

Monitoring the Air Show Experience

The Annual MT Air Show Guide

By Larry Van Horn, MT Assistant Editor, N5FPW



Photo courtesy USAF Thunderbirds

Air Show! Nothing stirs up the aircraft enthusiast's juices more than those two magical words. And every year, from March through November, thousands travel all around the country each weekend to watch the action, as military and civilian aero teams put their aircraft through the paces to entertain and perform.

While there is nothing quite as thrilling as going out to one of these public air shows and watching the military or civilian demonstration teams strut their stuff in front of thousands of aircraft fanatics, you can add to the visual experience by monitoring the performing teams' radio communications. With a radio scanner in hand, you will experience a whole new perspective of the show that few attendees will realize or enjoy.

Since the new 2007 air show season starts in the second week of March, we proudly present our eighth annual *Milcom Air Show Guide*. In this feature we will give you the frequencies to monitor, and on page 52 you'll find the recommended list of air show radio equipment and schedules for the major military flight demonstration teams for the coming season.

Where do you hear the action?

From time to time, frequencies for air show teams do change. Back in 2004, the Blue Angel team made some major changes after our annual guide was in the hands of *MT* readers. But when our annual list didn't have the new frequencies, seasoned veterans knew the right bands to target to look for the new frequencies being used.

So, what bands do veteran radio monitors search for new frequencies? You should concentrate on the bands listed below to locate air

show activity in your area (all frequencies in this article are in MHz).

- | | |
|---------------|--|
| 118.0-137.0 | 25 kHz search steps (AM mode) Note: We have reports of a lot of 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 civilian and military demo aircraft communications |
| 122.7-123.575 | 25 kHz search steps (AM) |
| 138.0-144.0 | 12.5 kHz search steps (AM/Narrowband FM) |
| 148.0-150.8 | 12.5 kHz search steps (AM/NBFM) |
| 225.0-390.0 | 25 kHz search steps (AM) |
| 390.0-400.0 | 12.5 kHz search steps (AM/NBFM) |
| 406.1-420.0 | 12.5 kHz search steps (NBFM) |

U.S. Navy Blue Angels

The U.S. Navy (USN)/Marine Corps (USMC) military team is represented on the air show circuit by the Blue Angels flying their F/A-18 Hornet aircraft.

A Blue Angels flight demonstration exhibits the skills possessed by all naval aviators. It includes the graceful aerobatic maneuvers of the four-plane Diamond Formation, in concert with the fast-paced, high-performance maneuvers of its 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 team is stationed at Forrest Sherman Field, Naval Air Station Pensacola, Florida, during the show season. However, the squadron spends January through March training pilots and new team members at Naval Air Facility El Centro, California.

The Blue Angels are scheduled to fly 66 air shows at 35 air show sites in the United States during the 2007 season, as the team celebrates 20 years of flying the F/A-18 Hornet. Last season, more than 15 million spectators watched the Blue Angels perform. Since its inception in 1946, the Blue Angels have performed for more than 427 million fans.

The other major piece of hardware in the squadron is their C-130 Hercules transport aircraft, affectionately known as "Fat Albert." 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" flies more than 140,000 miles during the course of a show season.

After coping with all the frequency changes noted during the 2004 season, the 2006 season was relatively stable. The primary AM mode UHF frequencies monitored during last season include:

Frequency	Usage
237.800	Solos <Channel 8>
255.200	Circle and arrivals discrete <Channel 17>
275.350	Diamond <Channel 9>
284.250	Show Box/Delta <Channel 16>
289.800	Aerial Refueling
302.100	Fat Albert <Secondary>
305.500	Fat Albert Primary <Channel 10>
346.500	Ground start/rollout/maintenance <Channel 18>

There were some other UHF frequencies that were not widely reported last season. These included – 251.600 302.150 307.700 (AM).

During the 2005 show season, the Blues started using a new ground cart for show communications. Two new narrowband FM splinter frequencies/designators were found in use

- 139.8125 <Alpha/Channel 3> and 142.6125 <Bravo/Channel 3A>. Last year another possible new narrowband FM frequency was reported - 141.5625 <Charlie> MHz.

