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It's Show Time!



In this issue:

- Which scanners work best at the show, which don't
- Deciphering Air Band Chatter
- CQ at 51,000 Feet and 565 MPH

Monitoring the Air Show Experience: The 11th Annual MT Air Show Guide

By Larry Van Horn, N5FPW, MT Assistant Editor

If the bits of radio chatter in the box below sound familiar to you, chances are you have monitored the exciting communications transmitted by the U.S. Navy Blue Angels at a military air show in the recent past. And, nothing will stir up the milcom monitoring enthusiast's juices more than those two magical words: Air Show!

Responding to a survey, recently conducted on my blog (<http://mt-milcom.blogspot.com>), military radio hobbyists around the world have said that high on their list of favorite monitoring activities is monitoring air show communications.

Every year, from March through November, millions of people hit the road to watch the excitement and thrills as military and civilian aero teams put their high performance aircraft through their paces to entertain the crowds and perform at air shows all over the world. In recent years, with better radio equipment, monitors have added a new dimension to the sights and sounds of the show: communications from the cockpits of the performers.

What started out as an answer to a question by an *MT* reader of the Milcom column eleven years ago has grown into one the most eagerly anticipated features in this magazine, with good reason. *Monitoring Times* not only gives you the frequencies to monitor, but you also get our recommended list of radio equipment, and the major military flight demonstration team schedules for the upcoming air show season.

Now it's time again to pack up the radio wagons, charge up the batteries, and get ready for a new season of thrills. Here's your 11th edition of our annual Monitoring Times Milcom Air Show Guide.

Where do you hear the action?

From time to time, frequencies for air show teams do change, by design or need, so it's important to know where to search for potential new frequencies. When the U.S. Navy Blue Angel flight demonstration team made some major changes back in 2004, seasoned veterans knew the right bands to scan, looking for the

new frequencies being used. In 2008, we saw major changes in the VHF frequencies used by the famed U.S. Air Force Thunderbirds. Again, thanks to veteran monitors who knew where to listen, we were the first to report the frequency changes used by the boys in Blue during their aerial performances.

You can make the most of your air show visit by doing the same thing that the milcom veterans do. If you concentrate on the frequency bands listed below, you should be able to locate

These include the graceful aerobatic maneuvers of the four plane diamond formation, in concert with the fast paced, high performance maneuvers of the two solo pilots. At the close of every show, the team illustrates the pinnacle of precision flying, performing maneuvers locked as a unit in the renowned, six jet delta formation.

The Blue Angels are scheduled to fly 67 air shows at 35 air show sites in the continental United States, Alaska and Hawaii during the 2010 season, as the team celebrates 24 years of flying the F/A 18 Hornet. Since its inception in 1946, the Blue Angels have performed for more than 457 million fans.

The other major piece of flying hardware in the squadron is their C-130T Hercules transport aircraft, affectionately known as "Fat Albert Airlines." It is the only Marine Corps aircraft permanently assigned to support a Navy squadron and is flown by an all Marine Corps crew of three pilots and five enlisted personnel. Fat Albert Airlines flies more than 140,000 miles during the course of a show season. It carries more than 40 maintenance and support personnel, their gear, and enough spare parts and communication equipment to complete a successful air show.

Towards the end of last season it was confirmed that 2009 was the last year of the Jet Assisted Take-Off (JATO) for the Fat Albert Airlines C-130 aircraft. Fat Albert JATO take-offs have been a tradition for the Blue Angels since November 22, 1975.

After coping with a multitude of changes during the 2004 season, the 2009 season was relatively stable in terms of frequency for this team. The UHF frequencies monitored during last season are listed below.

Blue Angel Frequencies Frequency Usage (AM mode)

- Pensacola (KNPA) frequencies <Channels 1-7>
- Team frequencies <Channels 8-10>
- Show Site frequencies <Channels 11-15>
- Team frequencies <Channels 16-18>
- Unknown <Channels 19-20>
- 237.8000 Solos when not in the show box <Channel 8> Also used for cross country air-to-air.

"A little more pull, a little power. Standby boards...boards!"

most air show activity at the show you are attending. All frequencies in this article are in MHz unless otherwise indicated.

- 118.000-137.000 - 25 kHz search steps (AM mode) Note: We have reports of some new air show activity in the new portion of the civilian aero band - 136-137 MHz. Be sure to check out this frequency range out for both civilian and military demo aircraft communications.
- 122.7000-123.5750 - 25 kHz search steps (AM)
- 138.0000-144.0000 - 12.5 kHz search steps (AM/Narrowband FM)
- 148.0000-150.8000 - 12.5 kHz search steps (AM/NBFM)
- 162.0000-174.0000 - 12.5 kHz search steps (NBFM)
- 225.0000-380.0000 - 25 kHz search steps (AM)
- 380.0000-400.0000 - 12.5 kHz search steps (NBFM)
- 406.1000-420.0000 - 12.5 kHz search steps (NBFM)

U.S. Navy Blue Angels

The premier U.S. Navy/Marine Corps military flight demonstration team on the air show circuit is the Blue Angels flying their F/A-18 Hornet aircraft. The team is home based at Forrest Sherman Field, Naval Air Station Pensacola, Florida. However, the squadron does spend January through March each year training pilots and new team members at the Naval Air Facility in El Centro, California.

During their performances, the Blue Angels exhibit the skills possessed by all naval aviators.

- 251.6000 Unknown usage, heard at air show in the mid-west US
- 255.2000 Circle and arrivals discrete <Channel 17> Also used for cross country air-to-air.
- 275.3500 Diamond when not in the show box <Channel 9> Also used for cross country air-to-air.
- 284.2500 Show Box - Diamond/Solos/Delta <Channel 16> Also used for cross country air-to-air.
- 289.8000 Aerial Refueling (during cross country trips)
- 305.5000 Fat Albert "Bert" Primary/Solos (West Coast)/Maintenance Officer <Channel 10>
- 305.9000 Fat Albert "Bert" *New* for 2009 - Heard during San Francisco Fleet Week/Pensacola homecoming show (no 305.5000)
- 346.5000 "Checklist Freq" - Pre-show checklist, ground start/roll out and maintenance <Channel 18>

During the 2005 show season, the Blues started using a new communications cart "comcart" for ground communications. The frequencies that have been reported include:

- 142.6125 Tower Spotter <Alpha>.
- 139.8125 Maintenance Crews <Bravo>
- 141.5625 Usage Unknown <Charlie> First reported in 2007 and monitored in 2009 on the West Coast

Although we believe that the older 162.0-174.0 MHz Blue Angel FM LMR "comcart" frequencies may no longer be in use, I have not deleted them from this list, since we continue to receive some sporadic reports that some are being heard at select air shows (especially on the West Coast). We also had a field report this last year at a mid-west air show that 169.400 MHz might have been used by the Blues for ground operations. More reports will be needed to see if any of the frequencies in boldface in our list below are still in use by the team.

I encourage those of you with Signal Stalker® and Close Call® capability to include the various government and military LMR bands mentioned previously in your scan profiles to find any additional frequencies that may be used by the team's ground crews.

