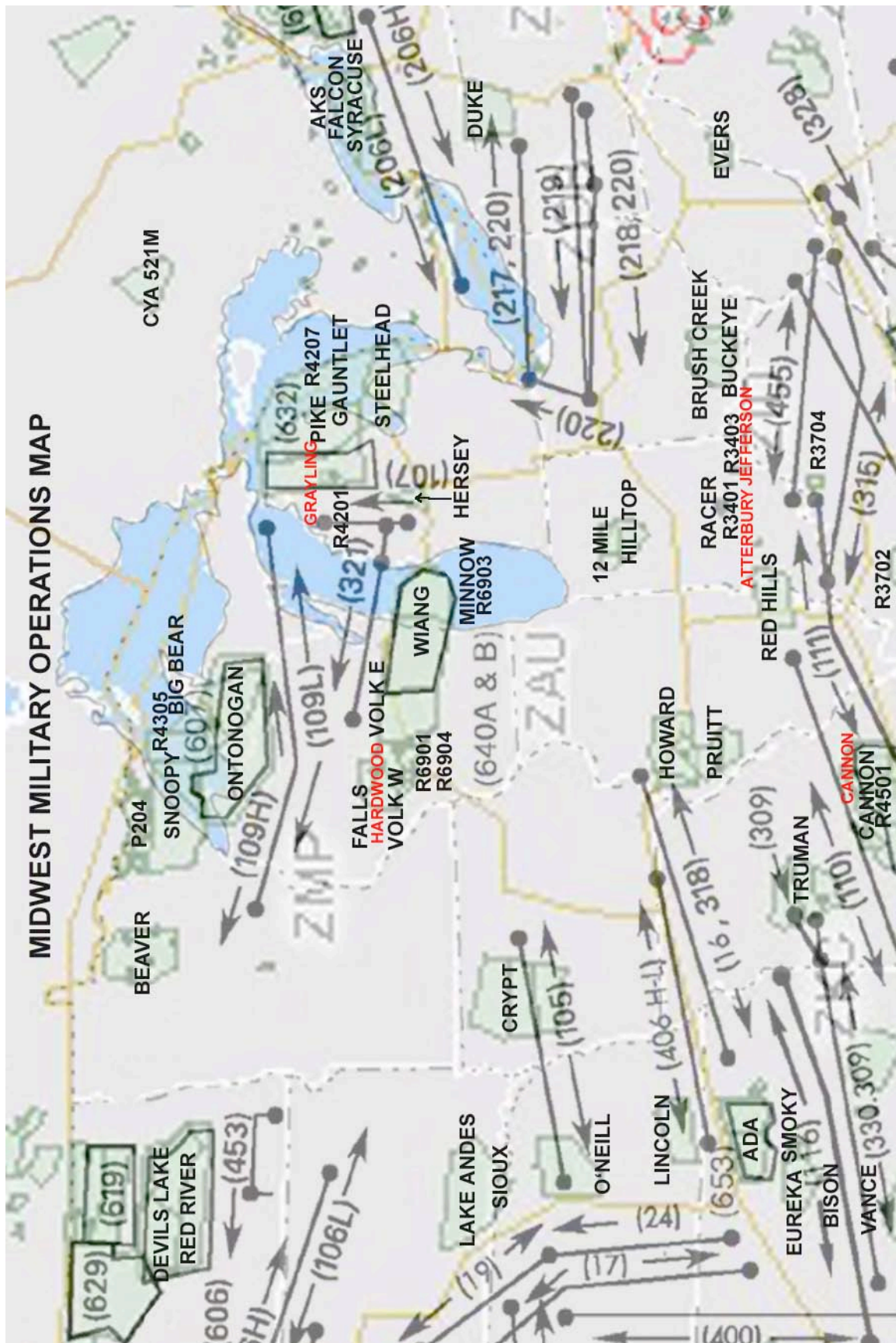


Military Monitoring



An F-16C from the Illinois Air National Guard's 183rd Tactical Fighter Wing lands at its home base - Abraham Lincoln Memorial airport in Springfield during an Air Rendezvous air show. The state capital building is on the horizon. Command post for the unit was on 138.200 (AM) VHF and 272.175 (AM) UHF.



Mid-air refuelling tracks and anchor areas:

Track	Primary	Secondary	Entry / Exit control via ARTCC			
AR16	343.500	319.700	353.500	343.700		
AR17	276.500	320.900	353.700	338.200		
AR19	295.400	320.900	360.650	322.500		
AR24	295.400	320.900	338.200	353.700		
AR105	238.900	320.900	269.000			
AR106H	295.800	320.900	269.400	306.200		
AR106L	305.500	320.900	269.400	306.200		
AR107	324.600	282.700	353.600			
AR109H	343.500	320.900	327.100			
AR109L	327.600	320.900	327.100			
AR110	327.600	319.700	277.400	346.400	319.000	
AR111	348.900	319.700	122.200	124.200	132.375	124.275 257.600 288.350 354.150
AR116	366.300	260.200	269.400	343.700	363.200	
AR206H	348.900	282.700	323.000	354.100		
AR206L	235.100	282.700	323.000	307.800		
AR217	283.900	282.700	298.950	294.650		
AR218	352.600	282.700	299.200	379.200		
AR219	366.300	282.700	363.100	288.300		
AR220	352.600	282.700	299.200	291.650		
AR309	283.900	260.200	263.100	279.600	285.400	
AR315	295.400	319.700	372.000	253.500	246.000	
AR318	240.350	260.200	343.700	353.500	370.900	
AR321	276.500	260.200	263.000			
AR328	235.100	319.700	319.900			
AR330	305.500	260.200	337.400	327.000	269.400	
AR400	228.250	364.325	281.400	397.850	288.350	387.100
AR406H	396.200	297.300	135.100	132.725	284.600	307.200
AR406L	297.300	396.200	128.750	119.600	346.300	290.400
AR453	291.900	320.900	270.300			
AR455	336.100	291.900	379.900	290.550	279.900	
AR606	366.300	320.900	270.300	364.200		
AR607	235.100	320.900	269.000	364.200		
AR619	238.900	320.900	270.300	364.300		
AR629	296.000	360.900	119.600	127.600	363.800	279.600
AR632	238.900	282.700	364.200	& See Alpena CRTC facility listing		
AR640A	305.500	320.900	298.775	283.775	346.525	
AR640B	291.900	320.900	298.775	283.775	346.525	
AR653	324.600	260.200	363.200	228.950	303.000	

Military operating areas:

MOA, Area or Facility	Frequency Information
12 Mile & Hilltop	Chicago ARTCC: 125.375 / 370.850 IN ANG Ops: 350.350
Ada	Kansas City ARTCC: 134.900 / 363.200 Ops: 353.900
AKS	
Beaver	Minneapolis ARTCC: 127.900 / 281.450 Ops: 293.300
Big Bear	Minneapolis ARTCC: 121.250 / 322.500 Ops: 399.000
Bison	Kansas City ARTCC: 134.900 / 363.200 Ops: 353.900 309.900
Brush Creek & Buckeye	Indianapolis ARTCC: 134.000 135.575 285.425 OH ANG Ops: 225.700 230.400 281.400 301.600 343.800
Cannon / R4501	Kansas City ARTCC: 133.800 / 317.500 Ops: 392.200
Crypt	Reported: 233.400 311.300
Devil's Lake	Minneapolis ARTCC: 124.200 / 270.300
Duke	Cleveland ARTCC: 124.325 / 353.850 125.875 / 338.350
Eureka	Kansas City ARTCC: 132.900 / 279.500 Ops: 290.450 390.000
Evers	
Falcon	Boston ARTCC: 257.850 158FW Tac: 396.900
Falls	Minneapolis ARTCC: 125.300 / 335.600 Ops: 346.525
Gauntlet	
Hersey	Minneapolis ARTCC: 120.850 / 322.350
Howard & Pruitt	Kansas City ARTCC: 127.275 / 327.500 Ops: 257.900
Lake Andes	Minneapolis ARTCC: 128.000 / 385.500
Lindbergh / Salem	Kansas City ARTCC: 133.400 / 323.100 Ops: 269.225 293.1 290.25
Minnow / R6903 / WIANG	Chicago ARTCC: 127.000 / 263.000 Ops: 298.775 283.775
O'Neill	Minneapolis ARTCC: 128.000 / 385.500 135.100
Ontonogan	Minneapolis ARTCC: 133.550
Pike	Minneapolis ARTCC: 125.475 / 269.450 Ops: 282.2 234.9 355.2
Racer / R3401 / Atterbury	Indianapolis ARTCC: 119.550 Ops: 383.300 269.400
Red Hills	Indianapolis ARTCC: 132.200 Ops: 254.250
Red River	
Sioux	
Smokey Hi/Lo	Kansas City ARTCC: 134.900 / 363.200 Ops: 316.9 304.9 309.9
Snoopy	Minneapolis ARTCC: 127.900 / 281.450 290.500 276.400
Steelhead	Minneapolis ARTCC: 118.050 / 282.200 Ops: 254.700 Cleveland ARTCC: 127.700 / 290.425 Ops: 234.900 Black Talon
Syracuse 1-4	Wheeler-Sack AAF: 128.250 / 257.600
Truman	Kansas City ARTCC: 135.575 / 323.150 Ops: 227.800 260.250 305.100 323.150
Vance 1A	Kansas City ARTCC: 126.950 / 379.200
Vance 1B	Kansas City ARTCC: 127.800 / 319.100
Alpena CRTC / Grayling / R4201	Minneapolis ARTCC: 134.600 / 354.050 (See Alpena facility listing)
Jefferson Range / R3403	Indianapolis ARTCC: 124.775 Ops: 343.000
Sheboygan Range / R6903	Minneapolis ARTCC: 124.400 / 317.700
Volk / Hardwood / R6904 / R6901	Minneapolis ARTCC: 128.600 / 363.000 (See Volk facility listing)
Prohibited area P204	
Restricted area R3404	Terre Haute Intl - Hulman Field: 124.150
Restricted area R3702	
Restricted area R3704	Louisville Intl: 132.075
Restricted area R4207	Minneapolis ARTCC: 125.475 / 269.450
Restricted area R4305	Minneapolis ARTCC: 127.200 / 379.500 133.550

Chicago is generally not a local “hotspot” for military monitoring. As most remaining activity takes place at some distance both patience and an outside antenna are usually required for effective listening. We will review active area units and facilities. Unless otherwise noted, all aircraft frequencies are in AM mode.

106th Aviation Battalion IL National Guard - Decatur / Facility #1 - UH-60A, UH-1H, OH-58A:

Air to Air: 139.000 241.000 241.100 246.800 32.30 (FM)

Decatur based Blackhawk helo presets, circa 2000:

CH	VHF	UHF	Comments
01	118.900	392.100	Decatur Tower / Ground
02	139.000	246.800	Company channel
03	126.350	255.400	Decatur ATIS / Flight service stations UHF
04	121.750	242.400	Decatur Ground / Air to Air
05	119.100	388.000	Peoria Tower / Midway Approach
06	125.800	252.900	Peoria Approach / Peoria Tower
07	126.100	269.200	Peoria ATIS / Peoria Approach North
08	118.600	282.200	Springfield Approach / Peoria ATIS
09	127.650	348.600	Springfield ATIS / Peoria & Springfield Ground
10	121.300	307.000	Springfield Tower / Springfield Approach
11	121.350	270.100	Decatur Approach via Chgo ARTCC / Springfield ATIS
12	120.400	257.800	Decatur Tower VHF / Springfield Tower UHF
13	132.850	291.000	Decatur Approach / CMI Approach
14	118.700	229.400	Midway Tower / McCoy Tower
15	124.600	285.650	Bloomington Tower / CMI Approach
16	121.650	226.300	Bloomington Ground / Midway Tower
17	122.800	388.900	Unicom / Bloomington Tower
18	122.950	335.600	Unicom / Indy & KC ARTCC
19	47.00	239.000	Midway CP / Rockford Tower
20	(open)	357.400	Park Tower UHF

IL Army National Guard CH-47 Chinook helo presets (Decatur & Peoria)

CH	VHF	UHF	Comments
01	126.100	282.200	Peoria ATIS
02	121.850	348.600	Peoria Clearance / Peoria Ground
03	119.100	252.900	Peoria Tower
04	125.800	269.200	Peoria Approach
05	119.950	326.200	Peoria Approach
06	118.050	256.900	Peoria Approach via Bloomington Radar
07	135.350	388.900	Bloomington ATIS / Bloomington Tower
08	124.600	285.650	Bloomington Tower / Champaign Approach SW
09	124.850	291.000	Bloomington ATIS / Champaign Approach NE
10	132.850	229.400	Champaign Approach / Champaign Tower
11	120.400	392.100	Decatur Tower
12	126.350	226.300	Decatur ATIS / Midway Tower
13	118.900	239.000	Decatur Tower / Rockford Tower
14	132.750	270.100	Midway ATIS / Springfield ATIS
15	119.450	307.000	Midway Approach / Springfield Approach SE
16	118.700	323.000	Midway Tower / Springfield Approach NW
17	127.650	257.800	Springfield ATIS / Springfield Tower
18	118.600	280.900	Springfield Approach / “AASF#3 Primary”
19	121.300	347.600	Springfield Tower / “AADF#3 Alternate”
20	122.350	255.400	Flight Service Station

Peoria C-130 Presets:

## TAD UHF AGENCY	## TAD VHF AGENCY	## TAD HF AGENCY
01 106 - 286.500 - 169 Ops	01 53 - 141.550 - 169 Ops	01 212 - 13.878 - 169 Ops
02 109 - 348.600 - PIA Ground	02 56 - 121.850 - PIA Ground	02 217 - 4.724 - Mainsail
03 110 - 252.900 - PIA Tower	03 57 - 119.100 - PIA Tower	03 218 - 6.712 - Mainsail
04 111 - 269.200 - PIA App/Dep	04 58 - 125.800 - PIA App/Dep	04 219 - 6.739 - Mainsail
05 112 - 326.200 - PIA App/Dep	05 59 - 119.950 - PIA App/Dep	05 220 - 8.992 - Mainsail
06 113 - 282.200 - ATIS	06 60 - 126.100 - ATIS	06 221 - 11.175 - Mainsail
07 105 - 261.975 - Local Freq	07 61	07 222 - 11.205 - Mainsail
08 108 - 398.100 - Ellis (?) DZ	08 62	08 223 - 13.200 - Mainsail
09 114 - 388.900 - BMI Tower	09 63 - 124.600 - BMI Tower	09 224 - 15.016 - Mainsail
10 115 - 307.000 - SPI App/Dep	10 64 - 118.600 - SPI App/Dep	10 225 - 7.935 - Smasher
11 116 - 257.800 - SPI Tower	11 65 - 121.300 - SPI Tower	11 226 - 14.383 - Smasher
12 117 - 327.500 - KC Center	12 66 - 127.275 - KC Center	12 227 - 15.025 - Smasher
13 118 - 257.900 - KC Center	13 67 - 121.850 - KC Center	13 228 - 20.943 - Smasher
14 119 - 351.900 - KC Center STL	14 68 - 142.300 - KC Center STL	14 229 - 4.557 - MARS NT P
15 120 - 255.400 - FSS	15 69 - 122.200 - FSS	15 230 - 7.634 - MARS NT S
16 121 - 349.400 - AF CP	16 70 - 122.000 - FSS EFAS	16 231 - 11.407 - MARS NT A
17 122 - 372.200 - Dispatch	17 71	17 232 - 13.927 - MARS DAY P
18 123 - 344.600 - Metro	18 72	18 233 - 14.408 - MARS DAY S
19 124 - 239.800 - Metro	19 73	19 234 - 14.606 - MARS DAY A
20 125 - 343.300 - Metro	20 74	20 235 - 20.992 - MARS LONG

Other reported air tactical use: 138.050 140.400

Another C-130E's presets:

CH	VHF	UHF	Marked as
01	141.550	286.500	169 Ops
02	121.600	348.600	PIA GND
03	119.100	252.900	PIA TWR
04	125.800	269.200	PIA A/D
05	119.950	326.200	PIA A/D
06	126.100	282.200	PIA ATIS
07	118.050	284.700	CHI CNTR
08	127.950	353.500	CHI CNTR
09	135.600	316.100	CHI CNTR
10	127.275	327.500	KC CNTR
11	121.850		CLRNC
12	139.900		KC CNTR
13	142.200		FLT VH
14	140.400	307.100	(UHF marked as "INDY CNTR")
15	139.900	360.600	(UHF marked as "STL APP")
16	138.050	370.900	(UHF marked as "KC CNTR IRK")
17	142.300	351.900	(UHF marked as "KC CNTR STL")
18	124.600	388.900	BMI TWR
19	118.600	307.000	SPI A/D
20	121.300	257.800	SPI TWR

183rd Fighter Wing IL ANG / F-16C - Abraham Lincoln Memorial Airport, Springfield:

Scheduled to transition to a jet engine maintenance facility. F-16's will move to IN ANG at Fort Wayne.