We believe that the older widely reported 162-174 MHz Blue Angel FM LMR frequencies are apparently no longer used. But for the time being I have not deleted them from this list, as I did receive reports last year from some west coast monitors claiming that some of them were still being used.

I encourage those of you with Signal Stalker and Close Call capability to watch the LMR spectrum from 138-144 MHz closely for new additional 12.5-kHz splinter frequencies being used by the team's ground crews.

Other frequencies commonly reported for the team include:

Cross Country Air-Air

138.250 143.600 237.800 238.150
275.350 284.250 (AM)

Maintenance/Ground communications [Old communications comcart/ground frequencies]

142.000 143.600 163.000 164.900
165.225 167.500 167.800 168.900
169.400 170.900 (NBFM)

Tower-Comm Cart (May no longer be used)

173.825 (NBFM)

Tower Observer

143.000 (AM)

Other UHF frequencies that have been reported in past years, but not reported last season include:

236.450 249.625 254.500 256.250
262.850 263.350 264.350 264.550
265.000 273.300 286.000 299.650
381.000 (AM)

You can learn more about the Blue Angels flight demonstration team on their internet website at www.blueangels.navy.mil/index.htm

U.S. Air Force Thunderbirds

The premier U.S. Air Force (USAF) flight demonstration team is known as the Thunderbirds. This team uses six F-16C Fighting Falcon aircraft, performing formation flying and solo routines. 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 frequency list below has been in use by the team over the last eight air show seasons. It should be noted that at some performances the 143.850 and 235.250 MHz roles are reversed from what is published below.

Frequency	Usage
139.800	Possible New VHF (AM)
140.400	Support "T-Bird Ops"/Cross country air-to-air (AM)
141.850	Pre-take/Four ship/Diamond formation linked to PA system/Cross country air-to-air (AM) <Channel 2>
142.575	Program audio/Air-Ground communications (NBFM)
143.850	Diamond formation/Cross country air-to-air (AM) <Channel 1> Re-transmission to public through the

235.025	team PA system.
235.200	Unknown usage [Tentative]
235.250	Thunderbird Control/ComCart (AM)
235.250	Pre-Engine Start and Solo aircraft on/off show center/ linked to PA system (AM) <Uniform 1>
322.950	Engine Starts/Solo aircraft (5-6) Air-Air (AM) <Uniform 2>

Maintenance/Ground teams (NBFM/P25 digital)

142.175	Analog
143.900	Analog
216.7275	Announcer PA Feed
216.9775	Team Airshow frequency feeds
413.000	Digital
413.025	Analog/digital <Channel 1>
413.100	Analog/digital) <Channel 2>
413.250	Analog
413.275	Analog
413.350	Digital
413.375	Digital
901.500	Comm Cart Headset
905.350	Comm Cart Headset

You can learn more about the T-Birds on their website at www.thunderbirds.acc.af.mil/

Other DoD Military Flight Demo Teams

In addition to the two units mentioned above, the Navy and the Air Force also have other flight demonstration units. Other branches of the Department of Defense (DoD) and David Shultz air shows (one of the premier air show companies) use a wide variety of VHF and UHF frequencies during air shows. Some of the frequencies recently reported for these organizations are listed below. (AM mode is used for all the frequencies listed below unless otherwise indicated.)

David Shultz airshows (civilian)	118.700	135.650	238.150	350.300
Heritage Flight	118.500	122.475	123.150	127.150
	136.575	136.675	238.150	376.025
	384.550			
US Air Force A-10 Thunderbolt demonstration teams	122.475	123.150	123.475	136.575
	138.050	138.100	138.200	138.250
	138.300	138.475	138.500	139.900
	139.625	139.725	139.800	139.975
	140.400	141.675	142.200	225.500
	236.850	269.900	283.700	305.400
	327.700	341.500	343.000	343.000
	384.550			
US Air Force B-1B Bomber Flyover	238.150			
US Air Force B-2 Bomber Flyovers (509BW)	290.225	335.550	370.900	388.850
US Air Force B-52 Bomber Flyovers	376.025			
US Air Force F-15 Eagle East demonstration team (Replaced by the USAF F-22 Demo Team)	123.150	376.025	384.550	
US Air Force F-15 Eagle West demonstration team	123.150	376.025	384.550	
US Air Force F-16 Fighting Falcon demonstration teams	136.575	136.675	365.700	376.025
	283.700	384.550		
US Air Force F-22 Raptor East demonstration team	238.900	290.225	292.700	387.200