Other Possible Blue Angels Frequencies

- Maintenance/Ground communications [Old communications comcart/ground frequencies] (NBFM)
- 163.0000 164.9000 165.2250 167.5000 167.8000 168.9000 169.4000 170.9000

Previously used UHF frequencies that have not been reported in recent years (AM)

- 236.4500 249.6250 250.9750 (Diamond first heard in 2008, but not reported in 2009)
- 254.5000 256.2500 262.8500 263.3500 264.3500 264.5500 265.0000 273.3000 286.0000 289.9000 (aerial refueling)
- 299.6500 302.1000 (Fat Albert Secondary)
- 302.1500 307.7000 381.0000

U.S. Air Force Thunderbirds

The premier U.S. Air Force flight demonstration team is known as the Thunderbirds.



P-51 Mustang "Glamorous Gal" (Courtesy: Don Edwards)

2010 marks the 57th season that the T-Birds have performed air shows and this year they will conduct more than 65 shows in 27 States and Canada. They will perform formation flying and solo routines during each performance.

Like the Blue Angels, the four aircraft diamond formation demonstrates the training and precision of Air Force pilots, while the solos highlight the maximum capabilities of the F-16. The pilots perform approximately 30 maneuvers in a demonstration. The entire show, including ground and air, runs about an hour and 15 minutes.

The Thunderbirds recently completed a swap of their older F-16 Block 32 Fighting Falcon aircraft for more advanced and powerful F-16 Block 52 airplanes.

During the 2008 air show season, we noted a host of new VHF frequencies used by the team and published them in last year's guide. Several of the older standard frequencies have apparently been abandoned in favor of these new VHF frequencies. More than likely these new frequencies are a result of the new band plan being implemented by the Department of Defense (DoD) in the 138.0-144.0 and 148.0-150.8 MHz bands. I have compiled a separate list of the older frequencies and included them in this year's guide in case the active frequencies below aren't used. They might revert back to some of the older frequencies from time-to-time.

I have also had several readers last year ask about who is using the Thunderbird 14 call-sign. This is normally used by an Air Mobility Command transport aircraft carrying the team maintenance/ground crew personnel and their equipment to the various shows. In 2009 this was typically a C-17 aircraft.

USAF Thunderbird Actively Reported Frequencies

- Frequency Usage**
- 139.8000 Diamond formation <Victor 2> (AM)
 - 139.2250 Diamond formation <Victor 1> (AM) Noted at a West Coast air show
 - 140.7000 Diamond formation <Victor 1> (AM)
 - 141.0750 Diamond formation <Victor 1> (AM) Appears to be the primary VHF frequency used in 2009.
 - 143.7000 Diamond and Delta formations <Victor 1> (AM)
 - 148.1250 Diamond formation <Victor 1> (AM)
 - 225.1750 Thunderbirds <Uniform 1> (AM)

- 235.2000 Thunderbird Control/ComCart (AM) Also used for cross country air-to-air.
- 235.2500 Pre-Engine Start and Solo aircraft on/off show center/ linked to PA system (AM) <Uniform 1>
- 322.9500 Engine Starts/Solo aircraft (5-6) Air-to-Air (AM) <Uniform 2>

Maintenance/Ground teams (NBFM)

- 216.7250** Announce PA feed - Music and show narration <Channel 55>
- 216.9750** Team air show frequency feeds/mix - air-to-air simulcast <Channel 60>
- 413.2750** Ground Maintenance/MOC/Public Affairs - Analog (DCS 431)
- 413.3250** Ground Maintenance - Analog (DCS 503)
- 413.3750** Ground Maintenance - Analog, monitored in Hawaii
- 901.5000** Comm Cart Headset
- 905.3500** Comm Cart Headset

Previously reported frequencies used by the team are listed below. If you hear any of these frequencies in 2010, please contact us at our email address listed in the Milcom column masthead.

- 140.4000 Support Operations. (AM) Also used for cross country air-to-air.
- 141.8250 Alternate Diamond <Victor 2> (AM)
- 141.8500 Diamond formation linked to PA system <Victor 2> (AM)
- 142.1750 Appears to have been replaced by the 413 MHz ground frequencies noted in our list above. (NBFM)
- 142.5750 Program audio/Air-Ground communications (NBFM)
- 143.2500 Pre-Engine Start (AM)
- 143.8500 Reported cross country frequency in the southern U.S. <Victor 1> (AM)
- 143.9000 Appears to have been replaced by the 413 MHz ground frequencies noted in our list above. (NBFM)
- 148.8500 Alternate Diamond <Victor 2> (AM)
- 150.1500 Alternate Diamond <Victor 2> (AM)
- 216.7750 Announce PA feed - show narration <Channel 56>
- 235.0250 Unknown usage (AM)
- 413.0000 Ground Communications (P25)
- 413.0250 Ground Communications (Analog channel 1)
- 413.1000 Ground Communications (Analog channel 2)
- 413.2500 Ground Communications (Analog)
- 413.3500 Ground Communications (P25)
- 413.3750 Ground Communications (P25) only analog reported on this one recently



Thunderbirds (Courtesy: Don Edwards)

We have recent reports that frequencies around 216 MHz are being used by the T-Birds. These are being transmitted using Comtek gear and are interesting to monitor from the unit "comcart." You can get a complete Comtek band plan for that frequency range in our online resource guide in this month's Milcom column. If you don't hear the comcart on the frequencies that I have identified above, do a scanner search using the frequency chart listed in the Comtek document I mentioned above.

Other US DoD Military Flight Demo Teams

In addition to the Blues and T-Birds mentioned above, the Navy and the Air Force also have other units that perform at civilian and military air shows and flyovers nationwide. In addition, other branches of the DoD use a wide variety of VHF and UHF frequencies during air shows. We have compiled a list of possible VHF/UHF frequencies to program in a separate bank of your scanner to aid in looking for this other activity.

VHF (AM mode)

138.1500	138.2000	138.2500	138.5000
138.5500	138.5750	138.6000	138.6250
138.6750	138.7500	138.8250	138.9500
139.0000	139.2250	139.3000	139.5250
139.6000	139.7000	139.9000	140.2000
140.3000	140.5000	141.1500	141.2500
141.3000	141.4000	141.5500	141.6000
141.6500	141.9500	142.3000	142.6000
142.7000	142.8000	142.9000	143.0000
143.1500	143.2000	143.2500	143.5500
143.6000	143.6250	143.7000	143.7500
143.8250	148.1250	148.1500	149.0000
150.1500	150.2500	150.3000	MHz

UHF (AM mode)

225.1750	226.4250	227.6750	228.5750
229.1750	230.1500	235.1250	238.3500
238.5750	245.2500		
252.1250	255.1500	259.3750	265.9500
266.2500	271.7500	273.3750	281.8500
294.5250	298.3500		
308.0750	316.2250	326.9000	328.0750
335.7500	341.6500	348.5000	356.9500

Blue Angels' C-130 "Fat Albert" (Courtesy: Don Edwards)



364.0500 371.8000
372.0750 379.3750 MHz

Some of the specific frequencies that have been recently reported at air shows or associated with the units that support these teams are listed below.