FM mode base operations:

165.1125	Command network	165.0375	Medical Net	165.1375	Aircraft Maintenance
164.1000	Civil Engineers	163.5875	Transportation	163.4875	Security
165.0125	Fire/Crash	164.9625	Aircraft Maintenance	163.4625	Security

Springfield F-16C presets:

Other Air to Air Tactical:

##	VHF	UHF	Use	
01	138.200	272.175	Command Post	138.250
02	121.900	348.600	Ground	138.300
03	121.300	257.800	Tower	138.350
04	126.150	323.000	Approach	138.375
05	118.600	307.000	Approach	138.400
06	127.275	327.500	Kansas City ARTCC	138.475
07		257.900	Howard MOA	138.575
08	133.800	317.500	Kansas City ARTCC	138.825
09	32.05	392.200	Cannon Range	139.450
10		343.000	Jefferson Range	139.750
11		383.300	Atterbury Range	141.100
12		307.100	Indianapolis ARTCC	142.175
13		236.600	USAF Towers	143.275
14	34.20	358.200	Hardwood Range	225.150
15	127.650	270.100	ATIS	257.900 (Howard MOA Primary)
16	138.875		Air to air	269.150
17	139.925		Air to air	281.500
18	141.575		Air to air	287.300 (Former CP UHF Frequency)
19	138.900		Air to air	297.100
20	141.500		Air to air	304.200
				395.800 (Arv/Dep Aux. channel)

Scott AFB, Belleville, IL:

375th Airlift Wing - AMC. 375th Operations Group, 375th Mission Support Group & 375th Medical Group. Operates C-21A Learjet 35 aircraft. Frequent transient airlift units. 932nd Airlift Wing - C-9C Nightingale mobile hospital aircraft. 126th Air Refuelling Wing of the Illinois Air National Guard (KC-135). As part of base reallocations the 126th will Receive 12 KC-135R aircraft from Grand Forks AFB, ND, and retire 8 KC-135E aircraft. Scott hosts some 24 tenant units, including U.S. Transportation Command, Air Mobility Command, 18th Air Force, Air Force Communications Agency & the Defense Information Systems Agency. Scott is co-located with the mostly dormant Belleville / Mid-America airport.

FM mode base operations. Note: Scott is in a transition to a USAF/Motorola VHF digital trunked system. It employs the Apco-25 modulation scheme and has a system ID of B209. Base frequency - 138.1375, Offset Channel #551, Step size 12.5 Khz. Frequencies: 138.1375 138.2125 138.2625 138.3125 138.3375 138.3625 138.3875 138.4125

Reported trunked system talk groups:

32	Unknown	896	Security	1200	Unknown
544	"Golf" fuel?	1056	Unknown	1312	Communications
560	"Golf" to Tower	1120	Maintenance	1328	Unknown
800	Unknown	1152	Logistics	1792	Telemetry
864	Fire/Crash	1168	Ops		

2006 Air Traffic Control Frequencies:

VHF	UHF	Operation
139.850	372.200	USAF Pilot Dispatch
128.700	281.500	ATIS
118.650	251.075	Tower East
128.250	253.500	Tower West
119.875	263.025	Ground East
119.200	275.800	Ground West
121.750	225.400	Clearance
130.650	383.200	375 th AMC Command Post
138.550	277.700	126 th ARW Command Post (143.800, 141.700 & 384.900 past use, now tactical)
	336.000	Reported aeromedical Command Post
125.200	281.500	Approach / Departure via Saint Louis radar
120.650	363.800	Approach via GCA radar
122.950		SFA Unicom
	239.800	PMSV Metro weather

Confirmed 2002 FM mode ground operations:

148.0500	Base Pager
165.1125	Crash/Rescue Repeater out and some simplex use
165.1375	USAF Sweeper Trucks ("FOD" team)
139.6750	NBFM Telemetry
150.3000 out / 148.400 in (156.7)	Main ground vehicles operating channel. Police, fuel trucks, others.
165.3125	"shop" units
173.5625	(000.0) Repeater Ouput, active USAF ops
173.4375 out / 165.0125 in (000.0)	active USAF repeater

Past reported FM mode ground operations frequencies:

40.7500	USAR Reserves	148.4750	Inputs	150.4750	164.9875	Unknown
46.6000	USAR Reserves	148.5250	Command Network		165.1375	Unknown
49.9500	USAR Reserves	149.4750	Security		165.1625	Unknown
138.0500	Unknown	149.5375	Security		165.1875	Transportation
138.0750	USAF OSI	150.0500	Unknown		173.4625	Unknown
138.1000	Unknown	150.1250	Unknown		173.5375	Medical Network
138.1650	USAF OSI	150.1750	Unknown mobiles		173.5875	Hospital Paging
138.1750	USAF OSI	150.3500	Inputs	148.525	413.0500	Unknown
139.6500	Telemetry	150.4750	Unknown		413.1250	Command Network
141.5250	Unknown	150.7750	Unknown		413.1500	Unknown
141.5500	Unknown	163.4625	Pagers		413.2000	Unknown
141.6000	Unknown	163.5125	Unknown		413.3000	Unknown
148.1000	Unknown	163.5625	Unknown			
148.4750	Command Network	163.5875	Transportation			

Scott AFB based 126th ARW KC-135E Presets, circa 2003:

01	263.025	Scott Ground	09	311.000	Air Combat Command Pri
02	275.800	Scott Ground	10	277.700	Scott 126th ARW Command Post
03	251.075	Scott Tower	11	321.000	Air Combat Command Sec
04	253.500	Scott Tower	12	255.400	USAF Flight Service Stations
05	281.500	Arv/Dep via St. Louis Radar	13	239.800	Scott PMSV Weather
06	281.500	Arv/Dep via St. Louis Radar	14	256.700	Scott ATIS
07	372.200	Scott SFA / USAF PTD	15	225.400	Scott Clearance
08	383.200	Scott Command Post			

Scott AFB based 375th AMW C-9A Presets, circa 2000:

01 273.500 ATIS	08 363.800 Radar	15 255.400 FSS
02 225.400 CP	09 390.800 Radar	16 236.600 Keesler
03 383.200 BCP	10 373.000 Radar	17 349.400 Kelly
04 275.800 GND	11 271.300 Radar	18 320.100 Travis
05 253.500 TWR	12 372.200 Ops	19 289.100 GND
06 396.000 DEP	13 344.600 Metro	20 (Open)
07 259.100 APP	14 239.800 Metro	

Another Scott based C-9A, circa 2000:

01 256.400 BLV ATIS	08 (open)	15 255.400 FSS
02 275.800 BLV CLNC	09 (open)	16 236.600 BIX AECC
03 383.200 SCOTT CP	10 373.000 MID AM GND	17 349.400 SKF AECC
04 275.800 BLV GND	11 271.300 MID AM TWR	18 330.100 BIX/SKF TWR
05 253.500 BLV TWR	12 372.200 BASE OPS	19 289.400 SKF/SUU GND
06 281.500 BLV DEP	13 (open)	20 (open)
07 259.100 BLV APP	14 239.800 BLV Metro	

Illinois Air National 126th ARW KC-135 refuelling tactical frequencies: (frequent use)
141.700 143.800 277.700 303.000 321.500 322.800 372.300 384.900 392.200

Atterbury Reserve Forces Training Area (R3401 A/B) / Camp Atterbury, Indiana:

Customers include the Toledo, OH, Battle Creek, MI, Springfield, OH, Ft. Wayne, IN, Terre Haute, IN and other ANG units, who come to the range for bombing and strafing practice. Also there is a significant amount of helicopter traffic from the Air National Guard base in Shelbyville, IN.

FM mode base and National Guard aero operations:

30.1000 Range Ops	139.0000 EOD	173.0000 Range ops
38.9000 Range Ops	171.2625 Range Ops	173.0500 Range Ops
41.9000 Range Ops	173.5625 Fire/Crash	173.2000 Range ops
44.8000 Range Ops	172.8000 Range ops	173.4000 Range ops

Aircraft operations:

118.600 Columbus IN Tower	259.400 IN ANG Ops
124.950 Approach / Departure	266.500 Operations
126.200 Tower / Unicom	269.400 Operations
126.925 Unicom	295.100 Command Post
139.125 Ops	317.800 Approach / Departure
142.900 Ops	383.300 Training Net
143.050 National Guard	392.200 Maintenance
143.050 Ops	392.200 Ops
143.100 National Guard	

Crane Naval Weapons Support Center / R3404, Indiana:

(a 380Mhz digital radio system is under development at this facility)

124.150 Airspace via Hulman	148.350 Railroad operations	149.100 Security F1
138.600 Unknown	148.950 Unknown	149.370 Unknown
148.275 Civil Engineering	149.000 Transportation	149.400 Fire / Medical / F2
148.300 Unknown	149.070 Unknown	150.075 Unknown

Fort Wayne Intl Airport - Baer Field / 122nd FW IN ANG F-16C/D's, Indiana:

121.250 349.000 ATIS / ASOS
119.100 272.275 Tower
121.900 348.600 Ground
138.400 289.300 122nd FW Command Post - callsign SNAKE PIT
132.150 260.600 Approach / Departure East
127.200 284.600 Approach / Departure West
11.500 243.000 Emergency Guard
135.325 Approach / Departure
124.750 Clearance
122.950 Unicom
122.200 Flight Service Station
122.450 Flight Service Station
369.200 Approach via GCA radar
398.200 Approach via GCA radar

FM mode base operations:

148.1000	Civil Engineers	150.2250	Transportation	150.1500	Unknown
148.3000	Command Network	148.4000	Training	150.2250	Unknown
148.1750	Fire/Crash	148.5500	Fuel	150.2550	Maintenance
149.2750	Unknown	149.2750	Preflight	150.3450	Security
150.1500	Medical / Disaster	149.3000	Security		

122nd Fighter Wing, 163rd Fighter Squadron F-16C presets:
Callsigns: CHEVY, IRISH, MACE, WIZARD, RACER, SNAKE

01 138.400 289.300 Command Post
02 121.900 348.600 Ground
03 119.100 257.800 Tower
04 132.150 260.600 Fort Wayne App/Dep
05 127.200 284.600 Fort Wayne App/Dep
06 119.850 362.300 Chicago Center Fort Wayne Low
07 124.525 251.100 Indianapolis Center
08 119.300 317.800 Indianapolis Approach
09 383.300 Camp Atterbury primary
10 121.250 349.000 ATIS
11 122.450 255.400 Flight Service Station
12 125.375 370.850 Chicago Center Hilltop MOA entry/exit
13 (open) 350.350 Hilltop MOA
14 121.050 318.200 Grissom AFB Approach
15 121.800 363.800 Ground / Grissom Radar
16 139.750 343.000 Jefferson Proving Ground
17 138.050 269.450 Air Tac / Jefferson Departure
18 138.300 321.100 Air Tac / Dayton Approach
19 138.200 385.700 Gary Airport primary
20 121.500 243.000 Emergency Guard

Other air tactical: (frequencies in bold recently confirmed as active)

138.050 **138.100** 138.350 **138.400** **138.450** 139.200 139.300 139.450 143.850 148.100
148.300 148.175 148.400 263.200 **273.475** 299.600 340.800 369.200 384.600

Hilltop & 12 Mile MOA air tactical:

138.800 139.700 139.925 141.550 142.200 254.250 **259.400** 317.600 321.300 **350.350** 388.800

Grissom Air Reserve Base - 434th ARW - KC-135E's, Peru, Indiana:

434th Air Refueling Wing, Air Force Reserve Command, Headquarters 2/239th Regiment U.S. Army Reserve, 1st Detachment, Communications Company U.S. Marine Corps Reserve, 199th Quartermaster Company U.S. Army Reserve, U.S. Army Corps of Engineers Louisville District, Grissom Project Office, Naval Reserve Center U.S. Navy Reserve

- 108.450 270.800 ATIS
- 120.000 324.300 Clearance
- 121.050 379.300 Approach / Departure
- 133.700 290.450 Tower
- 128.425 275.800 Ground (139.900 past VHF use)
- 121.050 251.100 Departure
- 252.100 Command Post - callsign BRICKYARD
- 321.000 Command Post - callsign BRICKYARD
- 344.600 PMSV Metro weather
- 372.200 USAF Pilot Dispatch

Reported air tactical: 139.800 139.825 139.925 140.375 141.675 141.750 141.900 141.925 236.900 238.800 317.800 388.800 392.200

FM mode base operations:

- | | | |
|---------------------------|------------------------------|-------------------------------|
| 138.0750 USAF OSI | 149.5650 Unknown | 173.5375 Supply network |
| 138.1750 USAF OSI | 149.5750 Command network | 173.5625 Medical network |
| 138.3250 Pagers | 150.3500 Command Network | 173.5875 Fire/Crash |
| 138.9250 Fire Alarms | 163.4625 Unknown | 407.3500 POL network |
| 139.8750 Inputs 143.825 | 163.4875 Civil Engineering | 407.3750 Inputs 413.375 |
| 141.5250 USAF OSI | 163.5125 Security | 407.4750 USAF CID |
| 141.6250 Transportation | 163.5625 Security | 407.5000 Inputs 413.275 |
| 143.7500 Inputs 148.125 | 163.5875 Motor Pool/Disaster | 408.4000 Telemetry |
| 143.8250 Unknown | 164.0500 USAF Police | 413.0750 Maintenance A |
| 143.9000 Inputs 148.1500 | 164.0750 USAF Police F1 | 413.1500 Survey Teams |
| 148.0650 Unknown | 164.1250 Pagers | 413.1750 Maintenance B |
| 148.0750 Maintenance | 164.4250 Unknown | 413.2000 USAF CID |
| 148.1250 Civil Air Patrol | 164.5000 Security | 413.2750 Command network |
| 148.1375 Civil Air Patrol | 164.9625 Baker network | 413.3000 USAF CID |
| 148.1500 Civil Air Patrol | 165.0125 Job Control | 413.3750 Command network |
| 148.2250 Civil Air Patrol | 165.1125 Security | 413.4000 AFR Command Post |
| 148.4500 Maintenance | 165.1375 Base Ops | 413.4250 Engineers / Security |
| 148.5250 USAF Ops | 165.1625 Baker network | 413.4500 Alert pagers |
| 149.2350 Ramp control | 173.4375 Communications | 419.6000 MRT control |
| 149.5250 Command network | 173.4875 Fire/Crash | |

434th ARW, 74th Aerial Refuelling Squadron KC-135E presets circa 1998: Callsigns: INDY, MASH, GUS

- | | | | | | | |
|----|---------|---------|------------------------|----|---------|---------------------------|
| 01 | 128.425 | 275.800 | Grissom ground | 11 | 321.000 | Brickyard |
| 02 | 133.700 | 290.450 | Grissom Tower | 12 | 120.000 | 324.300 Grissom Clearance |
| 03 | 121.050 | 351.100 | Grissom Departure | 13 | 305.400 | Cell Common |
| 04 | 125.375 | 370.850 | Chicago Center | 14 | 388.000 | Discrete (some 350.850) |
| 05 | 121.050 | 379.300 | Grissom Approach | 15 | 108.450 | 270.800 Grissom ATIS |
| 06 | 120.000 | 318.200 | Grissom Approach | 16 | 372.200 | Pilot Dispatch |
| 07 | 135.250 | 372.900 | Grissom Approach | 17 | 344.600 | Grissom PMSV Metro |
| 08 | | 252.100 | Brickyard | 18 | 364.200 | AICC Pri (some 339.300) |
| 09 | | 311.000 | Brickyard | 19 | 228.750 | Have QuickTime-Of-Day |
| 10 | | 255.400 | Flight Service Station | | | |

Hullman Regional Airport / 181st Fighter Wing - F-16C/D, Terre Haute, Indiana:

Note: This unit will relocate to Fort Wayne as part of base reallocations and closings.