"Fat Albert" courtesy USN Blue Angels

US Air Force AETC T-6 Texan East Coast Team	118.900	122.925	123.150	123.400
	127.150	138.400	226.100	283.700
295.000 Note: Ground support team reportedly uses FRS radios. It has been reported that last season was the last year for this team due to fiscal issues.				
US Air Force Combat search and rescue (SAR) demonstrations	127.150	138.100	139.700	225.450
	236.000	242.000	251.900	252.800
	259.000	278.800	280.500	282.800
	287.500	381.000	384.550	
US Coast Guard aircraft/SAR demonstrations	122.900 (SAR)			
	157.050 (Drug Interdiction demo - NBFM)			
	157.075 (Command Post -NBFM)			
	237.900	282.800	326.150	345.000
	379.050			
US Coast Guard HITRON interdiction demo	157.050 (NBFM)			
US Navy F/A-18 Demo Team	376.025			
US Navy LCAC comms	40.400 (NBFM)			
US Navy Light Amphibious Vehicle comms	30.000 (NBFM)			
US Navy S-3 Viking aircraft demonstrations	263.400	325.400	325.800	
US Navy SAR demonstrations	242.500	282.000	283.100	

DoD Military Parachute Demonstration Teams

The premier DoD military parachute team 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 often reported frequencies of 122.775, 123.400, 123.475, and 123.500 MHz. You should also keep the following plugged into your scanner for possible GK team activity - 32.300, 32.400, 122.575, 124.875, 126.200, 238.000, 284.900 and 367.700 MHz. And (in an exclusive tip to MT readers), you should also watch for a possible new VHF frequency of 142.800 MHz for Golden Knight radio activity in the near future. You can learn more about the Golden Knights on their official website at www.usarec.army.mil/hq/goldenknights/Webpage2005_content.html

The US Army actually has more parachute teams than just the Golden Knights. The U.S. Army Special Operations Command parachute team is known as the Black Daggers (see MT Milcom May 2004). Several frequencies have been uncovered for them during the last three seasons and these include - 123.450 136.000 136.500 138.650 237.300 238.150 MHz. The team has a very nice website located at <http://news.soc.mil/blackdaggers/blackdaggers.htm>

Another Army parachute outfit is the Silver Wings. This is the Fort Benning, Georgia, Command Exhibition Parachute Team. They have been monitored on 34.650 and 44.900 MHz. Both these frequencies were common landing zone frequencies in the area they were performing in. So, in case you aren't hearing them at a performance you attend, I suggest a rigorous search of the VHF-low band frequencies be initiated if neither of the two frequencies above is heard.

In addition to the VHF low band frequencies I have 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 397.500 MHz. See our comments below about programming ISR, GMRS and FRS channels for air show monitoring. The Silver Wings team website is located at <https://www.infantry.army.mil/silverwings/>

The U.S. Army has several more teams, but we do not have frequency information for them. We would appreciate communication 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
- Screaming Eagles (101st Airborne Division)
Fort Campbell, Kentucky
- 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: 122.450, 123.450 and (no, this is not a misprint) 151.625 MHz, a nationwide business itinerant frequency.

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 270.000 (AM) and 407.500 MHz (NBFM 131.8-Hz PL tone) nationwide over the last several years.

GMRS Frequencies

During the 2001 and 2002 seasons I received several reports that the Golden Knights were using GMRS (General Mobile Radio Service) frequencies 462.625, 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
462.550	467.550	462.5625
462.575	467.575	462.5875
462.600	467.600	462.6125
462.625	467.625	462.6375
462.650	467.650	462.6625
462.675	467.675	462.6875*
462.700	467.700	462.7125
462.725	467.725	

*(462.675/467.675 National Emergency Frequency pair)



Photo courtesy USA Silver Wings

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

397.4750	Channel 6
397.5500	Channel 7
397.9500	Channel 8
398.0500	Channel 9
399.4250	Channel 10
399.4750	Channel 11
399.7250	Channel 12
399.9250	Channel 13
399.9750	Channel 14