US Military Flight Demo Teams

(AM mode, * indicates a primary frequency)

Air Force ACC A-10 Thunderbolt Demonstration Teams: East Coast – 23 Wing based at Moody AFB, GA picked up the demo duties in 2009 and West coast – 355 Wing based at Davis Monthan AFB, AZ

136.5750	138.1250	138.1500	138.2500
138.2750	138.4750	138.5000	138.7500
139.6250	139.7000	139.8000	140.1250
140.1500	140.2000	140.4000	142.2000
142.3000	142.6250	143.7000	143.7500
143.8250	236.8500	251.9750	268.1000
283.7000	305.4000	327.7000	343.0000
376.0250*	384.5500*		

Air Force ACC F-15E Strike Eagle Demonstration Teams: East Coast – Demonstration team based 4th FW Seymour-Johnson AFB, NC and West Coast – The 366th Wing at Mountain Home AFB in Idaho will stand up another Strike Eagle Demo Team in 2009. The previous west coast team based at Eglin AFB stood down on May 1, 2009 due to the transition on the base to the F-22 Raptor.

235.7500	252.5250	252.7750	276.6000
280.5000	289.3000	295.6000	296.1000
298.3000	298.6000	300.1250	300.2250
300.4250	300.5250	300.6250	300.7250
300.8250	300.9250	301.0250	301.1250
301.2250	301.3250	301.5250	305.6000
316.9000	333.3000	333.4000	333.5000
335.1000	335.2000	335.3000	335.4000
335.5500	335.9000	336.2250	336.4000
336.9000	341.7500	370.0250	(new in 2009)
376.0250*	376.1000	377.8500	384.5500*

Air Force ACC F-16CJ Viper Demonstration Teams: East Coast – Shaw AFB, SC and West Coast – Hill AFB, UT

136.5750	136.6750	138.0250	138.1000
138.1500	138.1750	138.2000	138.2250
138.2500	138.3000	138.3250	138.4250
138.4750	138.5000	138.5250	138.7250
138.7750	138.8750	138.9000	138.9250
138.9500	139.1500	139.2250	139.3000
139.7250	139.7500	139.8000	139.8250
139.9000	139.9250	139.9500	139.9750
140.1250	140.1750	140.2000	140.3750
140.4250	140.7000	140.9250	141.4750
141.5500	141.6000	141.6500	141.6750
141.7000	141.7500	141.7750	141.9000
142.1250	142.2000	142.3000	142.4000
142.5000	142.5500	142.7750	143.4250
143.8000	143.8750	148.1250	229.0750
238.5000	257.1000	261.2000	273.7000
280.5000	301.6000	303.6000	311.2000
317.8000	320.5000	320.5250	320.7000
344.9000	360.6750	347.3000	354.5750
376.0250*	384.5500*		

Air Force ACC F-22A Raptor Flight Demonstration Team: 1st FW Langley AFB, VA

228.4500	228.9500	236.5500	238.1750
238.6250	238.8250	238.8250	252.7750
253.2000	257.0750	262.0250	262.0500
264.0000	264.9750	269.9000	270.4000
276.6750	282.6750	285.1500	287.7750
292.3000	292.7000	293.3000	296.9000
296.9250	298.3500	301.5250	305.6500
315.1250	315.8500	317.8000	319.3250
325.3250	325.7250	325.7750	328.5000

333.5500 351.0000 357.1000 358.8500
364.0000 364.1250 359.2250 376.0250*
379.8000 384.5500* 385.7000

Air Force ACC Heritage Flight

122.4750	122.9250	123.1500	123.4250
123.4500	123.6000	123.9000	127.1500
136.5750	136.6750	238.1500	282.8000
376.0250*	384.5500*		

Air Force B-1B Bomber Flyover 238.1500
Air Force B-2 Bomber Flyover/Static displays: 509BW Whiteman AFB, MO
266.2000 273.4500 273.4750 300.1000
381.0500 359.2500 370.900 388.8500*
393.0000

Air Force B-52 Bomber Flyovers
376.0250*

Air Force Combat search and rescue (SAR) demonstrations
138.1000 139.7000 225.4500 236.000 (SAR Bravo)
242.0000 251.9000 (SAR Alpha)
252.8000 259.0000 282.8000 381.0000
384.5500*

Army Aviation Heritage Foundation
123.4500 234.5000 242.4000

Army Blackhawk Demo 30.4000(PL151.4 Hz)
46.8500 242.4000 (Primary) (NBFM)

Coast Guard Aircraft/SAR Demonstrations (Aero Frequencies)
122.9000 237.9000 282.8000 326.1500
345.0000 (Demo) 379.0500

Coast Guard Aircraft/SAR Demonstrations (Marine Channels)
157.0500 Show Control/Show Center Boats <Marine Channel 21>

157.0750 Search and Rescue Demo/Command Post (NBFM) <Marine Channel 81>

157.1000 Show Warning Broadcast <Marine Channel 22>

157.1250 Unknown usage <Marine Channel 82>

157.1500 Show Control/Show Center boats <Marine Channel 23>

157.1750 Boats to Show Center <Marine Channel 83>

Coast Guard HITRON Drug Interdiction Demonstration 157.0500 (NBFM) <Marine Channel 21>

Maine Corps AV-8B II Flight Demonstration Teams (frequency information is needed for the west coast unit): East Coast – MCAS Cherry Point, NC 363.300 and West Coast – MCAS Yuma, AZ

Marine Corps Helicopter Demonstrations
237.400 315.375 315.400

Navy F/A-18C Hornet Flight Demonstration Teams (frequency information is needed for these units): East Coast – NAS Oceana, VA and West Coast – NAS Lemoore, CA

Navy F/A-18F Super Hornet Flight Demonstration Teams (frequency information is needed for these units):

East Coast – NAS Oceana, CA and West Coast – NAS Lemoore, CA

Navy LCAC Communications 40.4000 (NBFM)
Navy Light Amphibious Vehicle comes 30.0000 (NBFM)

Navy Search and Rescue Demonstrations
242.5000 282.0000 283.1000

DoD Military Parachute Demonstration Teams

One of the favorites of all the DoD military parachute teams on the air show circuit is the U.S. Army Golden Knights based out of Fort Bragg, North Carolina. The team aircraft used during air shows is either the C-31A Friendship or UV-18A Twin Otter.

Look for their communications on the

frequently reported frequencies of 122.7750, 123.4000, 123.4750 or 123.5000 MHz. Other frequencies you should keep plugged into your scanner for possible GK team activity include 32.3000, 32.4000, 122.5750, 124.8750, 126.2000, 238.0000, 284.9000, and 367.7000 MHz. A possible new VHF frequency of 142.8000 MHz may be utilized in the near future by the Golden Knight Black and Gold teams.

The U.S. Army actually has more parachute teams than just the Golden Knights. The U.S. Army Special Operations Command has a parachute demonstration team known as the **Black Daggers** (see *MT Milcom* May, 2004). Several frequencies for this unit have been uncovered during the last few seasons including: 123.4500 136.0000 136.5000 138.6500 237.3000 238.1500 MHz.

Another U.S. Army parachute outfit is the **Silver Wings**. This is the Fort Benning, Georgia, Command Exhibition Parachute Team. They have been monitored on 34.6500 and 44.9000 MHz. However, both these frequencies were common landing zone frequencies in the area they were performing in, so if neither of the two frequencies above are heard at a performance you attend, I suggest you initiate a search for them in VHF-low band military frequency sub-bands.

In addition to the VHF low band frequencies mentioned above, ground and safety personnel associated with this team have been heard using 467.6125 MHz (FRS channel 10/GMRS) for communications. There was also one report that the team was using an Intra Squad radio frequency of 397.5000 MHz.