127.500	284.400	ATIS / ASOS
118.300	239.000	Tower
121.600	348.600	Ground
143.550	392.200	Command Post - callsign RACER OPS
119.800	339.800	Approach / Departure
125.450	288.150	Approach / Departure
	270.300	Reported Command Post
	280.500	Supervisor of Flight
	254.250	Red Hills MOA Air Tac
122.950		Unicom
122.200		Flight Service Station
122.650		Flight Service Station

Reported air tactical: 138.150 138.250 138.300 138.925 139.725 139.800 140.425 141.725 148.475

FM mode base operations:

138.9250	Security	148.5000	Disaster network	149.4750	Supply
148.1750	POL Trucks	148.5500	Fire/Crash	149.5500	Munitions
148.2000	Base operations	148.9150	Civil Engineers	163.4875	Command network
148.4500	Maintenance supply	149.3000	Security		

113th Fighter Squadron, 181st FG, F-16C/D presets: Callsigns: RACER, APEX, BASS, BUCK, SNIPER

01		11	138.100	
02		12	138.150	
03		13	139.800	
04		14		
05		15		
06		16	148.475	392.200 Command Post
07		17		
08		18		
09		19		
10		20		

Jefferson Range (R3403), Madison, Indiana:

The Range operates 2 conventional bombing circles, 3 strafe pits, and 20 tactical targets. Primary users include; 110th FW - Battle Creek, MI (A-10A), 122nd FW - Fort Wayne, IN (F-16C), 127th FW - Selfridge ANGB, MI (F-16C), 178th FW - Springfield, OH (F-16C), 180th FW - Toledo, OH (F-16C), 181st FW - Terre Haute, IN (F-16C), 183rd FW - Springfield, IL (F-16C), 4th Fighter Wing - Seymour-Johnson AFB, NC (F-15E).

The range is located at the north end of what was once the Jefferson Proving Ground, which closed 1995 and is undergoing a conversion into the Big Oaks Wildlife Refuge and associated ecological remediation. All weapons delivered on the Jefferson Range are inert training rounds and bombs. The BDU-33 training bomb is the primary weapon. In addition, MK 82/84 full scale inert bombs are allowed as well as simulated Maverick air-to-ground missiles. Both 20 mm and 30 mm training rounds are fired from aircraft.

The range has:

- 14- WISS Scored Targets
- 3- Air Scored Targets
- 3- Strafe Targets (DH-3 Scored) (2- 20MM & 1 30MM)
- 1- 2.75" Rocket Target

The WISS is an electro-optical instrumented system designed to measure the impact location of air delivered ordnance with respect to the target center. The targets vary from a Lat/Long position on water to fixed bull's-eye, buoys, barges, and moving land targets. The Large Scale Target Sensor System (LSTSS) is an aircrew training system which detects laser designator radiation on targets. With the closure of the Jefferson Proving Grounds some of these frequencies have probably fallen silent, though the range itself remains active. Frequencies noted in prior use include:

124.775 / 307.100 Arv/Dep via Indy ARTCC 141.400 IN ANG air tactical
343.000 Primary Training network 142.900 IN ANG air tactical
390.100 Range coordination

Base operations have been reported on; 143.7625, 165.0625, 165.1125, 413.875, 413.950 and 415.000

Newport Chemical Depot (VX nerve gas storage facility), Newport, Indiana (being phased out)

40.60 Resource Force 139.075 Security F2 163.5375 Maintenance
173.4625 COR 141.050 Surety F3 142.4000 Maintenance F5
140.0250 Security F1 141.500 Surety F4 142.9250 Maintenance F6

Local Indiana Safe-T public safety digital trunked system node:
856.96250 857.96250 858.96250 859.96250 860.96250 866.9750

Shelbyville Muncipal Airport - Indiana National Guard Aviation, Shelbyville, Indiana:

127.150 / 317.800 Approach / Departure via Indianapolis radar
122.800 CTAF & Unicom
126.475 ATIS/ASOS

Army National Guard operations: 41.50 (FM) 124.100 139.100 241.100
Indiana National Guard UH-1 Huey based at Shelbyville presets:

01 241.100	08 239.000	15 235.400
02 241.200	09 234.600	16 307.100
03	10	17 255.800
04 263.300	11 355.500	18 242.400
05 343.900	12 255.400	19 383.300
06	13 272.700	20 348.600
07 354.000	14 269.400	

Also noted for ANG operations: 41.50 (FM), 236.600, 241.000, 257.800, 284.600, 285.400, 343.800

Indiana National Guard UH-60 Blackhawk based at Shelbyville presets:

01 118.600	236.600	14 128.750	307.100
02 119.050	239.000	15 132.500	317.800
03 120.900	241.000	16 134.850	343.800
04 121.900	241.100	17 139.000	343.900
05 122.100	242.400	18 139.250	354.000
06 122.400	255.400	19	383.100
07 122.550	255.800		
08 123.050	257.800		
09 124.400	269.400		
10 124.950	272.700		
11 125.350	284.600		
12 126.200	285.400		
13 127.150	295.700		

Alpena Combat Readiness Training Center, Michigan: (employs Camp Grayling Range R4201)

The mission of the Alpena Alpena Combat Readiness Training Center [CRTC] is to provide an integrated, year-round, realistic training environment which enable military units to enhance their mission capability and readiness at a deployed, combat oriented operating base. The Alpena County Regional Airport is a county owned and operated facility on which the Alpena CRTC ANG is a tenant. The military area is isolated from the civilian area to provide minimal interference between the two. The flight line and maintenance facilities are subdued to provide a European NATO type operating environment.

Runway 01-19 is a 9001' x 150' concrete runway. The entire runway is grooved and has a 1000' overrun at each end. It is equipped with runway and threshold lights and is also marked with instrument and all weather runway markings and runway distance markers. Runway 01 is the calm wind and instrument runway. It has an ILS and approach lights. Runway 19 has a TACAN approach. BAK-14 cables are located 1500' from the threshold of each end with 1200' rollout. A precision approach (PAR) is available when the RAPCON is open. Runway 07-25 is a lighted and grooved 5031'x100' concrete runway. Runway 13-31 is a 3500' X 60' C-130 Assault Field Landing Strip and parallels the drop zone. All taxiways are 75' wide except "D" which is 50' wide and "H" which is 60' wide. All taxiways are lighted. The military aircraft parking ramp is 2800'x425'. Its grounding point grid is designed for two parallel lines of parked fighter aircraft but other parking arrangements can be accommodated. It is lighted for night operations with the lights controlled from base operations. The Rapid Runway Repair (RRR) training facility is one of its most highly demanded resources. A new Prime BEEF (Base Emergency Engineering Force) support facility which includes an equipped DCC, and classroom with audio/visual equipment is available use. It has an 800' long RRR training pad with two mock craters and multiple training scenarios.

A variety of ANG employ the CRTC on a rotating basis, though regular customers include the 110th FW, 127th FW, 180th FW and others.

Airfield operations:

121.350	318.100	Alpena County Regional Airport Tower (383.100 UHF also reported)
126.200	236.600	Alpena CRTC Tower Primary
127.750	236.600	Alpena CRTC Tower Secondary
121.900	275.800	Alpena County Regional Airport Ground
128.425	379.300	Alpena County Regional Airport Approach/Departure via Minneapolis ARTCC
121.500	243.000	Alpena CRTC Emergency Guard
139.300	385.700	Alpena CRTC / Grayling Range control
125.475		Alpena County Regional Airport Approach / Departure
120.675		Alpena County Regional Airport ATIS
122.950		Alpena County Regional Airport Unicom
	372.200	Alpena County Regional Airport Pilot Dispatch
	286.500	Alpena CRTC Command Post
	234.900	Black Talon - Lake Huron area MOA's control

Reported CRTC Rapcon GCA Approach frequencies: 126.425 132.200 318.100 351.100 369.200

FM mode base operations:

148.035 148.245 148.515 149.475 149.535 150.345 165.1375 173.5375 173.5875

Steel Gate Range - GRAYLINE CONTROL: 40.45 (FM) 40.65 (FM) 41.80 (FM) 381.100 385.700

NORAD NEADS Remote Communications Outlet: 228.700 228.900 282.500

Camp Grayling / Grayling Army Airfield / Grayling Range, Michigan:

The Grayling Air-to-Ground Range is located in the northern portion of R-4201A, and is at a bearing of 258 degrees and 46 NM from Alpena. The bomb circle and most tactical targets are scorable out to 300 meters. BDU-50 and TP/WP rockets are approved on some targets. Some targets have multiple run in azimuths. Primary strafe targets include three acoustiscored targets (2000') for up to 30mm and a hard acoustiscored target for 30mm (3000'). Scorable 30mm events include LRS, HAS and TTS. Multiple targets are available for 20mm HAS, and also HEI strafe for either 20mm or 30mm.

IR/EO array of full sized heat generating armored vehicles, including M-60 (tanks) and M-113 (APC's) are available upon request. A simulated Laser Target is available upon request for either a fixed (for offsets) or mobile position. Pave Spike is approved but must be coordinated. Ground laser operations may be arranged with adequate notice. BOMB CIRCLE and H-1 are lighted for night operations. Laser Pointer available for target designation. Ground FAC support is available upon coordination. Airborne FAC's from the 110th FW are also normally available. Live ordinance up to MK-82 may be coordinated with a minimum of 60 days notice. Grayling Air Gunnery Range call sign is STEELGATE.

Airfield and Range operations:

126.200 241.000 Tower (36.50 FM)
132.900 338.300 Approach / Departure via Minneapolis Center
48.60 317.000 Approach via GCA radar
122.800 CTAF / Unicom
119.075 ATIS / ASOS
121.900 275.800 Ground

Range Control: 40.45 (FM) 40.65 (FM) 41.80 (FM) 41.85 (FM) 41.90 (FM) 381.100 385.700

Range air tactical: 139.125 139.300 141.350 143.050 143.100 143.350 143.400 314.400 338.800

FM mode base operations:

42.00 Fire/Security 163.4625 POL trucks
42.10 Pagers 163.4875 Deployed unit transportation
42.40 Maintenance 163.5125 Deployed unit supply
148.245 Command Post 163.5875 Deployed unit ramps
149.175 Deployed unit security 165.0625 Deployed unit disaster network
149.475 Base security 165.1375 Deployed unit civil engineering
149.535 Deployed unit medical 173.5625 Deployed unit Fire/Crash
163.4375 Deployed unit munitions

Battle Creek ANGB - 110th FW MI ANG A-10's / W K Kellogg Airport, Michigan:

Battle Creek A-10's are scheduled to relocate to Selfridge AFB, which will lose it's F-16's.

119.200 340.900 Approach / Departure via Kalamazoo radar
127.550 263.100 Approach / Departure via Chicago center
126.825 239.025 Tower
118.500 239.000 Tower - past use - out of service
118.300 308.600 Tower - past use - out of service
121.700 256.875 Ground (348.600 past UHF use)
140.400 267.800 MI ANG Operations (32.35 FM) - callsign FREEBIE COMMAND
46.85 MI National Guard operations
139.700 Supervisor of Flight (41.95 FM)
118.500 CTAF
122.950 Unicom
128.325 ATIS / ASOS
122.200 Flight Service Station (Lansing RDO)

FM Air Tactical: 32.25 32.35 32.45 34.10 34.60 36.85 41.45 41.50 41.80 41.90

AM Mode: 139.700 139.900 140.000 140.400 140.600 141.550 142.300 385.900

FM mode base operations:

142.0000	Fire/Crash	142.5750	Base operations	163.5125	Unknown
142.0750	Disaster network	143.4250	Security	163.5875	Unknown
142.5000	Munitions	143.8750	Base services	168.5125	Unknown
142.5250	Security	163.4625	Unknown		
142.5500	Command network	163.4875	Unknown		

110th Fighter Wing, 172nd Fighter Squadron, Michigan ANG A/OA-10A 2003 presets:

Numerous callsigns, include; ANVIL, CUTTY, CYBORG, BATTLE, ANIMAL, SLAM, FREEBIE

01	140.400	267.800	BATTLE OPS - Command Post
02	121.700	348.600	BTL GND - Battle Creek Ground
03	118.300	239.000	BTL TWR - Battle Creek Tower
04	121.200	340.900	AZO APP - Kalamazoo Approach
05	119.200	255.900	AZO APP - Kalamazoo Approach
06	128.500	269.600	CHI C - Chicago Center
07	127.550	263.100	CHI C - Chicago Center
08	125.375	370.850	CHI C - Chicago center
09	126.750	348.750	CLEV C - Cleveland Center
10	120.850	322.350	MINN C - Minneapolis Center
11	132.900	338.300	MINN C - Minneapolis Center
12	120.650	299.600	INDY C - Indianapolis Center
13	119.550	251.100	INDY C - Indianapolis Center
14	119.300	317.800	INDY C - Indianapolis Center
15	128.400	257.600	GRR APP - Grand Rapids Approach
16	(tac)	385.900	TOD - UHF Have Quick Time-Of-Day synchronization pulse
17		385.700	R4201 - Grayling Range Primary
18		383.300	R3401 - Atterbury Range Primary
19		343.000	R4303 - Jefferson Range primary
20		385.900	

Other channels 15-20:

15	32.45	128.400	110 th Fighter Group Common
16	41.95	139.900	110 th Fighter Group Operations / Supervisor of Flight / Dispatch
17	34.10	141.550	110 th Fighter Group Common (air tactical)
18	34.60	142.300	110 th Fighter Group Common (air tactical)
19	41.45	139.700	110 th Fighter Group Common (air tactical)
20	46.85	128.325	110 th Fighter Group Common (air tactical) / ATIS

Other common area frequencies:

Lansing Radio FSS:	122.200 / 255.400
Grayling Range Secondary:	40.45 (FM) / 139.300 / 141.350 / 381.100
Atterbury Range Secondary:	30.00 (FM) / 259.400
Jefferson Range Secondary:	390.100

Prior A-10 presets:

01	121.700	348.600	BTL GND	16	Tac	267.800	110 OPS
02	118.500	239.000	BTL TWR	17	Tac	385.700	R4201
03	121.200	239.000	AZO APP	18	Tac	383.300	R3401
04	119.200	255.900	AZO APP	19	Tac	343.000	R4303
05	128.500	269.600	CHI C				
06	127.550	263.100	CHI C				
07	125.375	270.850	CHI C				
08	132.550	322.350	MINN C	14	32.35	(open)	110 FG
09	133.850	327.100	MINN C	15	32.45	140.000	110 FG
10	132.900	398.900	MINN C	16	41.95	139.700	110 SOF
11	124.525	319.800	INDY C	17	34.10	141.550	110 FG
12	119.550	251.100	INDY C	18	34.60	142.300	110 FG
13	119.30	317.800	INDY C	19	41.45	139.900	110 FG
14	128.400	257.600	GRR APP	20	46.85	140.400	110 FG
15	Tac	385.900	110 TAC				

Other channels 14-20:

Fort Custer - Michigan National Guard, Augusta, Michigan:

Used by the MI National Guard and other branches of the armed force. Many ROTC students train at this facility, as well as do the FBI & the Michigan State Police. The facility includes the Custer Main Heliport. It is home to the 177th Regiment Regional Training Institute and the Augusta Armory. The small arms ranges were recently upgraded and the maneuver training areas offer a variety of terrain. This facility also has talkgroups on the Michigan Public Safety Trunked System. FM mode base operations: 41.90 (command) 143.1000 143.4000

Selfridge ANGB - 127th Wing Michigan Air National Guard, Mount Clemens, Michigan

191st Airlift group - 171st AS - C-130's, 107th Fighter Squadron - F-16's, 927th ARW - KC-135E's, U.S. Army Garrison, Marine Wing Support group 47, U.S. Coast Guard Station Detroit, 75th Ordnance Co. EOD, USNR Center Detroit. U.S. Customs Border Security Center. Some aircraft are currently operating out of Alpena due to runway construction. The Army garrison will be phased out. The 927th's eight KC-135's will switch to 127th ANG - also at Selfridge. The 127th will switch to operating KC-135R's and A-10's from Battle Creek and retire their venerable F-16's and C-130's.