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 FRS (Family Radio Service) radios for communications during shows. You will also find military monitoring enthusiasts attending an air show using FRS radios to coordinate meeting 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	Channel 1
462.5875	Channel 2
462.6125	Channel 3
462.6375	Channel 4
462.6625	Channel 5
462.6875	Channel 6
462.7125	Channel 7
467.5625	Channel 8
467.5875	Channel 9
467.6125	Channel 10
467.6375	Channel 11
467.6625	Channel 12
467.6875	Channel 13
467.7125	Channel 14

The government version of the Family Radio Service is known as the Inter-Squad Radio or ISR. As noted 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	Channel 1
397.1250	Channel 2
397.1750	Channel 3
397.3750	Channel 4
397.4250	Channel 5

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 as ground support at several air shows.

The CAP is in the process of transiting to narrowband allocations/equipment during 2007 at a cost of \$23 million plus to the taxpayers. We have included both the old assignments as well as the new assignments that we found in the public domain.

Frequencies (variety of modes) until October 1, 2007

143.750	143.900	148.125	148.1375
148.150	148.5375	148.975	149.5375

MHz

Frequencies (variety of modes) starting in April 2006 and will be the norm after October 1, 2007

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

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: 123.325 227.600 242.600 243.400 245.500 245.750 246.500 272.100 (Primary) 284.900 299.500 333.300 340.100 MHz.

A new Snowbird VHF frequency has now been noted in use during the last two seasons



Photo courtesy USAF Thunderbirds

– 116.000 MHz (AM), 243.400 and 272.100 are the only two UHF frequencies reported in 2005-6.

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. A wide variety of frequencies are used by these teams in the civilian aviation band. If you load your scanner with the following frequencies, you shouldn't miss out on communications used by the civilian acts.

122.725	122.750	122.775	122.825
122.850	122.875	122.925	122.950
122.975	123.025	123.050	123.075
123.150	123.175	123.300	123.325
123.350	123.400	123.425	123.450
123.475	123.500	129.650	129.925
136.575	136.975		

Some specific frequencies reported to us for other foreign military and US civilian flight demonstration teams are included in the list that follows:

Civilian Flight Demonstration Teams

Aeroshell Aerobatics Team 123.150
 Air Force Reserve Biplane (Ed Hammil) 123.150
 All American Firebirds Flight Demonstration Team 122.775
 Bud Light Air Force (ex- Coors Microjet) 122.925 123.350 123.475
 Civilian Air Show Discrete Common 123.150
 CJ-6/YAK-52 Flight Formation Team 122.775
 Flight for Diabetes (Michael Hunter) 123.425
 Firecat (Rich Perkins) 123.500
 Flying Colors Hang Glider Aerobatic (Dan Buchanan) 123.300 132.950
 French Connection Air Show 122.925 122.975 129.975
 Geiko Extra 300 – Tim Webber 123.150
 Ian Groom's FedEx Red Bull Aerobatic Team 122.725 122.775 122.825 122.925 123.150 123.350
 Iron Eagles Aerobatic Team 122.925
 Jim LeRoy Bulldog Team 123.150
 John Klaff 123.475
 L39 Patriots 127.300
 Lima Lima Flight Team 123.150 123.175 123.425

Manfred Radius Glider Aerobatics Team 123.150
 North American Jet Air Show Team 122.775 122.925 129.650 129.925
 Northern Lights Aerobatic Team 123.325 136.975
 Oreck Vacuum Cleaners Aerobatic Demo (Frank Ryder) 122.825 123.425 123.450
 Otto the Helicopter 123.150 123.300
 Patty Wagstaff Air Shows Inc 122.750 123.475
 Pitts Special U.S. Air Force Reserve 123.150
 Rayban Gold Aerobatics Team 122.925
 Red Baron Stearman Squadron 122.725 122.775 123.150
 Red Eagles Flight Demo Team 123.150 123.425 123.475
 Sean Tucker Power Aerobatics 122.875 122.950 123.150 123.450 123.475
 SIAI Marchetti SF260 Debbie Gary 123.150
 Showcopters 123.150 134.700
 Sky Soldiers Demonstration Team (Army Aviation Foundation) 123.025 242.400
 Skytypers Team 122.750 122.775 123.450
 Swift Magic Aerobatic Team 122.775 122.925
 Team Red 123.350
 Tora Tora Tora Warbirds Team (Commemorative Air Force) 122.850 122.875 123.150 123.450 469.500 469.550