The U.S. Army has several more teams, but we still do not have frequency information for them. We would appreciate field reports on the following U.S. Army teams if you catch them performing this air show season:

- All American Free Fall Team (82nd Airborne)
Fort Bragg, North Carolina
- Green Beret Parachute Team Fort Bragg, North Carolina
- Black Knights US Military Academy, West Point, New York

The U.S. Special Operations Command has a team based out of MacDill AFB in Florida. They have been heard on the following frequencies: 122.4500 123.4500 and (no, this is not a misprint) 151.6250 MHz, a nationwide business itinerant frequency.

During the 2007 show season, frequencies used by the U.S. Air Force Academy Parachute Team **Wings of Blue** were found. These two frequencies were used for air-to-ground jump coordination and heard on 121.9500 MHz (AM) and 407.5000 MHz (NBFM).

We now have the first confirmed frequency for the **Screaming Eagles** (101st Airborne Division) Parachute Team, based out of Fort Campbell, Kentucky: 44.2000 MHz (NBFM).

And last, but not least, the colorful U.S. Navy Seal Parachute Team, known as the **Leap Frogs**, are frequent visitors around the country at various sporting events and air shows. This team has been regularly reported on 270.0000 (AM) and 407.5000 MHz (NBFM 131.8-Hz PL tone) nationwide over the last several years.

Canadian Flight Demo Units

The Canadian Forces Snowbird aircraft demonstration team (431 Air Demonstration Squadron) is another regular on the U.S./Canada air show circuit. The following frequencies have been recently reported for this popular aerial team: 123.325 227.600, 242.600 <Push 13> 243.400, 245.500, 245.750, 246.500, 272.100 (Primary) <Push 11> 284.900, 299.500, 333.300 <Push 14> 340.100 MHz. A bit of a strange VHF frequency that has been noted in use during the last few air show seasons for this team's solo aircraft is 116.000 MHz (AM).

The Canadian Forces also have a CF-18 demonstration team. A couple of years ago Brian "Check your Six" Topolski, in Connecticut, passed along these possible frequencies for that team:

128.9750	129.0250	130.0750	245.5000
263.5000	263.7000	264.6000	(East Ops)
274.4500	285.9750	312.5500	(Air/Air)
316.5500	323.3000	333.3000	335.6000
340.2000	(West Ops)	341.7000	

GMRS Frequencies

During the 2001 and 2002 seasons I received several reports that the Golden Knights were using GMRS (General Mobile Radio Service) frequencies 462.6250, 467.5625, and 467.6125 MHz. In addition to hearing air show demo crews, monitors have found vendors and other military ground units using GMRS frequencies. You should make these frequencies part of your scanner load-out prior to the air show.

A	B	C
462.5500	467.5500	462.5625
462.5750	467.5750	462.5875
462.6000	467.6000	462.6125
462.6250	467.6250	462.6375
462.6500	467.6500	462.6625
462.6750	467.6750	462.6875*
462.7000	467.7000	462.7125
462.7250	467.7250	

*(462.6750/467.6750 National Emergency Frequency pair)

Legend:

- A. Base station, Mobile relay, Fixed station, or Mobile station
- B. Mobile station, Control station, Fixed station operating in Duplex mode.
- C. Interstitial frequencies, base and portable simplex

Family Radio Service/ Intra-Squad Radio Frequencies

We have also received several reports of the ground pyrotechnics personnel from the Tora Tora Tora and Warbirds flight demonstration team using Family Radio service (FRS) radios for communications during shows. You will also find military monitoring enthusiasts attending an air show using FRS radios to coordinate



Dan McClung's "Red Eagle"
(Courtesy: Don Edwards)

meetings with fellow monitors. Load up FRS frequencies below (NBFM mode) in your scanner or carry a FRS radio to the show, and you might make a new milcom monitoring friend or two.

462.5625 <Ch 1>	462.5875 <Ch 2>
462.6125 <Ch 3>	462.6375 <Ch 4>
462.6625 <Ch 5>	462.6875 <Ch 6>
462.7125 <Ch 7>	467.5625 <Ch 8>
467.5875 <Ch 9>	467.6125 <Ch 10>
467.6375 <Ch 11>	467.6625 <Ch 12>
467.6875 <Ch 13>	467.7125 <Ch 14>

The government version of the FRS is known as the Inter-Squad Radio or ISR. As mentioned above, I have seen several reports over the last few years that these radios might be in use at air shows by military units, including the Civil Air Patrol (CAP), see below. It might be a good idea to program these frequencies in your scanner as part of your air show load out.

396.8750 <Ch 1>	397.1250 <Ch 2>
397.1750 <Ch 3>	397.3750 <Ch 4>
397.4250 <Ch 5>	397.4750 <Ch 6>
397.5500 <Ch 7>	397.9500 <Ch 8>
398.0500 <Ch 9>	399.4250 <Ch 10>
399.4750 <Ch 11>	399.7250 <Ch 12>
399.9250 <Ch 13>	399.9750 <Ch 14>

U.S. Civil Air Patrol Frequencies

Finally, you should program U.S. Air Force Civil Air Patrol frequencies in your scanner as well. We have received field reports of CAP frequencies (repeater and simplex) being used for ground support at several air shows.

The Civil Air Patrol has been transitioning to narrowband allocations/equipment over the last year. Even though transition was to have been completed by October 1, 2007, many regions did not make that deadline due to frequency conflicts. Therefore, we have included both the old assignments as well as some of the new assignments (all these frequencies were found in the public domain).

Old assignments: 143.7500 143.9000 148.1250 148.1375 148.1500 148.5375 148.9750 149.5375 MHz

141.5750 Simplex Command Control 1 <CC1> 127.3 Hz pl
141.0000 Simplex Command Control 2 <CC2> 131.8 Hz pl
149.2750 Simplex Air 1 <Air1> 141.3 Hz pl
150.5625 Simplex Air 2 <Air2> 151.4 Hz pl
150.2250 Simplex Guard 1 <Guard1> 162.2 Hz pl
139.8750 Simplex Tactical use <TAC1> 173.8 Hz pl
148.1250 Simplex Primary Talkaround (PA TA) <R65CAT> 100.0 Hz pl
148.1500 Simplex Secondary Talkaround (PB



F-15E Strike Eagle 1 torching the tarmac (Courtesy: Don Edwards)

TA) <R66CAT> 100.0 Hz pl
 148.1250/143.5500 Nationwide repeater pair <R63>
 148.1500/143.7000 Nationwide repeater pair <R64> 203.5 Hz pl

There are more frequency designators built around the repeater pairs mentioned above, but we aren't quite ready to present that list. Further monitoring will be required nationwide to finish flushing out all of the PL tone versus designators being used by the CAP.

Other possible CAP frequency assignments to watch out for include: 138.0125 140.6375 142.2250 143.7250 143.9000 148.1750 148.7750 150.1625 150.5625 150.6375 MHz

Civilian/Foreign Air/Parachute Demonstration Teams

At most air shows the military flight demonstration units aren't the only performers. Civilian organizations, companies, and individuals sponsor a wide variety of aerobatics teams and parachutists to thrill the crowd. Many different frequencies are used by these teams in the civilian aviation band. Load your scanner with the following frequencies and you shouldn't miss out on communications used by the civilian acts.

