

The United States Air Force Thunderbirds, Turn 50

A Golden Jubilee

Part Two

by Gary Palamara

It takes an enormous amount of skill, teamwork, logistics and attention to detail to remain at the top of your game for five decades. For the United States Air Force Thunderbirds, striving for excellence is a way of life. While the air show public sees six shiny red, white and blue airplanes, and their highly skilled pilots, behind the scenes there is an entire Thunderbird organization dedicated to making sure every aspect of every show, goes off without a hitch. And It's been that way, for the past 50 years.

** T -38A Flag Panel*

Over the last half century, the Thunderbirds have performed in every state in the union, and traveled to more than 60 countries around the world. In that time, more than 325 million people across the globe have seen the Thunderbirds in person. Countless more have viewed the team while watching national and internationally televised events like the opening ceremonies for the 1996 Olympics in Atlanta, Georgia. On the other extreme, perhaps the smallest crowd ever to view the team in action came in 1969, when the Thunderbirds performed for just 30 spectators at a remote Alaskan outpost.



Once a Thunderbird...

The Thunderbirds have gone through many changes in machinery and technique during the past half-century, but the one constant has always been the Thunderbird people. From the original “Luke Sky Walkers” of 1953, to every new member of the team 50 years later, as the saying goes... “Once a Thunderbird, Always a Thunderbird.”

** 2003 Thunderbird Officers © USAF*



The number of pilots and support staff assigned to the Thunderbird squadron has changed from time to time, due to both the complexity of the aircraft assigned to the team and the changes in the Thunderbird mission. In the beginning, during the F-84 days, six officers and thirty-two enlisted personnel outfitted the Thunderbird ranks. During the 1970s when the team flew the F-4E, 10 officers and 90 enlisted personnel were required. The current Thunderbird squadron is made up of eight pilots, four support officers and more than 120 enlisted personnel. While at first, the number of personnel required by the current organization might seem a bit high, it must be noted that today's Thunderbird mission has expanded some-what in recent years.

**** Taking the Reenlistment Oath - Thunderbird Style***

Job One

Recruitment and retention of skilled Officers and Airmen, has always been a high priority for the Thunderbird team. Now, largely due to today's all volunteer military, that mission has come to the forefront as Job One. Before every one of the more than 70 domestic air shows each year, a member of the Thunderbird team (usually the leader) will administer the enlistment oath to local recruits, making them the newest proud members of the Air Force family. It's estimated that the Thunderbirds are directly responsible for 70 to 80 percent of the new recruits joining today's Air Force.



**** Communications Specialist, SSgt. Jopet Manseguido helps to install the sound system***



Attention to Detail

Also, to perform with the same consistency around the globe, the Thunderbirds are required to be a totally self-contained unit, and the Thunderbirds leave nothing to chance. Each time a Thunderbird aircraft completes a mission, a thorough engine oil analysis is performed with equipment that is brought from Nellis AFB to the air show site. If you need a new V/UHF radio for an F-16, its no problem, the crew brings several spares of everything. From a complete air show sound system, capable of delivering sound to a quarter of a million people, to spare F-16 engine parts,

when the Thunderbirds travel to any air show, about the only thing standing in the way of a great performance is foul weather.

According to the International Council of Air Shows, Inc., between 15 and 18 million spectators attend air shows across North America in a given season. Organizing and hosting a first class air show is no small task and planning normally takes more than a year. Air show crowds can often number over 100,000 people and the logistics involved, at times can seem overwhelming.

To help air show organizations, and as example of the attention given to every aspect of the show, the Thunderbirds have produced a highly detailed Support Manual (available on line) to help answer questions about the air show process. From the number of hotel rooms needed for a team visit (60 – 90), to rental vehicles (32), to the amount of JP-8 jet fuel and smoke oil required for each performance (7,200 & 440 gallons respectively), it's all in the 154-page PDF Support Manual.

