orange/gold livery with the fluttering American flag painted on its tail. As an added bonus, the recently restored World War II P-51D "Miss Kandy" flew in from Torrance, CA later in the afternoon.

Aside from the Mustang air racers, there were approximately twelve race teams on display at the event. A few examples are the sport class series racers from John and Tricia Sharp, who brought their Nemesis NXT. A biplane racer called "Phantom" from Tom Aberle was on

display, flying it in all the way from Cedar Rapids, TX. Lee Behel flew in with his "Breathless" Lancair Legacy as well.

Some other homebuilt and experimental aircraft included Cory Bird's Symmetry, a bright canary yellow aircraft with flowing lines that was a past Grand Champion at Oshkosh. Gene Sheehan brought his "Feuling Green Flight Challenger", the first all carbon fiber, all-electric Rutan Quickie. It was entered into the NASA Green Flight Challenge, which called for conceptual designs that can fly at a speed of at least 100 mph in a range of 200 miles. A custom kit called a SkyRanger, a microlight in the ultralight category

of homebuilt aircraft, was also on display. A few more notable aircraft in attendance were the N26MS and "Old Blue" Long EZ aircraft, from Mike Melvill and Dick Rutan respectively. Between these two aircraft, they have over 9,000 flight hours and were made famous in their round-the-world flight in 1997.

All in all, it was quite a turn out at the Mojave Experimental Fly-In. In just a couple of hours walking the ramp, you could see just about all of the innovative ways that people have successfully designed aircraft to fly. Plane Crazy Saturday is sponsored by the Mojave Transportation Museum. *As*



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