122.7250 122.7500 122.7750 122.8250
 122.8500 122.8750 122.9250 122.9500
 122.9750 123.0250 123.0500 123.0750
 123.1500 123.1750 123.3000 123.3250
 123.3500 123.4000 123.4250 123.4500
 123.4750 123.5000 126.4000 129.6500
 129.9250 136.5750 136.9750

Some specific frequencies reported to us for other foreign military and US civilian flight demonstration teams are provided in the follow-



Search and rescue demonstration (Courtesy: Don Edwards)

ing list.

Civilian Flight Demonstration Teams and Air Show Companies

Aeroshell Aerobatics Team (AT-6 Texans) 123.1500
 Aerostars CJ-6/YAK-52 Flight Formation Team 118.7000 122.7750
 Chapman/Mancuso Aerobatics 136.9750
 Civilian Air Show Discrete Common 123.1500
 Dave Schultz Air Shows 118.7000(Ground Ops) 132.950 (Operations) *135.6500 (Airboss) *238.1500 (Airboss) 350.3000
 Flight for Diabetes (Michael Hunter) 123.4250
 Firecat (Rich Perkins) 123.5000
 Flying Colors Hang Glider Aerobatic (Dan Buchanan) 123.1500 123.3000 123.4500 128.6750 132.9500
 Geico Extra 300 (Tim Webber) 123.1500
 "Hamster" Biplane (Ed Hamill) 123.1500
 Iron Eagles Aerobatic Team 1 2 2 . 9 2 5 0 123.1500 123.4750
 John Klatt Air shows 120.6000 123.4750
 Julie Clark's (T-34) American Aerobatics 118.7000 120.6000 135.9250
 Lima Lima Flight Team 1 2 3 . 1 5 0 0 123.1750 123.4250 123.5750
 Manfred Radius Glider Aerobatics Team 123.1500
 Oreck Vacuum Cleaners Aerobatic Demo (Frank Ryder) 122.8250 123.4250 123.4500
 Otto the Helicopter 123.1500 123.3000
 Patty Wagstaff Air Shows Inc 1 2 2 . 7 5 0 0 123.4750
 Red Eagles Aerobatic Team 1 2 0 . 6 0 0 0 123.1500 123.4250 123.4750
 Ritchie's Pyro 467.6375 (233.6 Hz pl)
 Robosaurus - World's First CAR-NIVOROUS Monster Spotter 462.7125 (DCS464)
 Sean Tucker Power Aerobatics 1 1 8 . 7 0 0 0 122.8750 122.9500 123.1500 123.4500 123.4750
 SIAL Marchetti SF260 (Debbie Gary) 123.1500
 Showcopters 123.1500 134.7000
 Sky Soldiers Demonstration Team (Army Aviation Foundation) 118.7000 123.0250 234.5000 242.4000
 Skytypers Team 122.7500 122.7750 123.4250 (Formation) 122.7750 123.1500 123.4250 123.4500 (Solos)
 Super Decathlon (Greg Koontz) 123.1500
 Swift Magic Aerobatic Team 1 2 2 . 7 7 5 0 122.9250
 Team Red 123.3500
 The Patriots (L39) Jet Team 127.3000
 Tora Tora Warbirds Team (Commemorative Air Force) 118.7500 122.8500 122.8750 123.1500 123.4500 469.5000 (NBFM) 469.5500 (NBFM)
 Vintage Thunderbird (T-33) Aerobatics (Fowler Cary) 123.1500

Foreign Military Flight Demonstration Teams

Asas de Portugal, Esquadra 103 (Wings of Portugal 103 Squadron) Flight Team 262.1500
 Battle of Britain Memorial Flight (BBMF) (UK) 120.8000 122.7000
 Black Cats Royal Navy Helicopter Display Team (UK) 280.4750
 Blue Eagles Royal Army Air Corps Flight Team (UK) 135.9500 135.9750 136.9750 382.0000
 Blue Tango Helicopters 123.6000
 Brazilian Air Force Team (Brazil) 130.5500 130.6500 132.2500
 Brazilian Smoke Squadron (Brazil)

133.4500
 British Army Red Devils Parachute Team (UK) 462.6250
 Canadian Forces Skyhawks Parachute Jump Team (Canada) 123.0000 294.7000
 Falcons Royal Air Force Parachute Jump Team (UK) 255.1000 256.9000 465.1000 (NBFM)
 Frece Tricolori Military Flight Team (Italy) 123.4750 (Ground Secondary) 140.6000 (Ground Primary) 362.6250 (Primary) 263.2500 (Secondary) 307.8000 Unknown usage
 Grasshopper Helicopter Team (Netherlands) 281.1000
 Halcones Military Flight Team (Chile) 136.1750
 Horseman P-51 Acro Team 122.9250
 La Patrouille Adecco Air Force Flight Team (France) 121.8500 123.6000 138.4500 141.8250 143.1000 143.8500 242.6500 243.8500
 La Patrulla Aguila Military Flight Team (Spain) 130.5000 252.5000 337.9750
 Le Royal Jordanian Teams (Jordan) 123.5000
 Les Breitling (Switzerland) 127.3500
 Les Iskry (Poland) 123.6000
 Marche Verte [Green March] (Morocco) 135.0000 135.9250 (Ground) 135.5000 (Air-to-Air)
 Midnight Hawks Finnish AF Academy Demo Team (Finland) 140.6250
 Patrouille Suisse Military Flight Team (Switzerland) 266.1750 288.8500 388.0750
 Red Arrows Royal Air Force Flight Team (UK) 242.2000 243.4500 253.4500
 Team Guinot Formation Wing Walkers (UK) 118.0000
 Turkish Stars Military Flight Team (Turkey) 225.750 264.400 279.600
 Yak Aerostars Team (UK) 1 2 2 . 4 7 5 0 122.9500 123.3500 124.4500

In Closing

It is always difficult to predict what a new season will bring, so I strongly encourage readers to watch my Milcom Blog and the Monitoring Times home page for any late breaking news and frequency information during the 2010 air show season.

I would like to publicly thank the real heroes of the annual air show guide, the hundreds of radio monitors who took the time to share with me what they heard at each air show. Without these caring radio hobbyists, there would be no guide. It's to you that I dedicate this latest edition of the air show guide.

If you have found this guide helpful and would like to help, how about taking a minute or two to pass along what you have heard? It's really important that we get reports from the field since I can't make it to many of the shows (we just don't have a budget for that sort of thing).

Our goal next year is to have a report from each major air show that has a military performer at it. This will greatly aid in the production of the next annual listing. You can reach me via our snail mail address at MT Milcom, 7540 Highway 64 West, Brasstown, NC 28902 or via e-mail at larryvanhorn@monitoringtimes.com. And, before you head out for a show, check the Milcom Blog for the latest information.

Now, break out those scanners, plug in those frequencies, and get ready for the ride of a lifetime: a front row seat at the air show!

"Blue Angel Delta: Standby Boards...Boards!"



Monitoring the Air Show Experience: Equipment and Prices

By Larry Van Horn N5FPW

Now that you know who the crack military flight demonstration teams are and where to find the frequencies they use for air-ground coordination and other communications, I'll take a look at two other important considerations for successful monitoring: where and when you can find an air show in your area and what equipment is required to listen in. While I don't have a favorite, I have prepared the list of receivers and scanners that meet all the requirements as outlined below.