125.325	270.100	ATIS
128.300	275.800	Ground
120.150	340.700	Tower
119.600	318.200	Approach
119.600	395.900	Departure
127.700	290.425	Approach / Departure via Cleveland Center Flint RCAG
119.600	363.800	Base radar service
119.000	259.950	Clearance
134.850	372.200	Pilot Dispatch
123.100	381.000	Air-Evac (also reported on 262.800)
	318.600	Naval Airfield Operations
148.525	292.000	107 th FS Wing Operations - callsign QUARTERBACK / DEMON OPS
128.700	259.300	Single Frequency Approach (also 259.300 290.900 388.200 391.900)
	381.700	927 th ANG Operations
	314.200	927 th ARW Operations
	238.900	927 th ARW Refuelling
	293.100	127 th FW Supervisor of Flight
	292.200	127 th FW Operations
	342.500	PMSV Metro weather
	287.500	171 st AS Command Post - calsign SIX-PACK
	234.900	Black Talon - Lake Huron MOA's control via Alpena site
5.692	381.800	USCG Detroit Operations

Reported base preset air traffic channels:

01	143.525	292.000	Operations	11	119.600	314.200	Radar / 927 th Tactical
02	119.000	259.950	Clearance	12	124.700	391.900	Windsor Tower / App
03	128.300	275.800	Ground	13	125.150	290.900	Detroit Metro Approach
04	120.150	340.700	Tower	14	118.400	259.300	Detroit Metro Tower East
05	119.600	395.900	Approach / Departure	15	40.65	366.200	
06	125.325	270.100	ATIS	16	139.850	293.100	
07	132.250	307.800	Cleveland Center	17	40.85	314.400	
08	133.850	385.450		18	41.05	336.400	
09	140.450	385.700		19	41.25	342.500	PMSV
10	134.100	363.800	Radar	20	41.45	372.200	PTD

Reported air tactical:

138.200 138.650 139.625 139.850 142.200 143.925 143.950 225.300 228.700 238.900 251.150
251.900 254.700 257.650 269.450 282.200 282.500 285.450 293.100 308.250 314.400 322.350
334.400 335.650 336.400 338.800 354.050 366.200 380.250 385.450 388.950

NORAD NEADS remote communications outlets - callsign HUNTRESS:

228.600 228.700 228.900 260.900 261.900 282.500 283.800 298.600 312.950 314.400
326.400 328.000 338.800 348.400 354.200 364.200 369.900 388.200 388.250

FM mode base operations:

138.6500	Security	173.4125	Unknown	413.2000	Unknown
141.5500	Unknown	173.4375	POL trucks / Fuels	413.2500	Unknown
143.5500	Unknown	173.5375	Security	413.3000	Unknown
148.0500	Command	173.5875	Fire/Crash simplex	413.3750	Base operations
150.2250	Unknown	406.9625	Security	413.4000	Unknown
150.3000	Unknown	407.1750	Munitions	413.4250	Aircraft maintenance
163.3750	Security	407.2500	Security	413.4750	Ramp operations
163.4625	Unknown	407.3750	Transportation	413.4750	Unknown
163.4875	Security	407.4500	Inputs 413.050	413.7500	Unknown
163.5125	Munitions	407.4750	Inputs 413.150	413.9500	Unknown
164.1000	Unknown	407.5000	Unknown	416.1500	Security
164.1125	Transient alerts	407.5500	Inputs 406.550	416.3000	Fire/Crash
164.7000	Unknown	412.2500	Inputs 407.250	416.5500	POL trucks
165.0125	Aircraft Maint	412.7625	Unknown	416.7500	Civil engineers
165.1125	Ramp operations	413.0250	Munitions	417.2125	Fire/Crash
165.1375	Unknwn	413.0500	Aircraft Ramps	418.9000	Inputs 413.475
165.1625	Unknown	413.1000	Communication	451.6625	Golf course
173.0250	Fire/Crash simplex	413.1250	Unknown		
173.1000	Army operations	413.1500	Aircraft Maint		

127th FW, 107th FS MI ANG F-16C presets: Callsign: DEMON, BOSUN, TAJAS, YALTA, MINT (travel)

01	148.525	292.000	Demon Ops	11	119.600	318.200	RAPCON
02		259.950	Clearance	12	128.700	391.900	Radar Approach
03		275.800	Ground	13	125.150	363.200	Detroit Metro
04		340.700	Tower	14	118.400	287.100	Detroit Tower
05		395.900	Departure	15	143.925	388.200	App/Emer
06		270.100	ATIS	16	139.850	293.100	SOF
07		307.800	Cleveland Center	17	142.200	314.400	Huntress (348.4?)
08		251.150	Minneapolis Center	18		338.800	Huntress (318.1?)
09		385.700	Steelgate	19		293.100	some have 342.500
10	128.700	363.800	RAPCON	20		236.600	Windsor Tower

Other VHF: 138.200 138.650 143.950 Grayling Range Ops: 229.400 248.200 347.700 385.700

927th ARW, 63rd ARS KC-135R presets: Callsigns: AUTO, PISTON

119.000 / 259.950	Clearance	314.200	Com-1
119.600	App/Dep	318.200	App/Dep
120.150	Tower	321.000	Com-2
123.100 / 381.000	Air Evac	342.500	PMSV
125.325 / 270.100	ATIS	363.800	Radar
126.200 / 340.700	Tower	381.700	Piston Ops
128.300 / 275.800	Ground	388.200	Radar
134.850 / 372.200	PTD	391.900	Radar
128.700 / 259.300	Radar	395.900	Departure
262.800	Air Evac	11.447	CP (USB)
290.900	Radar SFA		

191st Airlift group, 171st Airlift Squadron C-130E frequencies:

138.650 / 292.000	Demon Ops	287.500	Six-Pack
134.850 / 372.200	PTD	342.500	PMSV
381.700	Piston Ops	259.300	Radar SFA
314.200	Piston Com-1	290.900	Radar SFA
282.600	Piston Com-2	388.200	Radar SFA
228.125	Six-Pack Ops	391.900	Radar SFA
279.400	Six-Pack Air Tac	225.000	Comm Techs
280.500	Six-Pack Maint	390.000	Have Qucik TOD

Traverse City U.S. Coast Guard Air Station / Cherry Capital Airport, Michigan

121.800 348.600 Ground
 124.200 348.600 CTAF / Tower
 122.950 Unicom
 119.175 ATIS
 132.900 338.300 Approach / Departure via Minneapolis ARTCC

USCG Air Ops: 5.696 (USB) 8.984 (USB) 157.050 (FM) 237.900 282.800 326.150 345.000 379.050
381.800 383.900

Warren Tank and Armament Command, Detroit, Michigan

TACOM, the U.S. Army's Tank-automotive and Armaments Command, headquartered in Warren, Michigan, in partnership with the Army's Program Executive Offices, is one of the Army's largest weapon systems research, development, and sustainment organizations.

139.0000	EOD	165.0625	Security	173.5625	Fire
139.2000	Reserves	165.1875	Operations	407.3250	Security
163.5375	Engineering	173.4625	Fire	407.5250	Security

General Mitchell International Airport, Milwaukee, Wisconsin:

440th Airlift Wing AFRC C-130's (phasing out), 128th Air Refuelling Wing WI ANG KC-135's

126.400		ATIS
148.350	360.250	AWOS
121.800	263.125	Ground
120.800		Clearance
119.100	325.800	Tower
126.500	307.000	Approach North & West
118.000	379.800	Approach South & East
125.350	307.000	Departure North & West
119.650	317.725	Departure South & East
	376.100	440 th Airlift Wing PTD/CP - callsign INSTIGATOR
	314.200	440 th Airlift Wing Base Ops - callsign PACKER OPS
139.500	321.000	128 th ARW - callsign UPSET CONTROL (6.761 USB HF)
127.850		GCA radar approach
	348.700	Maintenance
	311.000	Air Combat Command Primary
122.950		Unicom
122.400	255.400	Flight Service Station
122.650		Flight Service Station

Base USAF/Motorola digital trunked system:Base frequency - 406.0000 Channel spacing - 12.5 Khz Offset channel number - 380 Frequencies: 407.2500 407.5750 408.5500 409.1500

Trunked system talk groups:

33616	Primary	35248	Control	41616	Operations
33648	Secondary	36816	Operations	46416	Aircraft Maint
35216	Control 2	38416	Operations	46448	Aircraft Maint
35216	Operations	40016	Operations		

Former FM mode base operations:

148.0500	Transportation	163.4625	440 Security	165.1375	440 Maintenance
148.1000	440 Civil Engineering	163.4875	128 Security F1	173.5875	440 Fire/Crash
148.1750	128 Command	163.5125	128 Fire/Crash	413.1500	128 Command
148.2450	440 TCF	163.5625	128 Maintenance F2	413.2000	440 Civil Engineering
150.2000	440 Cargo	163.5875	128 Maintenance F1	413.300	Civil Engineering
163.0125	Operations	163.9625	128 Security F2	413.4500	Crew Alerts

440th Airlift Wing, 95th Air Squadron C-130H presets:

01	236.600	USAF TWR	08	348.600	Ground	15	259.400	IN ANG
02	363.800	Military Radar	09	251.100	Minn ARTCC	16	360.600	Chgo ARTCC
03	275.800	USAF Ground	10	364.200	USAF AICC	17	323.100	Chgo ARTCC
04	257.800	Civil Towers	11	340.200	Navy Towers	18	376.100	CP
05	255.400	FSS	12	351.200	CP	19	341.200	
06	307.000	MKE Departure	13	344.600	Weather	20	314.200	Packer Ops
07	307.300	Minn ARTCC	14	340.800				

128th Air Refuelling Wing, 126th Air Refuelling Squadron KC-135R presets:

VHF:

01	126.400	ATIS	08	119.650	Departure	15	120.375	Chicago Center
02	120.800	Clearance	09	125.350	Departure	16	118.300	Rockford Tower
03	121.800	Ground	10	122.200	FSS GRB	17	133.700	GUS Tower
04	119.100	Tower	11	139.500	Upset Control	18	127.500	VOK Tower
05	127.850	Final Radar	12	125.100	Chicago center	19	135.650	GRR Tower
06	126.500	Approach W	13	132.300	Chicago Center	20	(open)	
07	118.000	Approach E	14	134.750	Chicago Center			

UHF:

01	348.600	Ground	08	384.700	Maintenance	15	238.900	AR105
02	325.800	Tower	09	311.000	AMC/ACC	16	235.100	AR607
03	307.000	Departure	10	364.200	ADC/GCI	17	238.900	AR632
04	255.400	FSS	11	321.000	AMC/ACC	18	305.500	AR640A
05	379.800	Departure	12	344.600	Metro	19	291.900	AR640B
06	236.600	VOK Tower	13	372.200	PTD	20	(open)	
07	351.200	Upset Control	14	324.600	AR107			

WI ANG F-16C's, Madison, Wisconsin Dane County Regional Airport / Truax Field:

124.650	278.300	ATIS						
121.900	348.600	Ground						
121.625		Clearance						
119.300	257.800	Tower / CTAF						
138.250	392.200	WI ANG Operations - callsign BADGER OPS (36.80 FM past use)						
120.100	350.300	Approach East						
135.450	343.700	Approach West						
133.300	380.350	Approach / Departure via Chicago center Lone Rock RCAG						
135.450		Approach / Departure via Chicago center Lone Rock RCAG						
126.850	318.100	Departure						
122.600		Flight Service Station - Green Bay RDO / Madison RCO						

National Guard operations - 40.80 (FM) 123.400 288.900 347.400 callsign FIREFLY

FM mode base operations:

41.94	NG Medevac	163.5625	Security	173.5875	Fire/Crash
138.0250	Movement area	164.2000	Supply	407.2500	Maintenance
163.4875	Security	165.0125	Munitions		
163.5125	Command network	173.5375	Medical		

115th Fighter Wing, 176th Fighter Squadron Wisconsin ANG - F-16C/D presets:

Callsigns: ANIMAL, BADGER, FANG, FROSTY, HOSS, JEDI, JUDGE, RAM, ROCK, SLAM

01	124.650	278.300	ATIS	11	358.200	Volk Hardwood
02	138.250	392.200	Badger Ops	12	319.025	Air Tac
03	121.900	348.600	Ground	13		
04	119.300	257.800	Tower	14		
05	135.450	343.700	App/Dep W	15		
06	120.100	350.300	App/Dep E	16	138.450	
07	133.300	257.925	Chgo Center	17		
08		290.800	Volk Approach	18	138.450?	
09		239.250	Volk Tower	19	138.275	291.900 Tac / Refuel
10		346.525	Volk PHOENIX	20	124.650	278.300 ATIS

Air Tactical:

138.100 138.200 138.275 138.300 138.350 138.425 138.450 138.500 139.350 139.700
139.725 139.800 141.875 143.800 228.900 238.200 238.300 298.700 322.700 396.900

Beaver MOA - 293.300 Snoopy MOA - 399.000

Fort McCoy / McCoy Army Airfield / Young Assault Strip, Sparta, Wisconsin:

124.600	Range F3 / CTAF / McCoy Tower
118.375	ASOS
241.000	McCoy Tower - Army Airfield Primary
229.400	McCoy Tower - Army Airfield Secondary
241.100	McCoy Tower - Army Airfield Tertiary
139.300	McCoy Tower - Army Airfield VHF
41.70	McCoy Tower - Army Airfield FM Primary
38.50	McCoy Tower - Army Airfield FM Secondary
135.250	Approach / Departure via Volk radar
133.300 / 380.350	Approach / Departure via Chicago center Lone Rock RCAG
247.400	Range Control UHF
41.90 (FM)	Range Control FM F1
46.80 (FM)	Range Control FM F2
298.700	Range Strike Primary
238.200	Range Strike Secondary
40.55 (FM)	NG Helo operations
242.400	NG Helo operations
314.200	Reported USAF operations

FM mode base operations:

49.8000	Army Reserves	141.3500	Army Reserves	165.0625	Army Reserves
36.6900	Army Reserves	143.0500	Army Reserves	165.0875	Police
36.5300	Army Reserves	143.2250	Army Reserves	165.1875	Fire
36.1100	Army Reserves	143.2500	Army Reserves	165.6125	Army Reserves
138.2250	PMO	143.3500	Army Reserves	173.4125	Unknown
139.1250	Army Reserves	143.4000	Army Reserves	173.4875	Fire/Crash
143.2500	Army Reserves	163.5625	Range operations		
141.3000	Army Reserves	165.0375	Army Reserves		

Volk Field / Volk CRTC / Camp Douglas / Fort Douglas / Hardwood Range, Wisconsin

Volk Field ANG Base is a joint facility with the WI ANG, supporting the Combat Readiness Training Center and the 128th Air Control Squadron. Additionally, Volk Field CRTC personnel manage the nearby Hardwood Gunnery Range. The Wisconsin Army NG supports the Camp Williams side of the base which consists of the United States Property and Fiscal Office, the 32nd Brigade HQ, and the Combined Support Maintenance Shop. The Northeast Counterdrug Training Center has a remote campus at Volk Field where they provide training to regional law enforcement officials on drug demand reduction.

The mission of the CRTC is to provide a year-round training environment for units to enhance their combat readiness. The CRTC allows training to be done which cannot be accomplished at their home station. The facilities approximate a Forward Operating Location (FOL), and provide a realistic setting for the conduct of unit Operational Readiness Exercises and Inspections (ORE, ORI). Additionally, the CRTC manages the operations and scheduling of assigned ranges and airspace training areas.

The 128th Air Control Squadron (ACS) is tasked to support the flying activities scheduled at the CRTC. The 128 ACS is a worldwide deployable Ground Control Intercept (GCI) unit and often deploys to support counter narcotics operations and Joint Chiefs of Staff (JCS) operations and exercises.

Approach control services extend from Volk to five civilian airports in the area. A Radar Approach Control (RAPCON) facility provides enroute and terminal air traffic services in a roughly 20 nautical mile radius. Hardwood Air-to-Ground Weapons Range (R-6904), near Finley, WI., is one of 15 ANG ranges located throughout the United States. The mission of Hardwood Range is to provide training for combat aircrews, through presentation of a variety of realistic target arrays, for air-to-ground weapons delivery. Its day-to-day users include ANG units from Illinois, Iowa, Minnesota, South Dakota, Michigan and Wisconsin, as well as Air Force Reserve units from Indiana, Illinois, Minnesota and Wisconsin. Regular Air Force bomber units from throughout the United States also use Hardwood Range, as do Army, Army National Guard and Reserve, Navy, Marine Corps, and occasionally Canadian Forces aircraft.

Hardwood Range is two statute miles (SM) wide by six SM long and the surrounding area is heavily wooded. The associated restricted airspace is eight by nine nautical miles and is reserved to an altitude of 23,000 feet. The range support facilities and main control tower are located at the center of the western end of the complex. Two flank towers are located on the north and south ends for scoring. There are two drop zones, located north and south, for airdrop missions by C-130 and C-17 aircraft.

Targets are displayed in three areas north, south and east of the support facilities. In addition to a conventional bomb circle, an array of simulated tactical targets has been acquired and built that include vehicle convoys, a SCUD missile launcher, aircraft, a mobile command post, fuel storage tanks, a refinery complex, bridges, radar installations, and an anti-aircraft site.