Foreign Military Flight Demonstration Teams

Asas de Portugal, Esquadra 103 (Wings of Portugal 103 Squadron) Flight Team 262.150
 Blue Eagles Royal Army Air Corps Flight Team (UK) 136.975
 Blue Tango Helicopters 123.600
 Brazilian Air Force Team (Brazil) 130.550 130.650 132.250
 British Army Red Devils Parachute Team (UK) 462.625
 Canadian Forces Skyhawks Parachute Jump Team (Canada) 123.000 294.700
 Falcons Royal Air Force Parachute Jump Team (UK) 255.100 465.100
 Frecce Tricolori Military Flight Team (Italy) 123.475 (Ground Secondary) 140.600 (Ground Primary) 362.625 (Primary) 263.250 (Secondary)

Grasshopper Helicopter Team (Netherlands) 281.100
 Halcones Military Flight Team (Chile) 136.175
 La Patrouille Adecce Air Force Flight Team (France) 121.850 123.600 138.450 141.825 143.100 143.850 242.650
 La Patrulla Aguila Military Flight Team (Spain) 130.500 252.500
 Le Royal Jordanian Teams (Jordan) 123.500
 Les Breitling (Switzerland) 127.350
 Les Iskry (Poland) 123.600
 Marche Verte [Green March] (Morocco) 135.000 135.925 (Ground) 135.500 (Air-to-Air)
 Military Stars Flight Team (Turkey) 264.400 279.600
 Patrouille Suisse Military Flight Team (Switzerland) 288.850
 Red Arrows Royal Air Force Flight Team (UK) 242.200 242.050 243.450 253.450

In Closing

It is always difficult to predict what a new season will bring, so I strongly encourage readers to watch my *MT Milcom Blogspot* (<http://mt-milcom.blogspot.com/>) and the *Monitoring Times* home page for any late breaking news and frequency information during the 2007 air show season.

If you attend an air show in 2007 and you find this list useful, please pass along any frequencies that you monitor, whether it is on this list or not. This will greatly aid in the production of next year's listing. You can reach me via e-mail at larryvanhorn@monitoringtimes.com or via our snail mail address: *MT Milcom*, 7540 Highway 64 West, Brasstown, NC 28902.

Finally, I would like to extend a sincere thanks to a record 101 contributors who took the time last year to share their post-show reports with us. I want to especially thank several overseas reporters who added new material to our foreign teams section. I deeply appreciate the time and effort each of you took to let us know what you have heard at many of the air shows in 2006.

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!*

Monitoring the Air Show Experience Equipment and Schedules

In this month's lead feature on page 8 we covered the crack military flight demonstration teams and where to find the frequencies they use for air-ground coordination and other communications. Now we turn to two other important considerations for successful monitoring – Where and when can you find an air show in your area and what equipment is required to listen in?

MT Air Show Equipment List

I am frequently asked which scanner I recommend for air show monitoring. While I don't have a favorite, I have prepared the list in Table One as a purchase guide of receivers that meet all the requirements as outlined below.

Not Just Any Old Scanner Will Do

Some scanners currently being marketed and almost all 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 again narrows down our choice for air show scanners even further.

Information below 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.

Air Show Listening Tip

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**

Handheld Unit	Grove #	Price
Alinco DJ-X7	SCN03	\$169.95
Alinco DJ-X10T	SCN01	\$319.95
Alinco DJ-X2000T	SCN10	\$519.95
AOR AR-8200 Mk III	SCN51	\$579.95
Icom IC R-3	SCN07	\$349.95
Icom IC R-5	SCN02	\$199.95
Icom IC R-20	SCN20	\$509.95*
Uniden BR-330T	SCN30	\$259.95
Uniden BCD-396T	SCN47	\$524.95**

Note: The Uniden BC-296D has been on our list for several years, but has now been discontinued by Uniden.