Not Just Any Old Scanner Will Do

Some scanners currently being marketed, and most older scanners on the used market, are not suited for air show monitoring. There are certain requirements your air show radio has to meet in order to successfully monitor the two major military aerial demonstration teams, the Blues and T-Birds.

If you are going to a Thunderbird show, you will need a scanner that can monitor the 138-150 MHz military land/mobile band in the AM mode. Most of the older Uniden scanners cannot be used for air show monitoring due to their lack of independent transmission mode selection.

You also need a scanner that has the 225-400 MHz military aeronautical band in it. Most of the action (especially the Blues) will be heard in this military UHF portion of the spectrum. Adding this criterion to the mix of possible radios narrows our choice for air show scanners further.

The information on this page includes current Grove Enterprises stock codes/prices (if carried by Grove) for the items indicated, but the price does not include shipping or taxes (if applicable). Prices are subject to change without notice, so be sure to call the Grove order department at 800-438-8155 or visit the Grove website at www.grove-ent.com for current pricing.

If you are going to use a handheld scanner at the air show, there is another purchase you should consider: an extra set of charged batteries. Murphy's Law applies here and nothing is worse than having your batteries die halfway through the show with no replacements.



TABLE ONE: MILITARY AIR SHOW CAPABLE RECEIVERS

Note: Prices and availability are subject to change without notice. You should call or visit the Grove website for the latest updates. This list is for reference purposes only. Radios listed with n/a are not available from Grove, but are still being sold new from fine *MT* advertisers such as Universal Radio.

Handheld Unit	Grove Stock No	Price
AOR AR-8200 MK III	SCN51	\$629.95
AOR AR-Mini B	n/a	\$279.95
GRE PSR-300	SCN13	\$179.95*
GRE PSR-500	SCN18	\$449.95***
GRE PSR-700 ex	n/a	Not FCC certified, so no pricing currently available*
Icom IC R-5 Sport	SCN12	\$174.95
Icom IC R-20	SCN20	\$519.95
Icom IC-RX7	n/a	\$199.95
MFJ-8322	n/a	\$199.95*
Radio Shack Pro-107	n/a	\$229.99*
Radio Shack Pro-106	n/a	\$499.99***
Radio Shack Pro-164	n/a	\$199.99*
Uniden BC-246T	SCN46	\$189.95*
Uniden BC-346XT	SCN45	\$219.95*
Uniden BCD-396XT	SCN53	\$499.95***
Yaesu VR-500	SCN06	\$219.95

Base/Mobile Unit	Grove Stock No.	Price
AOR AR-8600 Mk IIB	RCV11	\$919.95
GRE PSR-400	SCN14	\$179.95*
GRE PSR-600	SCN19	\$449.95***
Radio Shack Pro-163	n/a	\$199.99*
Radio Shack Pro-197	n/a	\$499.99*
Uniden BCT-15X	SCN31	\$219.95*
Uniden BCD996XT	SCN21	\$499.95***
Yaesu VR-5000	n/a	\$619.95

Computer Receivers	Grove Stock No.	Price
Icom IC-R1500	RCV25	\$599.95
Icom IC-R2500	RCV52	\$899.95
Icom R-9500	RCV27	\$13,500.00
WinRadio WR-G305e	RCV63	\$619.95**
WinRadio WR-G305i	RCV53	\$519.95**
WinRadio WR-G305e/PD	RCV63P	\$719.95**
WinRadio WR-G305i/PD	RCV53P	\$619.95**
WinRadio WR-G315e	RCV64	Contact Grove for pricing**
WinRadio WR-G315i	RCV54	Contact Grove for pricing**
WinRadio WR-3500e	RCV49-E	\$1,995.00*
WinRadio WR-3500i-DSP	RCV49-I	\$2,195.00*
WinRadio WR-3700e	RCV50-E	\$2,895.95*
WinRadio WR-3700i-DSP	RCV50-I	\$2,895.95*

Professional Receivers	Grove Stock No.	Price	
AOR AR-Alpha	RCV01	\$10,299.95	Government only sales
AOR AR-One	RCV12-G	\$4,849.95	Government only sales
AOR AR-One-C	RCV13-G	\$5,299.95	Government only sales
AOR SR-2200	RCV24-G	\$1,169.95	Government only sales
Icom IC-R1500	RCV25-G	\$599.95	Government only sales
Icom PCR-1500U	RCV15-G	\$479.95	Government only sales
Icom IC-R2500	RCV52-G	\$999.95	Government only sales
Icom R-8500	RCV14-G	\$1849.95	Government only sales
Icom R-9500	RCV27-G	\$13,500.00	Government only sales

Discontinued radios/scanners that are capable of air show monitoring

Alinco	DJ-X2T, DJ-X10T
AOR AR-16B, AR-1000, AR-1500, AR-2515, AR-2700, AR-3000AB, AR-5000+3B, AR-7000B, AR-8000, AR-8200B, AR-8600B	
Icom IC-R1, IC-R2, IC-R3, R10, R100, R7000, R7100, PCR-100, PCR-1000, PCR-1500	
Kenwood	RZ-1
Radio Shack	Pro-2004, Pro-2005, Pro-2006, Pro-43
Uniden	BCT-15*, BC-296*, BR-330T*, BC-796***, BCD-396T***, BCD996T***
WinRadio	WR-1000i/e, WR-1500i/e, WR-3000i-DSP, WR-3100i-DSP
Yaesu	VR-120, VR-120D

* includes trunk capability

** Includes APCO-25 digital decoder

***Includes APCO-digital/trunk capability



Military Demonstration Teams 2010 Performance Schedule

These are the schedules that were available at presstime for the various U.S. military aero demonstration and parachute teams that perform at air shows and other civilian events. More are still to be released, and you can keep up with the latest schedules, changes, additions, cancellations and updates on our *Milcom Monitoring Post Blog* at <http://mt-milcom.blogspot.com/>

If security levels increase in a base to Threat Condition "Bravo" or above, many military installations will not have public air shows. Consequently, demonstration schedules dates listed below are subject to change or cancellation without notice.

Demonstration Group Abbreviations:

BA US Navy Blue Angels
BD US Army Black Daggers
GK US Army Golden Knights
LF US Navy Leap Frogs
SB Canadian Forces Snowbirds
SW US Army Silver Wings
TB US Air Force Thunderbirds

Abbreviations

AFB Air Force Base
ARB Air Reserve Base
CFB Canadian Forces Base
MCAS Marine Corps Air Station
NAF Naval Air Facility
NAS Naval Air Station

Dates Group: Locations Website

March 13
BA/BD: NAF El Centro Airshow - NAF El Centro, CA
www.marines.mil/community/Pages/EventDetails.aspx?EventID=29228

March 16-19
GK: Panama City, FL/South Padres Island, TX

March 20-21
BA: MacDill Airfest - MacDill AFB, FL
www.macdill.af.mil/
TB: Aerospace and Arizona Days - Davis Monthan AFB, AZ
www.dm.af.mil/

March 27-28
BA: Wings Over South Texas Air Show - NAS Kingsville, TX
www.cnic.navy.mil/Kingsville/index.htm
TB: Maxwell-Gunter Open House & Airshow - Maxwell AFB, AL
www.maxwell.af.mil/
GK: Open