Munitions employed at the range are inert or practice ordnance. High explosive and white phosphorous are not authorized. Practice ordnance are 25 pound BDU-33 or BDU-48 bombs having a spotting charge that releases a cloud of smoke on impact. Mk-82/BDU-50, 500-pound and Mk-84, 2,000-pound bombs are also used on some targets. These inert "heavyweight" bombs are dropped either with a parachute for "High Drag", or "Slick", which has no drag device. In either case, their weight creates enough "splash" or dirt spray, to be easily spotted without using an explosive charge. Forward-firing ordnance from aircraft include 7.62mm and .50 Cal. machine guns and 20mm or 30mm cannons. All use non-explosive ammunition. These may be scored optically or acoustically.

Hardwood Range is capable of providing a range of simulated threats to aircrews. The range has three radar threat emitters that emit electronic signals simulating different threats such as surface-to-air missiles, anti-aircraft artillery and radar tracking devices. Two Smoky Sam simulators are also available. These are launch platforms for Styrofoam rockets, which give a visual impression of a surface-to-air missile fired at the aircraft.

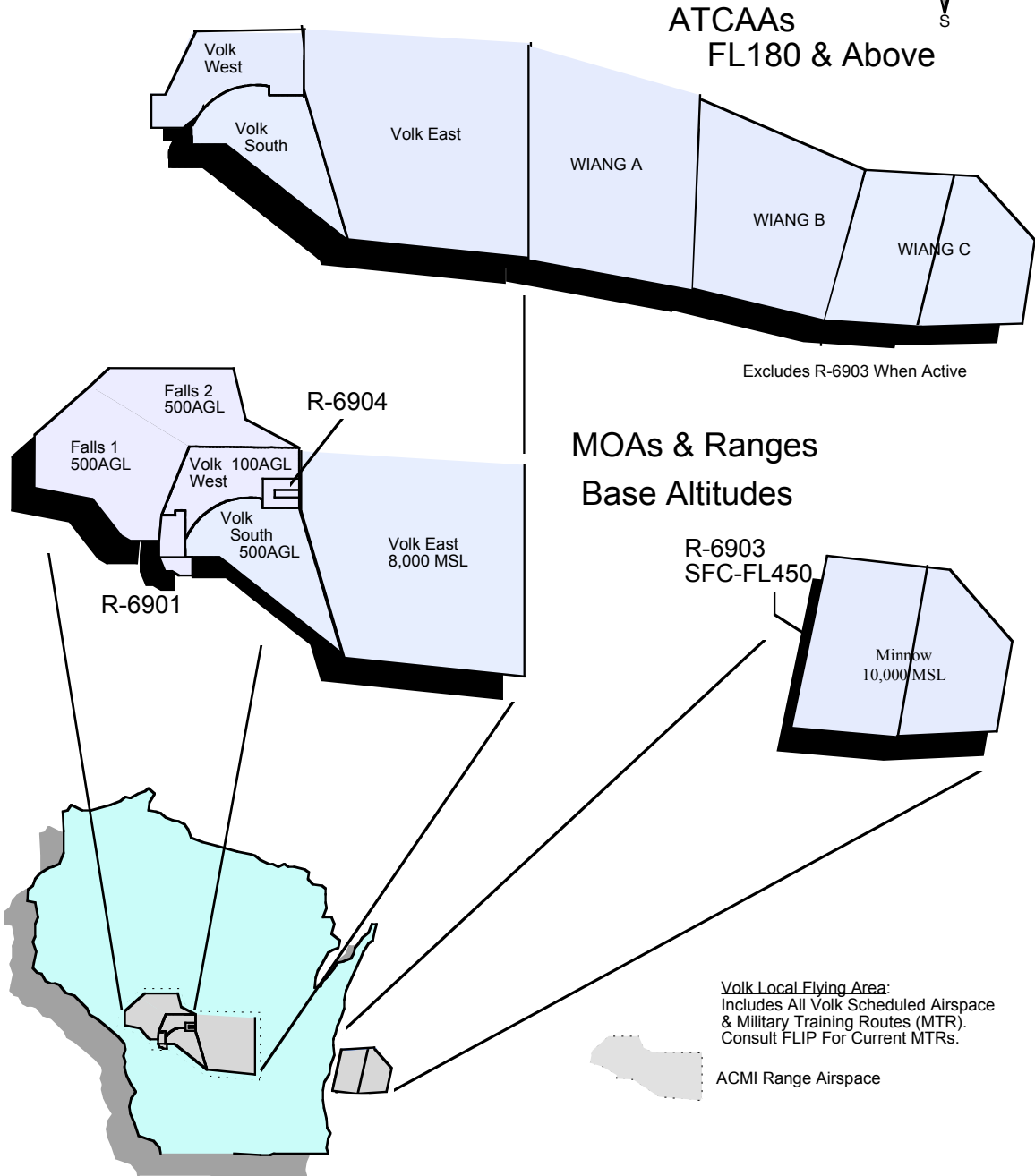
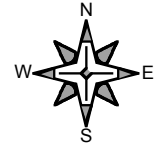
FM mode base operations:

138.9250	Fire alarm system	172.3000	Communications network
163.4625	F1 - Movement area (100.0 PL)	173.0250	Civil engineering training
163.4875	Inputs 173.6375 (118.8 PL)	173.1000	Fireground & Fire training
163.5125	Disaster preparedness	173.5875	Inputs 170.125 (123.0 PL)
163.5875	F5 - Civil engineering	173.5875	Fire/Crash backup
165.1125	(100.0) Medical Training	173.6375	Security Net#2 & security training
165.1125	Harwood Range (67.0 PL)	173.6375	F4 - Security Police (118.8 PL)
165.1375	Shared training net	173.7125	ABO network
170.1250	F2 - Fire/Crash (123.0 PL)	173.7375	Operations Training & Base Ops
171.3875	128 th ACS Primary	413.3750	Training Net #1
171.9750	POL/Fuels training	413.3750	Gunnery Range network
171.9750	Inputs 165.1125 (67.0 PL)	413.4000	Training Net #2
171.9750	Command network	413.4000	Volk Fuels network
172.3000	F3 - Personnel Communications Net		

Army vehicle convoys training at Volk CRTC have been allocated these FM mode lowband frequencies:

29.90 30.10 32.30 32.50 32.70 34.90 36.10 36.30 36.70 38.45 40.90 40.95 46.70 46.90

Local Flying Area & R-6904



Volk area aircraft operations:

126.200	346.525	GREEN-1	PHOENIX CRTC Mission Coordinator Primary
127.500	239.250		Tower / SFA / CTAF (formerly 236.600 UHF)
121.900	275.800		Ground
135.150	307.100		Volk & Camp Douglas App / Dep via Volk radar
135.250	290.800	WHITE-3	App / Dep via Volk RAPCON & GCA
133.300	380.350		App / Dep via Chicago Center Volk Field
	257.925		App / Dep via Chicago Center Lone Rock RCAG
121.375	263.000		App / Dep via Chicago ARTCC Oshkosh – High Altitude
120.375	263.000		App / Dep via Chicago Center Rockford RCAG Hi-Alt
123.825	360.600		App / Dep via Chicago Center Milwaukee (Oak Creek RCAG)
125.050	269.650		South & East MOA's App / Dep via Chicago Center
125.100	323.100		R6903 & Sheboygan Range App / Dep via Chicago Center
134.950	287.900		AR640A/B / Minnow MOA App / Dep via Chicago Center
120.600	371.900		R6903 / Minnow MOA App/Dep via Minneapolis Center
124.400	317.700		West/Falls MOA R6904 NE App / Dep via Minneapolis Center
120.850	322.350		App / Dep via Minneapolis Center White Cloud RCAG
124.100	269.000		App / Dep via Minneapolis Center Sioux City RCAG
128.600	363.000		R6901A/B Fort McCoy SW App / Dep via Minneapolis Center
	327.150		Volk MOA's Entry / Exit via Minneapolis Center
121.500	243.000		Emergency Guard (40.50 FM)
	372.200	RED-1	Pilot Dispatch
	373.100		Command Post
	344.600		Meteorology network
	395.100		Aircraft maintenance network
	343.750		Have Quick Time of Day synchronization pulses
	260.400		Sheboygan Range R6903
132.025	358.200	YELLOW-12	Hardwood Range R6904 Primary (34.20 FM Backup)
34.20	297.100	RED-2	Hardwood Range R6904 Secondary (34.20 FM backup)
	298.775		Brochure Primary - 128 ACS
	283.775		Brochure Secondary - 128 ACS
	252.975	GREEN-5	Brochure Tertiary - 128 ACS
	276.975	GREEN-6	Brochure Alternate - 128 ACS
123.850	372.900		Single Frequency Approach
138.100	392.200		Single Frequency Approach
138.500	389.900		RAPCON GCA Radar Approach
	379.400		RAPCON GCA Radar Approach
	392.000		RAPCON GCA Radar Approach
126.075	319.850	PHANTOM E	ACMI Wautoma TIS Com Eastern Primary
127.075	322.450	PHROST E	ACMI Wautoma TIS Com Eastern Secondary
	335.550	PHROST Sec	ACMI Wautoma TIS Com Eastern Alternate
	343.750		ACMI Building 511
	346.250		ACMI Millston TIS Com former PHOENIX Primary R6904
124.175	348.650	PHANTOM W	ACMI Millston TIS Com West & Falls MOA Primary

125.475	370.950	PHROST W	ACMI Millston TIS Com West & Falls MOA Secondary
	377.050	PHANTOM Sec	ACMI Millston TIS Com West & Falls MOA Backup
134.100	327.050		ACMI Wautoma TIS Com Eastern Backup
138.200		YELLOW-1	ACMI Northern Lightning exercise - AWACS directed
	276.950		ACMI during Northern Lightning exercise
	322.250	YELLOW-9	ACMI during Northern Lightning exercise
	266.250	BLUE-5	ACMI during Northern Lightning exercise
	276.850		ACMI during Northern Lightning exercise
	346.550		ACMI during Northern Lightning exercise
	348.300	BLUE-4	ACMI during Northern Lightning exercise
	364.250		PHOENIX alternate during Northern Lightning exercise
41.90	247.400		McCoy Range Control R6901
124.600	241.000		McCoy Tower (41.70 FM)
138.350	319.025		WI ANG Air Tac Northern Lightning exercise
139.700			Minneapolis ANG Air Tac Northern Lightning exercise
139.800			Indiana ANG Air Tac Northern Lightning exercise
141.575			Illinois ANG Air Tac Northern Lightning exercise
143.550			PHOENIX tactical network Northern Lightning exercise
	305.500	BLUE-2	AR640A Refuelling Primary
	291.900	BLUE-3	AR640B Refuelling Primary
	320.900	RED-4	AR640A/B Refuelling Secondary
	261.200		Minnow MOA & AR640A/B AWACS tactical net
	391.000		AR640A/B Air Tactical
	396.200		AR640A/B Air tactical
	396.600		AR640A/B Air tactical
	396.900		AR640A/B Air tactical
	398.800		AR640A/B Air tactical
	225.725		AWACS tactical network Northern Lightning exercise
	299.175	YELLOW-11	Search and Rescue network during Northern Lightning exercise
	364.200		USAF AICC Primary during Northern Lightning exercise
	371.100		AWACS tactical network during Northern Lightning exercise
	377.000	YELLOW-4	VIKING Ops w/AWACS during Northern Lightning exercise
	388.850		J-STARS Air Intel network during Northern Lightning exercise
	388.950		AWACS Air Intel network during Northern Lightning exercise
	Unkn	GREEN-6	UHF Satcom channel

Wisconsin National Guard Aviation, West Bend Municipal Airport, Wisconsin:

122.800 CTAF / Unicom
124.750 Clearance
120.000 AWOS
125.350 / 307.000 Approach / Departure via Milwaukee radar
122.100 . 255.400 Flight Service Station

National Guard operations:

40.80 (FM) 40.90 (FM) 41.60 (FM) 46.70 (FM) 123.050 123.450 240.300 241.000

131st Fighter Wing Missouri ANG - F15C's, Lambert Field, Saint Louis, Missouri:

F15's will transfer to Nellis AFB and Atlantic City Intl Airport as part of base reallocations.

122.950 Unicom
125.025 379.925 ATIS
119.500 363.100 Clearance
121.650 387.050 Outbound ground
121.900 348.600 Inbound Ground
127.550 360.200 Ground Metering East
121.075 346.350 Ground Metering West
118.500 257.700 Tower South
120.050 284.600 Tower North
121.500 243.000 Emergency Guard
124.200 353.900 Class B Airspace North/East
126.500 254.300 Class B Airspace South/West
132.125 360.600 Approach North/East
133.550 338.250 Approach South/West
123.700 289.100 Approach Aux. channel
119.150 335.500 Departure North/East
128.100 307.050 Departure South/West
126.550 270.350 Departure
124.250 289.100 Departure Aux. channel
126.500 Departure
122.050 255.400 Flight Service Station
122.600 Flight Service Station
123.200 382.600 Boeing Flight Ops - callsign MAC RADIO
297.900 MO ANG Command Post callsign - BANJO OPS
261.700 Approach via GCA radar
294.900 Approach via GCA radar
293.600 Approach via GCA radar
351.400 Approach via GCA radar
379.100 Approach via GCA radar

FM mode base operations:

138.7400	131 st FW Operations	149.1500	Civil engineering
140.0750	Unknown	163.0000	Maintenance
140.7750	Unknown	163.4625	Base operations
148.0750	POL trucks/Flight line	163.4875	Security
148.2000	Fire/Crash	163.5125	Unknown
148.4500	Munitions	163.5875	Unknown
148.5000	Aircraft maintenace		

131st Fighter Wing, 110th Fighter Squadron, F-15A presets:
Callsigns: BUD, MICK, MISTY, MUDDY, SAVAGE

01	297.100	Operations	11	360.200	KC Center
02	363.100	Clearance	12	272.700	KC Center Mer
03	387.050	Ground Out	13	350.200	KC Center
04	348.600	Ground In	14		
05	257.700	Tower	15	257.9 ?	Howard MOA
06	289.100	Departure S	16	347.300	Tac
07	324.100	Approach S	17	277.200	ATIS
08	335.500	Departure N	18	273.500	ATIS BLV
09	284.600	Tower Out E	19	270.100	ATIS SPI
10	379.100	Arr STA	20	240.150	MX

Air Tactical: 30.50 (FM) 139.950 140.125
240.150 248.150 249.150 252.525 294.000 294.900 299.500
303.000 328.400 335.950 340.150 347.300 351.400 388.850

Whiteman AFB, near Kansas City, Missouri:

509th Bomb Wing, 13th Bomb Group - B2's, 442nd Fighter Wing AFRC - A-10's, 47th Rescue Squadron, 1st Battalion 135th Aviation Regiment Missouri National Guard - AH-64 & OH-58's, 72nd Test and Evaluation Squadron, Undersea warfare Unit 114 USNR

139.300	239.025	ATIS (118.750?)	128.275	275.800	Ground
132.400	255.600	Tower		226.200	Tower Aux. UHF channel
121.750	335.800	Clearance	121.500	243.000	Emergency Guard
118.725	372.200	Pilot Dispatch	127.450	284.000	Approach
125.925	398.200	Departure		280.150	Battalion Ops
	311.000	Command Post		321.000	Command Post
	381.300	Command Post		266.200	Supervisor of Flight
	344.600	PMSV Metro weather		318.050	Foxtrot / Spirit Control / Mad Dog
	369.900	Remote briefing service via Kansas City Metro			
135.575	323.150	Approach / Departure via Sedalia RCAG			
125.500	327.000	Approach / Departure via Butler RCAG			
139.000	242.400	Hawk operations (41.00 & 49.65 FM)			
138.125	227.800	303 rd TFS operations Callsign - GROUND HOG (36.50 FM)			

Whiteman AFB USAF/Motorola P25 digital trunked system: ID-B310, Base Frequency: 406.1125, Spacing: 12.5 Khz, Offset channel number 380. System frequencies: 406.1125 406.1500 406.5000 407.5500 407.8875 407.9500 408.1500 408.7625 410.7000. Also simplex encrypted: 407.3625 410.3625

Encrypted active talk groups:

16, 48, 80, 88, 112, 120, 144, 152, 176, 304, 688, 720, 844, 1520, 1616, 1680, 2104, 2288, 3312, 3536, 3856, 4944

Non-Encrypted talk groups:

240	1488	2096	4848
272	1584	3280	
656	1936	3920	
1328	2064	4624	

Former FM mode base operations (most now on trunked system):