C -123B Provider with it's Thunderbird Paint Scheme © USAF

Logistics

Support aircraft have played an important role in the success of the Thunderbirds' mission. In 1955 the team received two, Fairchild C-119 F, "Flying Boxcars" to move all of the equipment

and people from air show to air show. These aircraft were directly assigned to the team. In 1958 the team exchanged their C-119s for two newer Fairchild C-123-B "Providers". Along with the C-123s, from 1959 to 1963 a Douglas C-54-D "Skymaster" named by the team "The City of Las Vegas" was used as a public relations aircraft. Once received by the Thunderbirds, the C-119s, C-123s and the C-54 aircraft were all quickly painted in the traditional Thunderbird red, white and blue paint scheme. But the era of colorful support planes ended in 1962, when the duties of airlift support were taken over by C-130 aircraft from MATS, the Military Air Transport Service. To date, no other support vehicles have been painted with the distinctive Thunderbird markings.



Currently, to move all of the equipment and personnel required for a Thunderbird air show, either one C-141 Starlifter (*now C-17s*) or two C-130 Hercules aircraft are required. The air show location, size of the host runway, and aircraft availability are the deciding factors as to which support planes will be used by the team. Support aircraft may now come from any AMC (Air Mobility Command) air base around the country.

Due to the incredible short field performance of the C-130 aircraft, when required, Thunderbird support personnel will fly into a small airfield location to setup their sound and radio equipment for coordination with the F-16s in the air. This extra effort on the part of the support personnel allows smaller air show venues to have the full Thunderbird experience. Large airfield or no airfield the Thunderbirds will find a way to deliver a great show.

Whatever it Takes

On occasion, the Thunderbird team will perform what is referred to as a “deployed air show.” Deployed shows extend the Thunderbird’s reach to small airfields and non-air show events, like the Air Force Academy graduation, or the “Cheyenne Days” celebration in Wyoming. At these locations, where taking off and landing F-16s in front of the crowd, is not possible, the Thunderbirds will often use the hospitality of a nearby military airfield to house their F-16s and support people. Then, just prior to show time, the Thunderbirds take-off and fly to the air show location and perform for the crowd.

At deployed air shows, seeing the Thunderbirds take off or come back in for a landing may be left to the crowd’s imagination, but they are not otherwise disappointed. Deployed shows offer some of the most exciting moments of any Thunderbird performance.

The Thunderbirds in a Six Ship Formation



Following a nearly 50 year-old “show opening” tradition, the Thunderbirds will take off and fly to the show site, remaining well outside the view of the crowd. Then, at the precise moment of show time, the team will take up a heading that is perpendicular to the crowd line, and make their arrival at show center, from behind their audience. Suddenly the sky is full of F-16s as the first glimpse anyone has of the Thunderbirds, comes when the formation is nearly overhead at a low altitude.

Traveling at a speed just under mach-one, the noise and visual impact immediately electrify the crowd. Once the formation crosses the show line, the two solo planes split off from the diamond flying both left and right. For a time, jets are going in every direction as the air show begins.

At the end of the performance, the Thunderbirds team will once again reform into a six-ship formation and make their departure. The team flies back over the crowd as they

end the air show and exit in the same direction from which they arrived. As the audience watches the team fly off into the sunset, it's not hard to imagine the Thunderbirds flying in formation for the rest of eternity.

** The Thunderbird Officers at McGuire AFB - August 1992*

The Chosen

Becoming a member of the Thunderbirds team is the dream of many in the Air Force and the selection process is intense. In the early days, the squadron flight commander handpicked the pilots with whom he wanted to fly, but those days are long gone. In today's highly technical and specialized times, in addition to pilots, team members are drawn from more than twenty-five different career fields throughout the Air Force. From jet propulsion to public relations, egress to electronics, the Thunderbirds organization mirrors the entire Air Force. As a proud testament to the many support personnel who accompany the team to each and every air show, in the 50-year history of the team, no scheduled air show has ever been cancelled due to an aircraft maintenance problem.