April 3-4
GK: Easter Weekend

April 10-11
BA: NAS Key West, FL
www.cnic.navy.mil/keywest/index.htm
TB: Eglin AFB Open House and Air Show - Eglin AFB, FL
www.eglin.af.mil/airshow2010.asp
GK: Maxwell AFB, AL

April 17
BA: Charleston Air Expo 2010 - Charleston AFB, SC
www.charlestonairexpo.com/

April 17-18
TB: Sun'n Fun Fly-In - Lakeland, FL
www.sun-n-fun.org/
GK: Open

April 24
SB: Final Practice

April 24-25
BA: Vidalia Onion Festival Air Show - Vidalia Regional Airport, GA
www.vidaliaonionfestival.com/
TB: Barksdale AFB Open House and Air Show - Barksdale AFB, LA
www.barksdaleairshow.org/
GK: Air Lauderdale Beachfest - Ft. Lauderdale, FL
www.airlauderdale.com/andGalena,IL

April 28
SB: Acceptance Show

May 01
TB: Dyess AFB Open House & Air Show - Dyess AFB, TX
www.dyess.af.mil/

May 02
TB: Altus AFB Airshow - Altus AFB, OK
www.altus.af.mil/

May 01-02
BA: Sound of Speed Airshow - Rosecrans Memorial Airport, St. Joseph, MO
www.airshownetwork.com/show.php?id=86
SB: Canadian Aviation Expo - John C. Munro Hamilton International Airport, ON
www.canadianaviationexpo.com/
GK: Open

May 08-09
BA/GK: Tuscaloosa Air Show - Tuscaloosa Regional Airport, AL <http://tuscaloosa.schultzairshows.com/>

May 08-09
TB/GK: Shaw Fest '10 - Shaw AFB, SC
www.shaw.af.mil/

May 13
SB: Thunder Over Niagara - Niagara Falls International Airport, NY
www.thunderoverniagara.com/

May 15-16
SB: MasterCard Memorial Cup - Brandon, MB <http://mastercardmemorialcup.com/>
BA/GK: Andrews AFB Joint Service Open House - Andrews AFB, MD
www.andrews.af.mil/
TB: Columbus AFB, MS
www.columbus.af.mil/
SB: Neepeawa Air Show 2010 - Neepeawa Airport, MB
TB: Thunder Over the River - Grand Forks AFB, ND
www.grandforks.af.mil/

May 22
BA: MCAS Cherry Point Air Show - MCAS Cherry Point, NC
www.cherrypointairshow.com/
GK: Open

May 22-23
BA: USNA, Annapolis, MD
www.usna.com
TB: US Air Force Academy, CO
www.usafa.af.mil/

May 26
BA: USNA, Annapolis, MD (fly-over)
www.usna.com
BA/GK: Bethpage Federal Credit Union New York Air Show at Jones Beach - Wantagh, NY (Jones Beach)
www.jonesbeachairshow.com/
TB/GK: Southern Wisconsin Air Fest - Janesville, WI
www.swairfest.org/

May 28
BA: Chippewa Valley Air Show - Chippewa Valley Regional Airport, Eau Claire, WI
www.chippewavalleyairshow.com/
TB/LF: OC Air Show 2010 - Ocean City, MD <http://ocairshow.com/>
Listen to live coverage of the show streamed on WQMR 101.1 at www.wqmr.com/

May 29-30
SB: Borden Canadian Forces Day - CFB Borden, ON
www.airshows.aero/OrgProfile/1945
GK: Florence, SC

June 05-06
SB: Victoria Navy, BC
BA/GK: Milwaukee Air and Water Show - Lakefront Milwaukee, WI
www.milwaukeeairshow.com/
TB: Québec International Air Show - Québec City, QC Canada
BA/GK: Cape Girardeau Regional Air Festival - Cape Girardeau, MO
www.capeairfestival.com/
TB: Star Spangled Salute - Tinker AFB, OK
www.starspangledsalute.com/
SB: Waterloo Aviation Expo & Airshow - Kitchener, ON
www.waterlooairshow.ca/

June 12
SB: St George, NB

June 12-13
SB: Charlottetown, NB

June 19-20
BA: Great Minnesota Air Show - St. Cloud, MN
www.greatminnesotairshow.com/
TB: Rhode Island Open House and Air Show - North Kingston, RI
www.riairshow.com/
GK: Findlay, OH

June 24
SB: Halifax Navy, NS

June 26
SB: Canada Day

June 26-27
GK: Madison, WI/Dubuque, IA
BA: National Cherry Festival Air Show - West Arm of Grand Traverse Bay, Traverse City, MI
www.cherryfestival.org/events/airshow/blue_airshow.php
SB: Vintage Wings of Canada - Gatineau-Ottawa Executive Airport, QC
www.vintagewings.ca/
GK: Fort Bragg, NC

July 01
SB: Calgary Stampede - Calgary, AB

July 03
BA: Pensacola Beach Air Show - Pensacola Beach, FL
www.visitpensacolabeach.com/what/airshow.asp

July 03-04
TB/GK: Gary's South Shore Air Show - Gary, IN
www.garyairshow.com/
GK: Mid-season break

July 04
GK: Mid-season break

July 09
GK: Mid-season break

July 10
GK: Mid-season break

July 10-11
GK: Mid-season break

July 13-26
GK: Mid-season break



Photo credit: Kevin Burke

July 17-18 BA: Dayton Air Show - Dayton International Airport, OH
www.usats.org/
 TB/BD: Duluth Air & Aviation Expo - Duluth, MN
www.duluthairshow.com/2010/index.html

July 21 TB: Cheyenne Frontier Days - Cheyenne, WY
www.cfdrodeo.com/
 SB: Dawson Creek Airshow - Dawson Creek Airport, BC
www.tourismdawsoncreek.com/event_airshow.php

July 24 SB: Yellowknife International Airshow - Yellowknife Airport, NT

July 24-25 BA: Idaho Falls Air Show - Idaho Falls, ID
 TB: Fairchild AFB Air Show - Fairchild AFB, WA
www.fairchild.af.mil/

July 31-Aug 01 BA/SB: Arctic Thunder Air Show 2010 - Elmendorf AFB, AK
www.alaskaairshow.org/
 TB/GK: Rockford Airfest 2010 - Rockford, IL
www.flyrfd.com/
 GK: Johnstown, PA

August 04 SB: Wings Over Whitecourt Airshow - Whitecourt, AB

August 07-08 BA: Seafair 2010 Air Show - Seattle, WA
www.seafair.com/
 TB: Moffett Field Air Show - Moffett Field, CA
 SB: Wetaskiwin Air Show - Wetaskiwin, AB
www.wetaskiwinairshow.com/
 GK: Open

August 13-15 SB: Abbotsford International Airshow - Abbotsford, BC
www.abbotsfordairshow.com/

August 14-15 BA/GK: Chicago Air and Water Show - Chicago, IL
www.explorechicago.org/city/en/things_see_do/event_landing/special_events/mose/chicago_air_water.html
 TB: Abbotsford International Airshow - Abbotsford, Canada
www.abbotsfordairshow.com/