41.0000	National Guard operations	163.5875	Security
148.0500	Command network	164.5000	Ambulance
148.0750	Unknown	165.0125	POL trucks
148.2450	Civil engineering	165.0375	Security
148.9500	Unknown	165.1875	Security
149.1750	Former silo net	173.5875	Fire/Crash
149.2000	Unknown	173.6375	National Guard operations
149.2350	Former silo net	173.6375	Medical network
149.2650	Aircraft maintenance	173.6625	Unknown
149.5750	Command network	407.3750	Security
149.5750	Unknown	412.8250	Inputs 407.375
150.1000	Unknown	413.0000	Unknown
150.3750	Unknown	413.4500	Alert pagers
163.5125	Security	413.8250	Unknown
163.5375	Base operations		

442nd Fighter Wing, 303rd Fighter Squadron A-10's presets:
Callsigns: BORG, CHISEL, CLAW, GONZO, HAWG

01	36.50	138.125	227.800	Ground Hog
02	36.60	121.750	335.800	Clearance / Riley RC
03	49.95	128.275	275.800	Ground / Campbell RC
04	38.50	132.400	255.800	Tower / Chalet RC
05	40.95	125.925	398.200	Departure / Polk RC
06	49.85	119.650	285.600	KC Center / Interflight
07	32.35	124.475	260.250	MOA Control / Interflight
08	46.85	120.250	286.350	Arrival / Interflight
09	49.95	127.450	284.000	Approach / Interflight
10	34.60	122.400	255.400	FSS / Interflight
11		139.450	392.200	Cannon
12		125.400	241.000	Forney
13		139.700	316.900	Smokey
14		138.400	358.250	SFA / Interflight
15		118.725	239.025	ATIS
16		149.525	305.100	MOA / Interflight
17		149.100	317.900	KC Cannon / Interflight
18		148.450	327.000	KC Forbes / Interflight
19		138.300	255.900	Forbes Tower
20		149.250	220.000	HQ / Interflight

Other air tactical: 138.100 138.200 138.425 138.875 150.825 305.100 323.150

509th T-38 Trainers callsign - FAST##

13th BG Callsigns: ACC##, AEGIS99, AMPEX31, ARCO71, CZAR, CURD, DEATH32, GHOST, HARNO11, MINE41/42, MOTUS61/63, NARK31, NEST21, SPIRIT, TRUN31, WAIT

13th BG Air tactical: 360.850 388.850 (273.450 w/Kansas City Center)

Offutt AFB, Omaha, Nebraska:

55th SRW - RC-135's, 1st ACCS - E4B NAOC (747-200), U.S. Strategic Command Headquarters - EC-135, Global Operations Center & Mobile CP, USAF Weather Center, 20th Intelligence Squadron.

- 126.075 273.500 ATIS (sometimes relayed on 138.100)
- 121.700 289.400 Ground (261.250 & 275.800 past use)
- 123.700 279.625 Tower
- 120.900 241.200 Tower - past use
- 126.600 236.600 Tower - past use
- 361.400 Clearance
- 121.500 243.000 Emergency Guard
- 120.100 354.050 Omaha Approach / Departure West
- 124.500 263.000 Omaha Approach / Departure East
- 118.000 298.875 Omaha Approach / Departure long range
- 379.400 Single Frequency Approach
- 135.350 Auxilliary frequency
- 311.000 Command Post callsign - RAYMOND 21
- 321.000 Command Post callsign - RAYMOND 21
- 233.700 STRATCOM Command Post - callsign - ICEHOUSE
- 323.800 Stratcom Tactical (Emergency Action Message broadcasts nationwide)
- 134.100 290.550 Approach via GCA radar
- 135.350 340.900 Approach via GCA radar
- 378.800 Approach via GCA radar
- 335.500 Approach via GCA radar
- 372.200 Pilot Dispatch
- 227.400 PMSV Metro weather
- 344.600 PMSV Metro weather
- 318.700 Royal Air Force operations callsign PLAINSMAN
- 240.150 Command Post callsign - COBRA OPS
- 297.300 Local refuelling "Pawnee-Lamoni" Track Primary
- 396.200 Local refuelling "Pawnee-Lamoni" Track Secondary

- HFGCS Voice: 4.724 6.739 8.992 11.175 13.200 15.016 (All frequencies USB mode)
- ALE: 3.137 4.721 5.708 6.721 9.025 11.226 13.215 15.043 18.003 23.337
- Discretes: 5.025 9.234 9.315 10.589 11.159 11.407 11.607 12.087 13.547 15.715 18.594
20.042 20.420 23.407 23.419

Motorola type 2 trunked system ID: 6320, Base freq: 406.000, Spacing 25 Khz, Offset channel 380.
Freqs: 406.350 406.750 407.150 407.550 407.950 408.200 408.350 408.750 409.150 409.5500 409.950

Talkgroups:

- | | | | |
|-----|------------------------------------|-------|--------------------------|
| 16 | Eagle Eye | 816 | Aircraft Tow |
| 48 | Voice Weather | 880 | Base Ops |
| 80 | MOC Net | 944 | Mail Delivery |
| 112 | Night Watch | 1008 | Stratcom Elite Guard |
| 176 | AC Maintenance | 1232 | Red Control |
| 208 | Flight Service | 1456 | Cable Maint |
| 272 | Base Operations | 1520 | Sierra Control |
| 368 | Maint. 3 | 1552 | E Tech |
| 400 | Refueling | 1616 | Perimeter Guard |
| 432 | Shuttle Buses | 1744 | 55 SFS (Security Forces) |
| 528 | 55 CE (Civil Engineering Squadron) | 1776 | 55 SFS (Security Forces) |
| 592 | Fire & EMS | 6064 | Phone Patch |
| 656 | EEP | 6096 | Hanger |
| 688 | Medic 3 | 12048 | Phone Patch |
| 784 | Runway Check | | |

Former FM mode base operations:

40.1700	USAF OSI	150.2750	Unknown
40.1900	USAF OSI	150.2850	Fire/Crash
49.7000	EOD	163.0625	Civil engineering
138.0750	USAF OSI	163.3125	Disaster network
138.1650	USAF OSI	163.4625	Unknown
138.1750	USAF OSI	163.4875	Security
138.3250	Base pagers	163.5125	Security
139.6500	Unknown	163.5625	Mobile control
139.8250	Unknown	163.5875	Unknown
139.8750	Unknown	164.5000	Unknown
140.4000	1 st ACCS operations	165.0125	Unknown
142.1250	IBR network	165.1125	Unknown
143.4600	USAF MARS	165.1375	Unknown
143.8250	Old NEACP alerting	165.1625	Unknown
148.0350	55 th Wing CP	173.3875	Fire/Crash
148.2250	Unknown	173.5875	Fire/Crash
148.4750	Unknown	407.3750	Unknown
148.5000	Unknown	407.4250	Unknown
149.0500	Ramp control	408.2000	Base Police
149.1750	Missile network	413.1500	Field maintenance
149.2350	Transportation	413.2000	Base operations
149.5000	Command network	413.3000	Snow removal
149.5250	Command network	413.4500	Crew alerts
150.0250	Transportation	419.9000	Unknown
150.1950	Medical network		

Tinker AFB, Oklahoma:

USN Command Strategic Communications Wing One (CSCW-1) - E6B Mercury TACAMO, 552nd Air Control Wing - E3 AWACS, 507th Aerial Refuelling Wing, - 465th ARS, Oklahoma City Air Logistics Center, 72nd Air Base Wing, 3rd Combat Communications Group, 38th Engineering Installation Group.

119.150	270.100	ATIS (115.800?)
121.800	275.800	Ground
124.450	251.050	Tower (289.600 past use)
119.700	335.800	Clearance
121.500	243.000	Emergency Guard
120.450	385.500	Oke City Approach / Departure Southeast
124.200	336.400	Oke City Approach / Departure Northeast
124.600	266.800	Oke City Approach / Departure Northwest
126.650	263.075	Oke City Approach / Departure Southwest
134.100	372.200	Pilot Dispatch
141.650	287.450	ACC Command Post
139.950	305.600	ACC Command Post - 552 nd ACW
	228.450	507 th ARW Command Post callsign SOONER Control / OKIE OPS
	381.300	ACC Command Post - callsign RAYMOND 24 / RAMROD
	310.150	STRATCOM Wing 1 Command Post
	238.250	AFRC Command Post
139.650	382.600	AFMC Flight Test operations - callsign - SABRE
	261.025	PMSV Metro weather
138.875	354.125	Single Frequency Approach
	392.100	Single Frequency Approach - past use
138.150		Terminal operations
	225.350	AWACS maintenance checks

FM mode base operations:

34.1000	Training net	164.2000	Inputs 173.5625
41.9500	Law Enforcement	164.3250	Maintenance
46.8500	Training (low power)	164.9625	Medical network
49.8500	Training (low power)	165.1125	Unknown
138.0250	Unknown simplex	165.1375	Base Taxi
138.1250	Law Enforcement (B-1B security)	165.1625	Civil Engineers
138.1500	Terminal operations	165.1875	Maintenance
138.2750	Inputs 138.125	165.6625	Fire/Crash
138.4250	Security	165.6875	Base operations
139.8000	Maintenance	166.2000	Maintenance-Nav aids
139.9500	Command Post	173.1000	Contingency (Emergency)
140.0000	Maintenance	173.5125	Fire/Crash
141.6250	Transportation Department	173.5625	AFLC Command network
141.6500	Command Post	406.1625	Security (110.9 PL)
142.1500	Inputs 143.450	406.5625	Ground operations
142.2250	AFR Command Post	407.1625	Security (156.7 PL)
143.4250	Logistics	407.3750	Aircraft maintenance F1
143.4500	USAF MARS	407.4000	Convoy Training (low power)
143.5000	Inputs 150.075	407.4250	training (low power portables)
143.6000	Inputs 150.125	407.4500	Defense Property Disposal Office
143.7000	Inputs 150.400	407.4750	Central Base Paging
143.8250	Logistics	407.5250	training (low power)
143.9250	Logistics	407.5500	Aircraft maintenance F2 - E3's
148.2000	Supply Department	408.0250	76 th Propulsion Maintenance
149.2250	APOE Net	408.0500	Aircraft maintenance F3
149.2350	Unknown	408.1750	Aircraft maintenance F4
149.2500	Maintenance	408.8000	Maintenance
149.3250	Maintenance	412.9250	Contingency network
149.5000	Mobility Net	412.9500	Commander network
150.0750	USN VQ-3 Maintenance	413.0250	Training (low power portables)
150.1250	USN STRATCOM Hangar Security	413.0500	Medical network
150.1750	Inputs 149.200	413.1000	Commanders network
150.2500	Command Post	413.1500	Supply Receiving network
150.2750	Command Post	413.2000	Training Civil Engineers (low power)
150.3000	Fuels Folks	413.2500	Maintenance (low power portables)
150.3150	Police	413.2750	Training
150.4000	USN VQ-4 Maintenance	413.3000	Training Civil Engineers (low power)
162.0250	Transit Alert	413.4000	Contingency/Commanders network
163.4625	Maintenance	413.4500	Aircrew Alerting
163.4875	Security	413.4750	Public Works
163.5125	Disaster preparedness	415.1625	Inputs 406.1625
163.5375	Fire/Crash (110.9 PL)	416.1625	Inputs 407.1625
163.5875	Base Ops/Ramp Control	461.1500	Midwest Ambulance (D612)
164.1250	Fire/Crash	461.8250	Midwest Ambulance (D612)
164.1750	Security		

552nd Air Control Wing E3 AWACS callsigns: (aircraft: SHUCK, SCOUT, GOLIATH)
CHALICE - 963rd Squadron DRAGNET - 966th Squadron (training squadron)
BANDSAW - 964th Squadron DARKSTAR - 965th Squadron
THUMPER - 970th Squadron (513th) MAGIC - NATO Missions

AWACS Have Quick Time of Day synchronization pulses: Pri - 341.750 Sec - 287.450

AWACS USAF Airborne Intercept Command and Control Primary: 364.200 ("AICC")

AWACS Reported TADIL A/C voice coordination nets:

225.800 261.200 288.200 303.100 313.600 **320.600 388.175** (used by J-STARS for JTIDS)

AWACS Reported air to ground use:

138.100 138.150 139.900 141.700 225.300 227.350 231.350 235.950 236.600 239.900 252.100
266.100 276.800 283.000 286.850 290.300 293.800 311.200 342.250 345.350 350.950 354.200
357.800 382.600 389.000 394.700

AWACS Reported voice communications nationwide allocations:

237.150 269.950 317.950 324.650 335.950 (THUMPER Secondary)

AWACS Reported voice communications with OAK GROVE (NORAD):

228.800 256.600 263.200 275.100 287.800 306.400 381.350 383.000

AWACS Reported discrete frequency nationwide allocations - training and operations:

225.650		283.850		333.300
225.725	ANG Training Freq	283.950		336.800 Northstar
225.825		284.050		339.000
226.000		284.150	Have Quick	339.950
228.400		287.450	Have Quick	342.400
230.400	ANG Training Freq	288.400	NEADS / Offutt	342.650
233.450		296.650		343.300
233.500		300.225	Have Quick	345.500 Northstar
233.550		300.475		355.200 NEADS
234.650		301.300		355.425
235.200		302.400	Training Midwest	359.225
235.600		305.550	Northstar	363.900
251.800		308.000		363.950
253.400		312.950		364.150
254.400		313.000		375.925
257.000		314.700		375.925 Have Quick
257.200		315.125		376.125 Have Quick
277.600		315.250		377.150
278.400		318.000		377.700
282.500	Midwest Training	319.300	Have Quick	377.800
282.600	NEADS	324.400		382.350 Northstar
282.700	Refuelling Tac	324.450		388.950 Secure Comms
283.650		324.550		
283.750		326.400	NEADS	

OK ANG 183rd Fighter Wing - F16's, OK National Guard Helos, Tulsa, Oklahoma:

- 124.900 377.200 ATIS
- 121.900 348.600 Ground
- 134.050 284.700 Clearance
- 118.700 257.800 Tower runways 18R/36L
- 121.200 310.800 Tower runways 18L/36R & 08/26
- 119.100 351.800 Approach / Departure East
- 124.000 338.300 Approach / Departure West
- 119.850 381.200 Final Approach East
- 132.100 319.900 Final Approach West
- 134.050 284.700 PTC
- 122.200 Flight Service Station via Mc Alester RDO (also 123.650)
- 141.900 381.100 ANG Command Post - callsign LUNAR OPS (383.000 past use)
- 260.400 Pilot Dispatch
- 139.450 267.300 OK National Guard operations (46.90 FM 46.90 FM 149.350)

FM mode base operations:

- 138.9250 Unknown 163.5125 ANG (151.4 PL) 164.1750 Security
- 163.4625 Unknown 163.5625 Unknown 173.5875 Disaster Preparedness
- 163.4875 Security 163.5875 Disaster Preparedness

138th Fighter Wing, 125th Fighter Squadron F-16C/D Block 42 presets:
Callsigns: ARROW, BRAVE, CREEK, LOCO, OSAGE, PONNCA, TRIBE, TULSA, VIPER

- 01 381.100 11 141.900 15 149.450 257.700
- 02 121.900 348.600 Ground 12 149.350 290.450 20 124.900
- 08 119.300 13 149.375
- 09 363.200 14 149.400 353.900

Other reported air tactical: 32.45 FM 34.20 FM 34.60 FM 41.45 FM 142.250 149.500 319.400

McConnell AFB, near Wichita, Kansas:

22nd ARW - KC-135's, 931st ARG - Kansas ANG 184th ARW. The 184th Bomb Wing's B-1's have been transferred to other bases. The 184th ARW will acquire additional KC-135R's, but also eventually relocate to Forbes Field.