Thunderbird 5, Maj. Shawn D. Pederson discusses a problem with his crew chief, SSgt. Troy Blanchard



There are eight pilots and four support officers assigned to the team, all serve for only a two-year period. To be considered for a Thunderbird position, pilots must have at least 1000 hours of flying in a jet aircraft, and all pilots must have at one time possessed a fighter pilot rating. The rating does not have to be with the F-16 however. If selected for the team, training on the F-16 will take place prior to beginning Thunderbird practice. All officers must also have at least 5-7 years in service and must be personally recommended by their Commanding Officer. As a guard against complacency, and to provide for a smooth transition from one season to the next, fifty percent of the Officers change on a yearly basis.

Once the application deadline has passed, the hard task of narrowing down the officer candidates begin. It's not unusual for applicants to be turned down several times prior to landing a job with the team. By May or early June, final officer selections are made; candidates are notified, and then ordered to report to Nellis AFB by November. Training begins immediately following the end of the air show season. Once started, each pilot must complete 120 practice flights prior to the start of the new air show season.

The enlisted members of the Thunderbird squadron serve a three to four year tour of duty. Depending upon the career specialty involved, they cover the ranks from Senior Airman, to Senior Master Sergeant. All must have served in the Air Force for a period of not less than five years. The enlisted ranks are constantly rotated on an as needed basis, with enlisted personnel leaving and arriving throughout the year. Women make up 10 to 15 percent of the Thunderbird team and although women are now authorized to fly fighter aircraft, to date there have been no women pilots assigned to the Thunderbird team.

** The Crowdline - Willow Grove September 2002*



On the Road Again

The normal air show season runs from March through November of each year, with most air shows occurring on Saturday and Sunday of each week. The Thunderbirds generally travel to more than forty locations during that period and average 70 to 80 air shows each year. While most members of the Thunderbird organization spend a considerable amount of time on the road, another very real part of the Thunderbird team generally never travel to air shows and are most often never seen in public. They are those who support the pilots and staff on the home front. During the Thunderbird selection process, the husbands, wives and close family members of a potential Thunderbird candidate must also approve of a loved one's selection to the team. Without their support, selection to the team is unlikely.

In the past 50 years, the actual Thunderbird lineup has changed several times. The first Thunderbird team in 1953 flew four F-84 Gs. A fifth F-84 aircraft and pilot served as a backup and also performed warm-up routines for the crowd. By the end of the first season however, the spare aircraft was starting to act more like the "solo" planes of later years, integrating some routines with the Thunderbird diamond.



*** F -16 Solos 5 and 6 - Circa 2000**

During the early air show years, the smaller, “slower,” F-84 aircraft had the luxury of spending most if not all of their time aloft, directly in front of show center. For the Thunderbirds, the advent of faster, more powerful aircraft, made the time between maneuvers slightly longer than the shows of the past. To fill the gaps between the routines flown in formation, and also to showcase single ship aerobatics, the idea of using another aircraft in a “Solo” performance was born. Although the spare aircraft also functioned in a Solo capacity for the first few seasons, by 1957, a permanent Solo position was created and became fully integrated into the Thunderbird routine. 1962 marks the team’s first use of dual or opposing solos.

Nowadays

The current Thunderbird team flies a six-ship formation, of the now traditional Thunderbird diamond, and two solos. To this is added a spare F-16, flown by the squadron operations officer and an advance plane flown by the team’s narrator. In total, the team will arrive at the air show site with at least six F-16 C model (single seat) and one F-16 D model (two seat) aircraft. The remaining F-16 can be either a C or D model aircraft, depending on the team’s requirements.



Thunderbirds One to Eight - Willow Grove, PA. - September 2002

Typically, on Wednesday of each week during the air show season, Thunderbird Eight, an F-16 D model aircraft, will be the first aircraft to arrive at an air show site. Piloting this two-seat F-16 will be the Thunderbird show narrator. Along with him and

riding in the back seat, is perhaps the luckiest enlisted man in the Air Force, the aircraft's crew chief. Prior to landing, Thunderbird 8's mission is to look over the entire air show location. The air show organizer is required to have "show center" and other visual markers preset before Thunderbird 8 arrives to make several fly-by inspections. Upon landing, all details of the Thunderbirds' show will then be discussed at the "Narrator's Briefing" to follow.