August 21-22 TB: Westfield International Airshow - Westfield (Barnes Air National Guard Base Open House), MA
www.barnesairport.com/news/events-archives/77-westfield-international-airshow-returns-in-2010
 SB: Windsor International Air Show - Windsor, ON
 GK: Kansas City, MO

August 25 TB/GK: Atlantic City Air Show - Thunder over the Boardwalk - Atlantic City, NJ
www.atlanticcitynj.com/acairshow.aspx
 SB: Bagotville Airshow 2010 - Bagotville, QC
 BA/GK: Wings of Hope 2010 - Portsmouth, NH
www.peaseairshow.com/

August 28-29 TB/GK: Coney Island Air Show - Brooklyn (Coney Island), NY
 SB: Val d'Or International Airshow - Val d'Or, QC
 SB: Brantford Airshow 1010 - Brantford, ON
www.brantfordairshow.com/

September 01 TB/GK: Thunder over the Blue Ridge Airshow - Martinsburg, WV
www.martinsburgairshow.com/

September 04-06 BA/GK: Cleveland National Air Show - Cleveland, OH
www.clevelandairshow.com/
 SB: Canadian International Airshow - Toronto, ON
www.cias.org/

September 07 SB: VandenBos Airshow - Ontario

September 11 SB: Nova Scotia International Air Show - Shearwater, NS
www.nsairstow.ca/

September 11-12 BA/GK: Airpower over the Midwest - Scott AFB, IL
www.scott.af.mil/
 TB/GK: Wings Over Pittsburgh - Coraopolis (Pittsburgh), PA
www.wingsoverpittsburgh.com/

September 18-19 BA: NAS Oceana Air Show - NAS Oceana, VA
www.oceanaairshow.com/
 TB/GK: Wings over Whiteman - Whiteman AFB, MO
www.wingsoverwhiteman.com/
 SB: US National Championship Air Races - Stead Field Reno, NV
www.airrace.org/

September 25-26 BA: Blues on the Bay - MCAS Kaneohe Bay, HI
www.bluesonthebay.org/
 TB: McConnell AFB Open House 2010 - McConnell AFB, KS
www.mcconnell.af.mil/
 SB: Chico Air Show 2010 - Chico, CA
www.chicoairshow.org/
 GK: Open

October 01-03 BA/SB/GK: MCAS Miramar Air Show - MCAS Miramar, CA
www.miramarairshow.com/

October 02-03 TB: California International Airshow - Salinas, CA
www.salinasairshow.com/

October 09-10 BA: San Francisco Fleet Week Air Show - San Francisco, CA
 TB/GK: Airpower Arkansas - Little Rock AFB, AR
www.littlerock.af.mil/
 SB: Daytona, FL

October 16-17 BA/SB/GK: Wings Over Marietta - Dobbins AFB, GA
www.dobbins.afrc.af.mil/
 TB: Amigo Airshow - El Paso, TX
www.amigoairshow.org/

October 22-23 SB: Year End/40th Gala

October 23-24 BA: NAS Jacksonville Air Show - NAS Jacksonville, FL <http://airshow.jacksonville.com/>
 TB: Wings Over Houston Air Show - Houston, TX
www.wingsoverhouston.com/
 GK: US Army Ten-Miler - Washington, DC
www.armytenmiler.com/

October 30-31 BA/GK: Fort Worth Alliance Air Show - Ft. Worth Alliance, TX
www.allianceairshow.com/
 TB: Cocoa Beach Air Show - Cocoa Beach, FL
www.cocoabeachairshow.com/

November 06-07 BA: Wings Over Homestead - Homestead AFB, FL
www.wingsoverhomestead.com/
 TB: Lackland AirFest '10 - Lackland AFB, TX
www.lackland.af.mil/airshow/index.asp
 GK: Open

November 11-14 GK: Fort Bragg NC

November 12-13 BA: Blue Angels Homecoming Air Show - NAS Pensacola Open House - NAS Pensacola (Sherman Field), FL
www.naspairshow.com/

November 13-14 TB: Aviation Nation 2010 - Las Vegas Air Show - Nellis AFB, NV
www.nellis.af.mil/
 BD: VNA Airshow - Stuart, FL <http://www.vnaairshow.com/>

December 04-05 GK: Army-Navy Game - Philadelphia, PA

MT AIR SHOW RESOURCE GUIDE

For the latest schedule (updates, additions and changes) and equipment suppliers, check the individual links below.

Canadian Forces Snowbird Schedule - <http://mt-milcom.blogspot.com/2010/01/15-wing-moose-jaw-saskatchewan-canadian.html>

Canadian Forces Skyhawks Parachute Team - www.army.forces.gc.ca/land-terre/skyhawks/index-eng.asp

Comtek Communications Gear Bandplan - www.comtek.com/download/ATfrequency_chart.pdf

Grove Enterprises - www.grove-ent.com

Milcom Monitoring Post - <http://mt-milcom.blogspot.com/>

Monitoring Times website - www.monitoringtimes.com

Universal Radio - www.universal-radio.com

US Air Force Air Combat Command Aerial Events - www.acc.af.mil/aerialevents/
 Note: ACC currently has six demonstration (demo) teams: A-10 East from Moody AFB, A-10 West from Davis-Monthan AFB, F-15E East Strike Eagle from Seymour Johnson AFB, Viper (F-16) East from Shaw AFB, Viper (F-16) West from Hill AFB, and F-22 Raptor East from Langley AFB.

US Air Force Thunderbirds - <http://thunderbirds.airforce.com/>

US Air Force Thunderbirds Schedule - <http://mt-milcom.blogspot.com/2009/12/usaf-thunderbirds-2010-official-show.html>

US Army Aviation Heritage Flight - www.armyav.org/
 Note: The AAVH consist of the Sky Soldiers Demo Team, Cobra Demo Team, and the Huey Ride Program/

US Army Black Daggers - <http://news.soc.mil/blkdgrslg/daggerhome.htm>

US Army Golden Knights - www.usarec.army.mil/hq/goldenknights/

US Army Golden Knights Schedule - <http://mt-milcom.blogspot.com/2009/12/us-army-golden-knights-2010-schedule.html>

US Army Silver Wings - <https://www.benning.army.mil/silverwings/>

US Navy Aerial Event Support - <http://www.navy.mil/navco/display.asp?page=aviation.html>
 Note: US Navy Tactical Demonstration units consist of the F-18C East, F-18F East, F-18C West, and F-18F West aircraft.

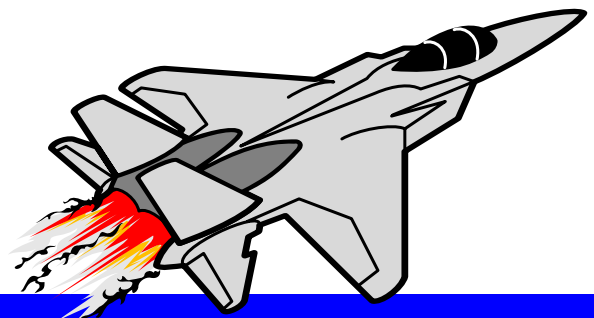
US Navy Blue Angels - www.blueangels.navy.mil/index.htm

US Navy Blue Angels Schedule - <http://mt-milcom.blogspot.com/2009/12/us-navy-blue-angels-2010-2011-schedule.html>

US Navy Leap Frogs - www.leapfrogs.navy.mil/

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