- 124.650 269.900 ATIS
- 118.000 275.800 Ground
- 127.250 291.775 Tower (295.700 past use) (233.700 Aux. channel)
- 126.800 313.600 Beech Aircraft Field Tower
- 127.250 Cessna Aircraft Field Tower
- 314.600 Military CTAF
- 134.800 269.100 Approach / Departure East low altitude
- 134.850 385.550 Approach / Departure East high altitude
- 126.700 353.500 Approach / Departure West
- 120.600 290.300 Wichita Approach / Departure (also 127.250)
- 124.750 281.500 Departure
- 123.125 287.000 Boeing Ground (also 266.025)
- 311.000 Command Post (also 321.000)
- 301.600 Kansas ANG operations (former use by 184th Bomb Wing)
- 252.100 931st Aerial Refuelling Group operations (also 278.400)
- 375.200 PMSV Metro weather
- 372.200 Pilot Dispatch
- 369.900 Remote pilot briefing via Kansas City Metro

323.200 Bison Range operations (also 390.000)
294.900 Eureka Range operations (also 380.200)
139.700 304.900 Smokey Range operations (also 316.900)
262.250 Have Quick

Single Frequency Approach operations: 302.200 339.300 351.100 372.900

Former "Jayhawk" ANG operations: 228.900 236.800 264.600 303.000

FM mode base operations:

138.0750	USAF OSI	148.4500	Smokey Range Ops	163.5875	Aircraft maintenance
138.1750	USAF OSI	148.4750	POL trucks	164.5000	Unknown
138.3250	Base pagers	148.5000	Job control	165.0125	Civil engineering
138.8750	Unknown	148.5250	Smokey Range Ops	165.6125	Aircraft maintenance
139.6250	Unknown	149.2000	Civil engineering	173.4625	Command Tac 1
140.4000	Unknown	149.3000	Unknown	173.5375	Command Tac 2
141.5250	USAF OSI	149.3250	Unknown	173.5625	Medical network
141.5750	Security	149.4750	Siren alerts	173.5875	Fire/Crash F1
141.6250	Security	149.5750	Unknown	407.4750	Unknown
141.9000	Security F1	150.2000	Inputs 148.300	413.0000	Ground support
142.5750	Unknown	150.3250	Unknown	413.0250	Ground support
143.4250	Unknown	150.3500	Unknown	413.0500	Unknown
143.8750	Unknown	163.4625	Unknown	413.1250	Unknown
148.0750	Unknown	163.4875	Unknown	413.1500	Unknown
148.1000	Smokey Range Ops	163.5125	Unknown	413.4500	Alert pagers
148.3000	Disaster network	163.5375	Command network		

Ellsworth AFB, Rapid City, South Dakota: 28th Bomb Wing - B1's

Note: This unit is scheduled to move to Dyess AFB, TX as part of base reallocations. The AFB will close.

120.625 269.900 ATIS
121.800 275.800 Ground
126.050 353.500 Tower
121.500 243.000 Emergency Guard
119.500 259.100 Approach
119.500 289.400 Departure
127.950 338.200 Approach / Departure via Denver ARTCC Rapid City RCAG
311.000 ACC Command Post - callsign RAYMOND 33
321.000 ACC Command Post
375.775 PMSV Metro weather
372.200 Pilot Dispatch
373.000 GCA Radar
393.000 GCA Radar
283.600 Edgemont Range (also 385.700)
354.300 Hastings Bomb Plot
234.800 Powell Bomb Plot
258.200 Rawlins Bomb Plot
300.600 Riverton Bomb Plot
226.200 Belle Fouché Bomb Plot (also 381.000 381.100)
266.200 Helicopter operations
287.700 Have Quick Time of Day synchronization pulses

Motorola P25 digital trunked system ID: 17E, Base Frequency 136.000,0 Step 12.5 Khz. Frequencies:
138.2375 138.2625 138.3375 138.3625 138.4125 138.5625 138.6375 139.1875 139.7625

Trunked system talk groups:

1 Maintenance	11 Maintenance	20 Security
2 Maintenance	12 Maintenance	21 Maintenance
3 Maintenance	13 Dispatch	23 Aircraft parking
6 Maintenance	14 Maintenance	24 Administration
7 Office Information	15 Movement area	25 Maintenance
8 Maintenance	16 Fire/Crash	38 Security
9 Aircraft maintenance	17 Fire/Crash	39 Runway
10 Aircraft maintenance	19 Maintenance	41 Medical network

Former report FM mode base operations:

148.5450 Civil engineering	150.3150 Civil engineering	172.7250 Medical network
148.9850 Base operations	163.0000 Security	173.5625 Medical network
149.1500 Unknown	163.3750 Security	173.5875 Fire/Crash
149.2250 Unknown	163.4625 Transportation	173.7750 Civil engineering
149.2750 Unknown	163.4875 Security	409.9000 Unknown
149.5750 Command network	163.5375 Security	413.1500 Unknown
150.1000 Base operations	164.5000 Unknown	413.4500 Alert pagers
150.1750 Civil engineering	165.0625 Unknown	
150.1750 Base operations	171.7750 Civil engineering	

28th Bomb Wing, Ellsworth AFB, South Dakota B-1 Callsigns: THUG, BONE, STRAT, TIGER
Reported air tactical: 8.550 (USB) 142.125 345.200 287.700 377.700 388.875

Kansas ANG 190th Air Refueling Wing - KC-135's, Forbes Field, Topeka, Kansas:

As part of base reallocations Forbes will retire its KC-135E's, gain KC-135R's and gain additional national guard resources. A greater midwest air refuelling role will be played by aircraft operating from this facility in the future.

122.950	Unicom
128.250	ATIS / ASOS
122.450	Flight Service Station Wichita RDO, Topeka RCO
121.700 275.800	Ground
121.500 243.000	Emergency Guard
123.800 343.700	Approach / Departure via Kansas City Center Topeka RCAG
120.800 340.200	Tower
236.600	Tower
286.500	190 th ARW KA ANG operations callsign - WYLIE CONTROL
304.600	1-108 th Aviation Kansas Army National Guard UH-60A's (41.70 FM)

Reported air tactical: 143.800 332.200

FM mode base operations:

148.0500 Command network	163.4875 Security	173.5625 Medical network
148.5450 Unknown	164.5000 Medical network	173.5875 Fire/Crash
163.3750 Security	165.0125 Unknown	413.4500 Alert pagers
163.4625 Unknown	173.5375 Unknown	

Minot AFB, North Dakota:

5th Bomb Wing - 23rd Bomb Squadron - B-52H's, 91st Space Wing - 150 Minuteman III, 91st Security Forces Group, 54th Helicopter Squadron

- 278.800 ATIS
- 326.200 Clearance
- 134.000 275.800 Ground
- 120.650 236.600 Tower
- 253.500 Tower
- 119.600 363.800 Approach
- 119.600 259.100 Departure
- 127.600 279.600 Approach / Departure via Minneapolis ARTCC Minot RCAG
- 121.500 243.000 Emergency Guard
- 321.000 Command Post - callsign RAYMOND 21
- 249.975 5th BW operations - callsign FORTRESS CONTROL
- 342.500 PMSV Metro weather
- 372.200 Pilot Dispatch

5th BW Air Tactical: 281.450 300.125 300.225 310.250 (Callsigns: CASE, CHILL, ICER, LEMAY)

FM mode base operations:

- | | | | | | |
|----------|----------------------|----------|----------------------|----------|-----------------------|
| 173/5875 | Fire/Crash | 149.3250 | Unknown | 164.4625 | Security |
| 148.0350 | Unknown | 149.3750 | Unknown | 164.5000 | Unknown |
| 148.0650 | Unknown | 149.4750 | Unknown | 165.0125 | Unknown |
| 148.2150 | Unknown | 149.5350 | Missile network | 165.1125 | Security |
| 148.3000 | Unknown | 149.5450 | Aircraft maintenance | 165.1375 | Medical network |
| 148.4500 | Unknown | 149.5650 | Aircraft maintenance | 165.1625 | Security |
| 148.4750 | Unknown | 150.1000 | Unknown | 170.9625 | Command network |
| 148.5150 | Aircraft maintenance | 150.1350 | Unknown | 173.5125 | Disaster preparedness |
| 148.5150 | Unknown | 150.3450 | Unknown | 173.5375 | Disaster preparedness |
| 148.5450 | Unknown | 163.0000 | Unknown | 173.5625 | Unknown |
| 148.9500 | Unknown | 163.4625 | Security | 413.0000 | Unknown |
| 149.1750 | Unknown | 163.5125 | Unknown | 413.1500 | Unknown |
| 149.2350 | Security | 163.5875 | Security | 413.4500 | Alert pagers |
| 149.2650 | Unknown | 164.1000 | Unknown | | |

119th FW, 178th FS - F-16's, ND ANG, Hector Intl Airport, Fargo, North Dakota:

This unit will be phased out as part of base reallocation and closings.

- 122.950 Unicom
- 124.500 379.200 ATIS
- 121.900 348.600 Ground
- 121.900 348.600 Clearance
- 133.800 290.400 Tower
- 121.500 243.000 Emergency Guard
- 120.400 377.150 Fargo Approach
- 127.700 370.850 Fargo Departure
- 122.425 Flight Service Station Grand Forks RDO
- 262.000 119th FW ANG operations
- 238.200 119th FW ANG maintenance

FM mode base operations: 143.7500 149.5250 163.0000 164.9625 164.9875 165.1375
Air tactical: 138.000 138.025 138.100 138.950 148.125 298.700 300.125 (callsign - NODAK)

132nd Fighter Wing Iowa ANG F-16's, Des Moines Intl Airport, Iowa:

This unit will be realigned. Block 30 F-16's will be added, Block 42 F-16's will be relocated.

- 122.950 Unicom
- 119.550 251.050 ATIS
- 121.900 348.600 Ground
- 134.150 317.550 Clearance
- 118.300 257.800 Tower
- 121.500 243.000 Emergency Guard
- 123.900 307.150 Approach / Departure East
- 135.200 360.700 Approach / Departure West
- 118.600 350.300 Approach via GCA radar
- 118.600 307.150 Class C Airspace
- 122.650 Flight Service Station - Fort Dodge RDO
- 138.150 252.900 ANG operations - callsign HAWKI OPS (260.400 former use)
- 41.50 ND National Guard operations

FM mode base operations: 163.4625 163.5875 173.5625

Air tactical: (callsigns: HAWKEYE, TACO, VIPER)

- 138.100 138.200 138.225 138.300 138.400 138.500 138.875 138.900 139.700 139.900 140.000
- 140.700 141.900 142.200 283.400 296.600 297.500 303.100 316.900 321.100 353.900 363.200

Former FM lowband tactical use: 32.65 34.55 36.45 36.85 41.45

IA ANG 185th ARW - KC-135's, Colonel Bud Day Field - Sioux City Gateway Airport, Iowa:

This facility will upgrade from KC-135E's to KC-135R's.

- 119.450 270.800 ATIS
- 121.900 348.600 Ground
- 118.700 254.300 Tower
- 122.450 255.400 Flight Service Station Sioux City RCO
- 124.600 307.000 Approach / Departure
- 124.100 269.000 Approach / Departure via Minneapolis Center (also 325.800)
- 141.825 373.100 IA ANG Comand Post - callsign BAT CAVE
- 233.400 IA ANG Crypt MOA operations (also 311.300)

Security: 163.4875 163.5875

Reported air tactical: 138.325 138.875 141.675 141.825 143.875 346.250 394.200

Iowa Army National Guard Helicopter presets, probably Des Moines based:

- | | |
|---------------------------|----------------------------------|
| 01 241.000 Tower | 11 351.800 DBQ ZAU |
| 02 257.800 Tower | 12 252.900 DSM Arv/Dep |
| 03 302.200 Air Tac | 13 360.700 DSM Arv/Dep |
| 04 255.500 FSS | 14 321.100 DSM Clearance |
| 05 243.000 Emergency | 15 280.800 Iowa Air Tac |
| 06 351.100 Chicago Center | 16 283.000 DSM ATIS |
| 07 247.200 Arv/Dep | 17 299.100 Iowa Air Tac (299.4?) |
| 08 340.000 Air Tac | 18 363.000 LSE/CMY MSP center |
| 09 381.200 Arv/Dep | 19 284.700 FCM MSP Center |
| 10 226.800 Tower | 20 307.300 RST MSP Center |

MN ANG 148th Fighter Wing - F-16's, Duluth International Airport, Minnesota:

The 148th's Block 25 F-16's will retire. The base itself will remain active as an air sovereignty alert (ASA) facility. U.S. Northern Command will assign various units here on a rotating basis. Candian forces aircraft are frequent visitors.

124.100 270.100 ATIS
121.900 348.600 Ground
118.300 257.800 Tower
125.450 255.900 Approach / Departure
122.350 Flight Service Station - Princeton RDO, Duluth RCO
139.900 288.900 Pilot Dispatch & MN ANG Command Post (6.735 LSB)

FM mode base operations:

148.0500 Civil Enginnering 148.2450 Unknown 149.1000 Base police F2
148.0650 Unknown 148.4050 POL Truck 149.1500 Security F1
148.0950 Security F2 148.4550 Medical network 165.1125 Unknown
148.1850 Fire/Crash 148.4850 Unknown 173.5375 Unknown
148.2000 Munitions 148.5150 Command 413.1500 Unknown

Air tactical: 135.850 138.150 138.300 138.350 138.425 138.475 138.500 138.900 139.725 139.800
139.900 142.300 142.600 254.400 276.400 293.300 298.300 399.000

148th FW - 179th FS, F-16C/D Block 25 presets:

Callsigns: (DINO,FROSTY,FLUG,GUNDOG,LAKER,ML,PIKE,POLAR, SNOWMAN,SPAD)

01 139.900 288.900 CP 08 133.550 321.300 15 138.300 276.400
02 121.900 348.600 Gnd 09 134.550 335.600 16 293.300
03 118.300 257.800 10 125.300 278.500 17 138.150 228.700
04 119.500 285.600 11 133.650 268.000 18
05 125.800 255.900 12 45.00 399.000 19 138.425 351.800
06 122.200 255.700 13 364.200 20
07 127.900 377.100 14 252.000

Wold Chamberlain Field, Minneapolis - St. Paul International Airport, Minnesota:

AFRC 934th Airlift Wing, MN ANG 133rd Airlift Wing C-130H's

135.350 272.750 TCA Arrival ATIS
120.800 Departure ATIS
132.525 ILS operations Runway 12L/30R
119.975 ILS operations Runway 12R/30L
133.575 Ground Metering
133.200 Clearance Delivery & Pre-Taxi
121.800 348.600 Ground North
121.900 Ground South
127.925 Ground West
133.575 Ground
122.300 Flight Service Station - Princeton RDO
123.675 273.550 Tower Runways 17/35
123.950 Tower Runways 12L/30R
126.700 Tower Runways 12R/30L & 04/22)
118.725 335.500 Approach North/East
126.950 335.500 Aproach South/West
124.700 357.400 Departure South/East
125.750 284.700 Departure North/West
132.975 Approach / Departure

125.000 Class B Airspace South
126.500 Class B Airspace North (also 121.200)
351.200 Pilot Dispatch
252.100 934th AW Command Post - callsign ABSTAIN
282.675 934th AFRC operations - callsign VIKING OPS
139.900 311.200 133rd AW operations - callsign CACTUS (240.150 & 314.200 former use)

FM mode base operations:

165.1375	Aircraft Maint	164.3000	Command network	163.4875	Security
413.4500	Alert pagers	163.5125	Fire/Crash	148.5450	Operations
413.2000	Civil engineering	149.2650	Flight line	163.5625	Operations
413.3000	Civil engineering	163.5875	Medical network		

Air Tactical: 141.800 148.200 376.025

R-4301 / Camp Ripley, Little Falls, Minnesota:

Camp Ripley trains units from all active and reserve components of the military. Foreign units from Canada, Great Britain, Norway and the Netherlands conduct training exercises on a regular basis. Camp Ripley conducts an extensive Winter Warfare Course for units and is designated the Primary Winter Training Site in the United States. Key assets include: 53,000 Acres (51,000 acres for maneuver), two gunnery ranges, computerized small arms ranges, two impact areas, infantry platoon battle course (IPBC), live fire shoot house, two automated record fire ranges, one table VIII & XII range & a 22-Classroom education center. The facility also includes Miller Army Airfield, Arden Hills Army Training Site and the Arno, Nicole, Ripley and Eva drop zones and Kalahar Landing zone.

The special forces training facility includes: a rappel tower, confidence course, demolition range, water training areas, MOUT training area, LFX opportunities, vehicle recovery range, Two prisoner of war compounds and a mounted land navigation course. Camp Riley also hosts the Minnesota State Police training academy. The facility makes extensive use of lowband FM (especially 36 MHz) and VHF communications.