From representatives of the rental car companies, to Fire Department personnel, everyone associated with the air show that is in a position of authority, is required to be at the Narrators' briefing normally held on Wednesday. Once complete, the Narrator will discuss the air show logistics via telephone, with the Thunderbird team back at Nellis. Any last minute details are ironed out prior to the team's arrival.

** TSgt. Shaun Hardwick puts the final touches on Thunderbird One*

A Clean Machine is a Happy Machine

On Thursday the support team arrives at least one hour in advance and prepares to recover the F-16 aircraft. Once the F-16s arrive, the air show has begun. Even without fancy acrobatics, seven, red, white and blue F-16s flying in formation is not a sight often seen at most airfields. After landing, the aircraft maintenance crews go to work, checking the planes and polishing everything.

Upon landing, the team hits the ground running. There is still much work to be done before the first show. With the latest satellite photos in hand, some of the pilots will survey the surrounding area from the air. Emergency landing sites and any vertical obstructions (towers, high tension lines, etc.) will all be detailed for later discussion.



Over the next few days, the team will blanket the community. The Thunderbirds seize every opportunity to meet and greet the public as they travel across the globe. From a visit to a local High School assembly, an area Hospital or a trip to a nearby Veterans' home, this activity is not just for the Officers of the group. Every enlisted person is fully capable and often does, speak on behalf of the team and the Air Force.

Good P.R.

While just about any organization or group may apply for a visit from the Thunderbird team, there is one area of interest above all others to the Thunderbirds. With so many bad influences in the world today, the team members look forward to presenting positive role models to the youth of America. The Thunderbirds have also developed a

strong relationship with The Make A Wish Foundation, an organization dedicated to helping children with cancer. The Thunderbirds will find ways to support the Make A Wish cause, whenever asked.

** Karen Adams of KYW Radio poses for the camera of Thunderbirds staff photographer SSgt. Christopher Gish*



Friday is officially “Media Day”, and for a very lucky few local news reporters, it’s a chance to experience a Thunderbird air show from the “inside”. In keeping with the Thunderbird mission, the team routinely selects several members of the local press, to fly with Thunderbird 8 on Friday morning. Duly accredited members of the media must submit applications several months prior to the air show date and pass a physical exam, but if all goes well, the reporter will get the once in a lifetime experience of flying in a Thunderbird jet. During the hour-long demonstration flight, the reporter will ride in the back seat of the Thunderbird jet, while the planes’ pilot flies the D model aircraft from the front cockpit.

To accommodate the rear seat position in the D model F-16, several modifications to the single seat design are factory installed. The original F-16 canopy is doubled in size and an aircraft fuel cell, normally located behind the C model pilot, is replaced with a standard F-16 aircraft ejection seat. To make up for the smaller internal fuel capacity of the D model aircraft an external belly tank can be installed for longer flights. Although the rear seat passenger has the ability to fly the aircraft during demonstration flights, full aircraft control presents the Thunderbirds with a unique problem. When flying with civilian passengers, the Thunderbird pilot, commanding the aircraft from the front seat, has the option to switch the plane’s ejection mechanism and landing gear to front control only. In that mode, a nervous back seat passenger can’t prematurely end an otherwise perfect flight. When flying with an experienced passenger, control of these systems can be restored to the normal, “dual” setting.

At most air show sites, the Thunderbirds also fly a practice air show on Friday, for invited guests, the media and as a thank you to the air show staffers. The rehearsal air show usually mirrors the public air show schedule to the letter.



** Thunderbird 8 poses for photographs with a Horsham Township Patrol Car*

It's Show Time

Saturday is normally the first of two show days. The morning is spent with various FAA safety briefings, more media interviews, public events and the ever-present aircraft maintenance and show prep. Saturday also offers the team a chance to spend some private moments with family and friends who might be in the area.