Base/Mobile Unit	Grove #	Price
AOR AR-5000A+3B	RCV44P	\$2569.95
AOR AR-8600 Mk II	SCN11	\$889.95
JRC NRD-545	RCV21DS	\$1799.95
(Must order the optional ACC11DS VHF-UHF converter at \$349.95)		
Uniden BCD996T	SCN48	\$524.95**

** Includes APCO-digital/trunk capability
 Note: The Uniden BC-796D has been on our list for several years, but has now been discontinued by Uniden.

Computer Receivers	Grove #	Price
Icom PCR-1500	RCV15	\$599.95
Icom IC-R1500	RCV25	\$599.95 (remote head for stand alone ops)
Icom PCR-2500	RCV35	\$729.95
Icom IC-R2500	RCV52	\$899.95 (remote head for stand alone ops)
WinRadio		
WR-1550e	RCV47-E	\$549.95
WR-1550i	RCV47-I	\$499.95
WR-3150e	RCV48-E	\$1849.95
WR-3150i-DSP	RCV48-I	\$1849.95

WR-3500e	RCV49-E	\$2395.95
WR-3500i-DSP	RCV49-I	\$2395.95
WR-3700e	RCV50-E	\$2895.95
WR-3700i-DSP	RCV50-I	\$2895.95

Professional Receiver Grove # Price
 Icom R-9500 Unit has not been FCC type accepted at press deadline. Pricing available when FCC accepted.

TABLE TWO: MILITARY DEMONSTRATION TEAMS

2006 PERFORMANCE SCHEDULE

Note: 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 Navy Blue Angels
- CF18 Canadian Forces CF-18 Hornet Demonstration Group
- GK Army Golden Knights
- SB Canadian Snowbirds
- SW Army Silver Wings
- TB Air Force Thunderbirds

Base Abbreviations

- AB Air Base
- ACC Air Combat Command
- AFAF Air Force Auxiliary Field
- AFB Air Force Base
- ARB Air Reserve Base
- CFB Canadian Forces Base
- JRB Joint Reserve Base
- MCAS Marine Corps Air Station
- NAF Naval Air Facility
- NAS Naval Air Station
- TBD To Be Determined

Dates	Group: Locations
Mar 10	BA: NAF El Centro, CA
Mar 17-18	BA/GK: Davis Monthan AFB, AZ; GK: Titusville, FL
Mar 24	BA: Tyndall AFB, FL
Mar 24-25	GK: Punta Gorda, FL; TB/GK: Luke AFB, AZ
Mar 31-Apr 01	BA: MacDill AFB, FL; TB: Point Mugu NB, CA
Apr 14-15	BA: NAS Corpus Christi, TX; TB/GK: Eglin AFB, FL
Apr 21-22	BA: MCAS Beaufort, SC; GK: Charleston AFB, SC/Wilmington, NC; TB: Barksdale AFB, LA
Apr 28-29	BA: Vidalia, GA; TB: Langley AFB, VA
May 05-06	BA/GK: Offutt AFB, NE; TB/GK: Fort Lauderdale, FL