The Thunderbird team is made up of Air Force personnel from all across America. So, it's not unusual for some team members to have either family or close friends, at nearly every show site visited throughout the year. On Saturday the Thunderbirds perform "FARKLE" ceremonies. The FARKLE is a long-standing tradition with the Thunderbirds team. These private ceremonies extend to "Friends And Relatives, Kinfolk, Love-Ones and Everyone else," the team's thanks for their love and support.

Three hours prior to take off, each Thunderbird crew chief fires up their bird for a last minute engine check. Any slight problem will be attended to, prior to show time. On rare occasions, Thunderbird Seven will be called upon to quickly adorn the number of one of its six sisters, while performing its back-up air show mission. During the pre-flight engine run, aircraft communications is also thoroughly checked.

At T.O. minus 60 minutes, the Thunderbird pilots meet behind closed doors to go through every aspect of the show including a complete "talk through" of the entire performance from take-off to landing. With a constant eye on safety, weather conditions are checked and emergency landing locations are verified. While the pilots discuss the show in private, out on the flight line, the communications people perform one last sound system and radio equipment check. With time to spare, the team is ready, and so is the crowd.

*** Communications Central for the Thunderbird's Air Show**



No part of the Thunderbird team is unimportant and although the crowd rarely notices their presence, at the heart of any air show performance is effective communications and coordination. Even prior to take off, the Thunderbird "Com" team is hard at work monitoring up to six different aircraft frequencies, and orchestrating last minute details with the tower, air show boss, weather and emergency personnel. At the start of the Thunderbird's performance the communications team pump up the crowd with music and give voice to the team's narrator. Once in the air, the Thunderbird leader

will call out each maneuver on his VHF aircraft radio, while the Lead Solo does the same on a specially assigned UHF frequency. The ground communications team monitors everything and constantly relay up to the minute wind and weather conditions, as well as giving the team real time feedback on the accuracy of show maneuvers from the crowd line perspective.

By show's end, nearly three quarters of an hour has passed since the planes first took to the air and the audience has lost track of the time. Now, the crowd watches as Thunderbird One pitches up and breaks into his landing role. The five other F-16s follow like clockwork as the aerial portion of the show comes to an end. True to form, the jets taxi with the same precision used in the air. One by one, the Falcons enter their assigned parking spot, and stare at the crowd from show center with their engines still screaming. With a call from the leader, a cloud of white smoke erupts behind the group. Then, in an instant, the smoke is gone, the engines shut down. All is quiet.

*** Public Affairs Officer Capt. Steven Rolenc**

signing an autograph for another Thunderbird Fan

Nellis AFB - November 2003



The Thunderbird pilots deplane and stand at attention next to their red, white and blue chariots. With a snappy salute they thank their audience and then head for the crowd line. The flying may be over, but there is still one last opportunity to sign an autograph, to answer a question, or shake the hand of a future Thunderbird.

A post show debriefing follows and the Saturday air show has come to an end. Tomorrow, they'll do it all over again. Sunday is another show and another chance to make the audience feel the excitement and the pride.

*** The Thunderbird's 50th Anniversary Logo © USAF**



For many, a fiftieth birthday celebration is a time to take stock of your accomplishments, and perhaps a time to contemplate slowing down, a bit. For the Air Force Thunderbirds, every new season is a new beginning and a time of rebirth. They reach for a goal that perhaps can never be fully attained, but they still continue to reach.

After half a century, through good times and bad, tragedy and triumph, the thousands of men and women who have made up the Thunderbirds team, have been ambassadors for the United States Air Force and for America. If you ask, they will say they are not special... not heroes. They say they are not the best, just representing the best. Anyway you look at it, America is better for their efforts. For 50 years and counting, the Air Force Thunderbirds have remained, forever young.

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* Additional photographs added for the Website and PDF versions.

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