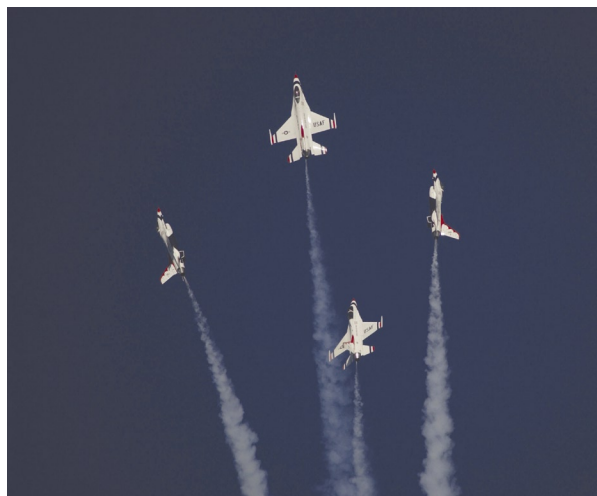


Photo courtesy Thunderbirds



Photo courtesy Golden Knights

May 12 BA/GK: Seymour Johnson AFB, NC
 May 12-13 TB/GK: McGuire AFB, NJ
 May 18-20 GK: Andrews AFB, MD
 May 19-20 BA: La Crosse, WI; GK: Ft. Jackson, SC; SB: To be confirmed; TB: Andrews AFB, MD
 May 23 BA: U.S. Naval Academy, MD; SB: Penticton, BC
 May 26-27 BA: Millville, NJ; SB: Brandon, MB; TB/GK: Wantagh (Jones Beach), NY
 May 27 GK: Charlotte, NC
 May 30 TB: U.S. Air Force Academy, Colorado (By Invitation Only Show)
 Jun 02-03 BA/GK: Rockford, IL; CF18: Southport, MB; SB: Portage-la-Prairie, MB; TB: Davenport, IA
 Jun 06 SB: Kapuskasing, ON
 Jun 09-10 BA: Tinker AFB, OK; GK: Travis AFB, CA; SB/CF18: Bagotville, QC; TB: Sacramento, CA
 Jun 13 SB: Dalhousie, NB
 Jun 16-17 BA: Fargo, ND; CF18Ottawa, ON; GK: Muncie, IN; SB: Moncton, NB; TB: Pittsburgh, PA
 Jun 20 SB/CF18: Owen Sound, ON
 Jun 23-24 BA: North Kingstown, RI; SB/CF18: St. Thomas, ON; TB: Galway, Ireland
 Jun 26 TB: Krzesiny Air Base, Poland
 Jun 27 SB: Kingston, ON
 Jun 28 TB: Mihail Kogalniceanu, Romania
 Jun 29-30 GK: Binghamton, NY
 Jun 30 SB: Cobourg, ON; TB: Ankara, Turkey
 Jun 30-Jul 01 BA: Battle Creek, MI; CF18/GK: Evansville, IN
 Jul 01 SB: Canada Day Flypast, Ottawa, ON; TB: Graf Ignatievo, Bulgaria
 Jul 04 SB: Evansville, IN; GK: Ft. Bragg, NC; TB: Aviano AB, Italy
 Jul 06 SB: Calgary Stampede Flypast Calgary, AB
 Jul 07 SB/CF18: Moose Jaw, SK
 Jul 07-08 BA/GK: Camp Grayling/Ypsilanti, MI; TB: Evreux Field, France
 Jul 13 CF18: RAF Fairford, United Kingdom
 Jul 14-15 BA/GK: McConnell AFB, KS; GK: Gary, IN; TB/CF18: RAF Fairford, United Kingdom
 Jul 18 SB: The Pas, MB
 Jul 21 BA: Pensacola Beach, FL; SB: Fort McMurray, AB
 Jul 21-22 GK: Peoria, IL
 Jul 22 SB: Edmonton Grand Prix Flypast Edmonton, AB
 Jul 25 SB: Fort St. John, BC; GK: Ionia, MI; TB: Cheyenne, WY
 Jul 25-28 GK: Sioux City, IA
 Jul 28-29 BA: Bozeman, MT; SB/CF18: Peace River, AB; TB/GK: Dayton, OH
 Aug 01 SB: Prince George, BC
 Aug 04-05 BA: Seattle, WA; GK: Janesville, WI; SB/CF18: Lethbridge, AB
 Aug 10-12 SB/CF18: Abbotsford, BC
 Aug 11-12 BA/GK: Hillsboro, OR; GK: Al-

Aug 15 toona, PA; TB: Niagara Falls, NY
 SB: Snowbirds Fly for CHILD, Kelowna, BC; TB/GK: Atlantic City, NJ
 Aug 18-19 SB/CF18: Saskatoon, SK; GK: Eau Claire, WI; TB/GK: Chicago, IL
 Aug 25-26 BA: Indianapolis, IN; GK: Kansas City, MO; SB/CF18: St. Catharines, ON; TB/GK: Otis ANGB, MA
 Aug 29 CF18: Brantford, ON; SB: Candiac, QC
 Sep 01-03 BA: St. Louis, MO; SB/CF18: Toronto, ON; TB/GK: Cleveland, OH
 Sep 04 SB: Flypast of the Captain Michael VandenBos School Toronto, ON
 Sep 08 TB: Minot AFB, ND
 Sep 08-09 BA: NAS Oceana, VA; GK: Window Rock, AZ; SB/CF18: Halifax, NS
 Sep 14-16 SB: Reno, NV
 Sep 15 TB: Hickam AFB, HI
 Sep 15-16 BA/GK: NAS Brunswick, ME
 Sep 19 SB: Tucumcari, NM
 Sep 22-23 BA/GK/SB: Millington, TN; TB/GK: El Paso, TX
 Sep 26 SB: Fayetteville, AR
 Sep 29-30 BA/SB: Salinas, CA; TB: Columbus, OH
 Oct 06-07 BA: San Francisco, CA; SB: Houston, TX; TB/GK: Pope AFB, NC
 Oct 12 SB: Year End Show Moose Jaw, SK
 Oct 13-14 BA/GK: MCAS Kaneohe Bay, HI;

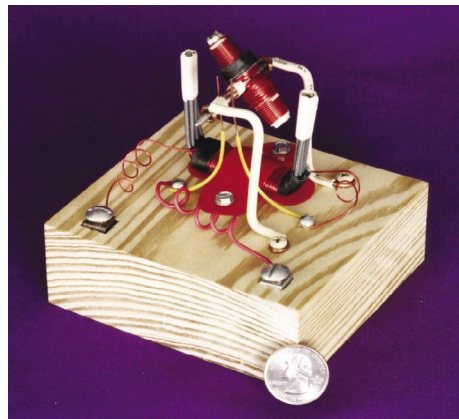
Oct 20-21 TB/GK: Miramar MCAS, CA
 BA/GK: Fort Worth (Alliance), TX; GK: Richmond, VA; TB: Moody AFB, GA
 Oct 27-28 BA/GK: Muskogee, OK; TB: New Orleans, LA
 Nov 03-04 BA: Jacksonville Beach, FL; TB/GK: NASA Cape Canaveral, FL
 Nov 09-10 BA: NAS Pensacola, FL
 Nov 10-11 Nellis AFB, NV

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Letters to the Editor continued from page 5



us pictures of her motors (shot by her husband Greg), and here they are! Should we pester Greg and Judy for the plans?!

Help Needed: Lost CW Gadget

"I used to work at the Comm Center in Laurel, MD, many years ago. During my few years working there I had to pleasure of meeting quite a few influential people in the hobby such as the Hallicrafter Collector and others ...
 "There is one that I wish I could remember ... This particular ham used to come into the Comm Center quite often with new gadgets that he made. After he became a silent key his XYL brought the last of his items for us to sell on our consignment shelf. I bought one of the items he made and have not been able to find it. It is probably under some stuff in the box that is behind that other stuff.
 "He built it inside a cabinet that resembled a Heathkit cabinet and, as all his items were, was very well made with great craftsmanship. This device allowed the user to connect to the receiver speaker and when the CW signal matched a certain

frequency it would reproduce a CW sound in its speaker without any QRM. I used it quite a bit and miss it.

"I have been looking and asking at local hamfests and on the Internet to no avail.

"You are providing a great service to several hobbies and the world community. Keep up the great work."

- de N3DNQ

N3DNQ mentioned looking for this same accessory in another letter printed in the February Letters. Steve Harper sent this suggestion in response:

"In the February issue of MT, N3DNQ wrote about finding an add-on BFO to enable to listen to SSB signals. I purchased an inexpensive (\$11) kit from Ten Tec just for that purpose. It took me about a half hour to wire it. Later, enclosing it in a small plastic 'project box' and attaching a 9V battery with Velcro™ to the outside, I had a device that worked quite well. I would just hold it against the outside of the radio, not clip anything to the antenna. The Grundig FR200 radio I used it with would drift like crazy, but with something more stable it would require less attention. The Ten Tec part is 1050 Universal BFO."

Great suggestion, Steve. Thanks to all our readers, and we hope you enjoy this month's special coverage of air show monitoring.

This column is open to your considered comments. Opinions expressed here are not necessarily those of Monitoring Times. Your letters may be rephrased or shortened for length and clarity. Please mail to Letters to the Editor, 7540 Hwy 64 West, Brasstown, NC 28902, or email editor@monitoringtimes.com
 Happy monitoring!
 - Rachel Baughn, KE4OPD, Editor