118.050 239.000 Approach / Departure via Minneapolis Center
125.500 323.100 Approach / Departure
126.200 241.000 Miller Army Airfield Tower (49.20 FM)
49.65 Miller Army Airfield operations
148.350 360.250 Miller Army Airfield Localizer, future ATIS broadcasts
36.10 143.350 Range Command and Emergency Services
36.30 304.300 Range Control

National Guard operations and air tactical: 49.20 (FM) 139.300 141.350 143.100 143.400 229.400

Generic and Common Use Miliar Frequencies:

236.600	USAF Tower	311.000	Air Combat Command Primary
239.800	USAF Weather	321.000	Air Combat Command Secondary
241.000	Army Aviation	340.200	Navy Air Traffic facilities
241.100	Army Aviation	342.500	USAF Weather
243.000	Emergency Guard	344.600	USAF Weather
255.400	Flight Service Stations	349.400	Air Mobility Command
257.800	Civil Towers	360.200	Navy Air Traffic facilities
275.200	USAF Weather	375.200	USAF Weather
303.000	Air to Air Tactical		

Enroute Air Traffic Control Centers (“ARTCC”):

Site	Low Altitude	High Altitude	Ultra-High Altitude
Chicago ARTCC (ZAU)			
Aurora, IL	123.750 / 354.000 124.550 / 398.900		
Bradford, IL	124.550 / 398.900		
Burlington, IA	135.600 / 370.950		
Cedar Rapids, IA	132.800 / 328.400		
Chicago, IL (Midway Airport)	125.200 127.800 272.700 323.200 385.500	125.200 127.800 272.700 323.200 385.500	
Chicago Heights, IL	132.950 / 272.700		
Crown Point, IN	127.800 / 387.050		
Danville, IL	135.750 / 353.950		
Des Moines, IA	127.050 / 319.800		
Des Plaines, IL	120.350 / 317.400 128.650 / 298.900 133.200 / 360.800		
Downers Grove, IL	127.600 / 363.200 135.750 / 338.300	364.800	
Dubuque, IA	133.950 / 281.400	125.225 / 343.600 127.775 / 285.500	
Fort Wayne, IN	119.850 / 362.300	126.325 / 269.100	
Goshen, IN	127.550 / 263.100 133.900 / 317.600 135.900		
Grand Rapids, MI	128.400 / 257.600	126.125 / 319.100	
Hampshire, IL	133.350 / 381.400 134.200 / 348.700		
Horicon, WI	135.550 / 343.900	132.225 132.750 263.000 327.800	
Jones, MI		120.225 / 269.350 125.975 / 254.300	
Kankakee, IL	120.125 / 256.800 132.500 / 258.100	118.225 / 353.550	
Lafayette, IN	123.850 / 393.000		
Leroy, IL	119.225 / 307.250		
Lone Rock, WI	133.300 / 380.350		
Maple Park, IL	127.050 / 299.700		
Milford, IL	125.050 / 284.700 120.175	132.500 / 377.200 135.400 / 353.800	
Milwaukee, WI	125.100 / 323.100 123.825 / 360.600 132.300 134.750 291.700 364.800		
Moline, IL	118.750 / 351.700		135.825 / 385.650
Monee, IL			133.425 / 360.750
Muskegon, MI		132.275 / 254.350	
Oshkosh, WI	127.000 / 387.100 132.100 / 319.250		
Ottumwa, IA	118.150 / 354.100		
Pullman	128.500 / 269.600		
Rockford		120.375 / 279.650	

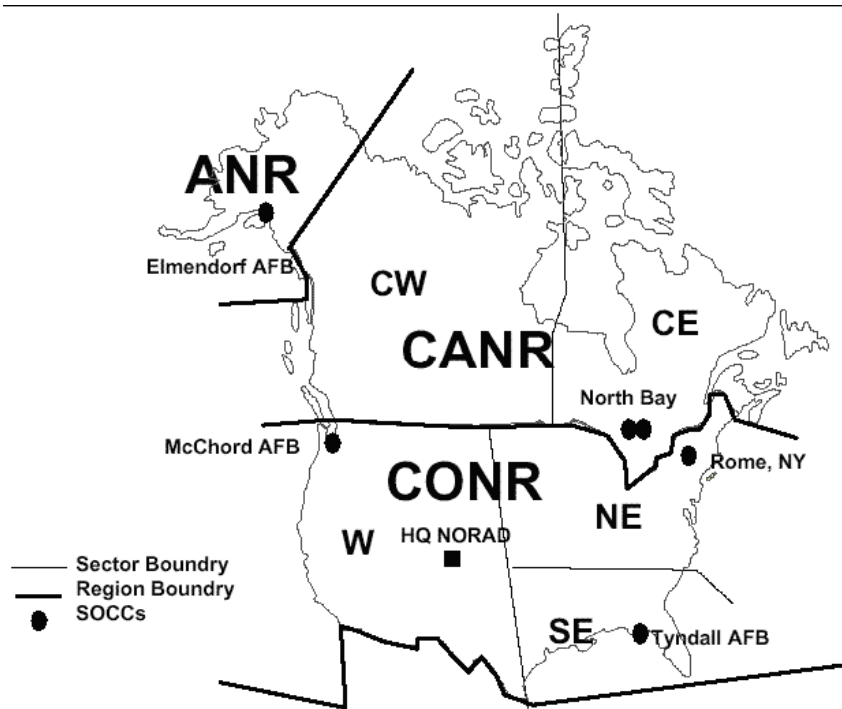
Rossville	125.375 / 370.850	120.975 / 343.950 350.350	
South Bend		135.350 / 273.600	
Volk Field	125.050 / 269.650		
Washington, IA		125.575 133.350 134.325 239.300 297.400 385.600	
Unknown		118.425 322.475 257.925	
Overload / Aux			
Indianapolis ARTCC (ZID)			
Bluefield, WV	126.575 / 257.850		
Brookville, OH	135.125 / 351.800 135.800	120.575 / 282.300 307.900	
Charleston, WV	127.400 / 269.600	119.525 / 385.600 134.225 / 307.300	
Evansville, IN	128.300 / 284.650	132.525 / 379.900	
Henryville, IN	124.775 / 269.450	133.050 / 278.500	134.275 / 352.000
Indianapolis, IN	119.550 / 251.100 124.525 / 319.800 133.425	128.375 / 290.300	132.775 / 269.050
Livingston, TN		134.675 / 323.200	126.925 / 319.150
London, OH	120.475 / 380.200 134.000 / 290.500 124.800		128.575 / 346.300
London, KY	121.325 / 246.000 126.575 / 253.500		
Lynch, KY	126.575 / 257.850		
Marietta, OH	125.550 / 398.900		
Marmet, WV	127.400 / 269.600	385.600	134.225 / 307.300
Merwyn, OH	123.925 / 281.400 135.575 / 290.500	239.250	134.700
Muncie, IN	120.650 / 299.600		
New Hope, KY	121.175 / 353.650 124.625 / 394.100		
Portsmouth, OH	124.225 / 327.050 127.100 / 290.400	120.275 / 363.200	
Rosewood, OH	128.075 / 269.000		
Rossville, IN	319.200		
Terre Haute, IN	132.200 / 307.100	134.175 / 270.300	
Tri City, TN		124.575 / 335.600	
Winchester, KY	126.375 / 343.650	128.225 / 317.750	123.775 / 263.050
Zanesville, OH	124.450 / 370.900	125.075 / 343.600 132.825 / 353.500	133.775 / 288.100
Unknown		317.425	
Minneapolis ARTCC (ZMP)			
Aberdeen, SD	120.600 / 371.900		
Alexandria, MN	126.100 / 269.200	133.400 / 281.550	
Alpena, MI	125.475 / 269.450		
Bemidji, MN	134.750 / 251.100		
Bismark, ND	125.600 / 281.500	125.600 / 281.500	
Brainerd, MN	118.050 / 239.000		
Darwin, MN	125.500 / 323.100		

Des Moines, IA	125.650 / 306.950	118.825 / 372.000 135.775 / 279.550 343.800	
Dickinson, ND	124.250 / 380.300	321.300	
Duluth, MN	127.900 / 281.450	134.550 / 290.500 321.300	
Dupree, SD	126.800 / 263.000		
Eau Claire, WI	125.300 / 335.600	133.750 / 353.900	
Escanaba, MI	127.650		
Fairmont, MN	127.750 / 257.700		
Fargo, ND		127.350 / 278.300	
Farmington, MN	133.700 / 381.650		
Fort Dodge, IA	134.000 / 288.300		
Grand Forks, ND	132.150 / 269.600	321.300	
Grand Island, NE	126.050		
Green Bay, WI	125.550 / 370.900		
Hastings, NE	119.400 / 278.800	135.100 / 307.200	
Hayward, WI	126.450 / 276.400		
Houghton, MI	127.200 / 379.100	273.500 321.300	
Huron, SD		126.250 / 339.800	
International Falls, MN	120.900 / 377.100		
Iron Mountain, MI	121.250 / 322.500	133.450	
Ironwood, MI	133.550		
Jamestown, ND	125.600 / 281.500	124.200 / 270.300	
La Crosse, WI	128.600 / 363.000	118.850 321.300	
Lincoln, NE	119.525 / 269.175		
Mankato, MN	135.000 / 306.900		
Marysville, KS	126.400 / 317.700	134.225 / 282.300	
Mason City, IA	127.300 / 380.200	134.250 / 263.100	
Minot, ND	127.600 / 279.600 118.900 / 319.100	127.600 / 279.600	
Mosinee, WI	124.400 / 317.700		
Omaha, NE	119.600 / 290.400 128.750 / 346.300	132.725 / 256.700 321.300	
O'Neill, NE	128.000 / 385.500	124.875 / 353.750	
Oscoda, MI	118.525 / 251.150		
Pellston, MI	134.600 / 354.050	132.425 / 336.400 321.300	
Pierre, SD	125.100 / 269.100	128.425 / 317.550 134.800 / 228.500	
Princeton, MN	121.050 / 397.900		
Redwood Falls, MN	127.100 / 290.200	119.875 / 269.500 133.075 / 263.050	
Rhineland, WI	133.650 / 281.500 278.500	123.725 / 316.150	
Rochester, MN	132.350 / 307.300		
Roseau, MN	134.750 / 251.100 127.800 / 256.900		
Saginaw, MI	118.050 / 282.200		
Sawyer, MN	119.100 / 290.200		
Sioux City, IA	124.100 / 269.000	119.725 / 363.100	
Sioux Falls, SD	132.050 / 317.400	321.300	
Swinns Valley, WI	134.850 / 352.000	135.700 / 307.900	
Traverse City, MI	132.900 / 338.300	317.450	

Watertown, SD	128.500 / 306.200		
White Cloud, MI	120.850 / 322.350	132.550 / 353.650	
Unknown	398.900 Camp Grayling 327.150 Volk App/Dep	133.850 / 327.100 284.600	
Kansas City ARTCC (ZKC)			
Anthony, KS	118.350 / 344.800	133.200 / 257.000	
Butler, MO	125.550 / 327.000		
Chanute, KS	132.900 / 279.500		
Chillicothe, MO	125.250 / 381.500		
Columbia, MO	118.400 / 299.200 134.500 / 350.200	119.475 / 279.600 134.500 / 350.200	
Decatur, IL	124.300 / 335.600 269.150		
Edna, KS	128.600 / 282.325	343.900	
Effingham, IL		133.225 / 346.400 135.050 / 290.400	
Emporia, KS	120.200 / 323.200 127.725 / 270.250 Tactical: 249.400	132.250 / 285.400	
Fairview, OK	Tactical: 378.100	Tactical: 260.600	
Farmington, MO	127.475 128.400 291.700	120.825 / 307.800	319.000
Gage, OK	126.950 / 379.200	Tactical: 324.100	
Garden City, KS	125.200 / 269.400	133.450 / 281.400	
Hutchinson, KS	118.800 / 337.400	134.300 / 353.900	135.900 / 269.500
Hill City		379.500	
Jacksonville, IL	127.275 / 327.500		
Kansas City, KS	352.000	132.325 / 352.000	
Kirksville, MO	132.600 / 370.900	134.625 / 269.300	
Liberal, KS	134.000 / 290.800	134.675	
Manhattan, KS	127.350 / 288.800		
Maples, KS	133.400 / 323.100		
Marion, IL	125.300 / 269.500		
Mount Vernon, IL	127.700 / 317.700		
Natoma, KS	124.400 / 322.400	307.800	
Oklahoma City, OK	128.300 / 291.700		
Ponca City, OK	127.800 / 319.100	317.600	
Quincy, IL	135.525 / 319.900		133.725 / 290.700
Richland, MO	124.100 / 353.700 133.800 / 317.500		
Saint Charles, MO	121.250 / 269.600 125.900 / 327.100 323.100		
Saint Joseph, MO	127.900 / 251.100		
Saint Louis, MO	125.500 / 380.200 128.100 / 351.900	127.225	
Salina, KS	134.900 / 363.200		
Sedalia, MO	135.575 / 323.150		
Springfield, MO	127.500 / 269.400	132.900 / 290.500	135.175 / 277.400
Topeka, KS	123.800 / 343.700 120.500 / 290.200	134.700 / 279.500	
Tulsa, OK	128.800 / 354.100	135.550 / 281.450	
Vandalia, IL		125.725 / 338.200	

Unknown	133.925 / 273.450 127.125 / 360.850 119.650 / 285.600 257.900		
Cleveland ARTCC (ZOB)			
Agonac, MI	132.250 / 269.200 278.800 360.600	126.525 / 254.575 134.775	
Altoona, PA	121.200 / 299.200 124.400 / 327.100 128.450 / 307.100	132.125 / 363.075	
Belmont, OH	120.400 / 257.975 307.075	124.425	135.175 / 291.600
Bloomington, OH	284.625	269.625	
Bradford, PA	126.725 / 291.650		
Carenton, MI	119.950 / 269.500	134.775 / 354.100	
Chardon, OH	120.775 / 298.950		
Detroit North, MI		Tactical: 369.900	120.075 / 319.900
Dubois, PA	126.725 / 291.650		
Dunkirk, NY	125.200 / 263.100		
Findlay, OH	135.100 / 291.725	126.975 / 281.475	
Flint, MI	126.750 / 348.750 127.700 / 290.425		
Holland, NY		135.775 / 306.900	120.625 / 322.500
Jackson, MI	127.300		
Litchfield, MI	120.450 / 360.700 134.650 / 285.625 281.425		
Mansfield, OH	134.900 / 317.700	133.375 / 290.275 Tactical: 369.900	
Moon Township, PA	134.475 / 254.725 385.500	Tactical: 369.250	133.075 / 276.400
Morgantown, WV	126.950 / 239.300		
Mount Hope, OH	120.600 / 298.925		
Paris, OH	128.150 / 348.700		
Saginaw, MI	127.700 / 307.800	133.875 / 351.900 Tactical: 369.900	
Sandusky, OH	127.900 / 327.000 132.450 / 371.950	119.875 / 348.675	119.325 / 261.500
Warren, PA		119.725 / 307.150 134.125 / 316.100	132.925 / 351.850
Waterford, PA	132.400 / 323.200		
Waterville, OH	128.625 / 379.200		
Wayland, NY	124.325 / 338.350 127.475 / 346.350	Tactical: 369.900	316.050

North American Air Defense Command (NORAD) and the Northeast Air Defense Sector (NEADS):



Headquarters NORAD is located at Peterson AFB, Colorado Springs, Colo. NORAD command and control is exercised through the Cheyenne Mountain Operations Center, located a short distance away. Cheyenne Mountain serves as a central collection and coordination facility for a worldwide system of sensors designed to provide NORAD with an accurate picture of any aerospace threat.

Continental U.S. (CONR) NORAD Region <http://www.1staf.tyndall.af.mil/>

With its headquarters at Tyndall AFB, near Panama City, Fla., First Air Force is one of four numbered air forces assigned to Air Combat Command. It has responsibility for ensuring the air sovereignty and air defense of the continental United States. As the CONUS geographical component of the binational North American Aerospace Defense Command, it provides airspace surveillance and control and directs all air sovereignty activities for the continental United States.

Since Sept. 11, 2001, CONR has been the lead agency for Operation Noble Eagle, an ongoing mission to protect the continental United States from further terrorist aggression from inside and outside of U.S. borders.

With the transfer of responsibility for continental air defense from the active duty component of the Air Force to the Air National Guard, First Air Force became the first numbered air force to be made up primarily of citizen airmen. A combined First Air Force command post and CONUS Region Air Operations Center perform the NORAD air sovereignty mission for the continental United States.

First Air Force plans, conducts, controls, coordinates and ensures air sovereignty and provides for the unilateral defense of the United States. It is comprised of 10 Air National Guard fighter wings and three air defense sectors for the Northeast, Western and Southeast regions of the country. The best of America's fighter inventory, the F-15 Eagle and the F-16 Fighting Falcon, are its primary weapons systems. In its role as the CONUS NORAD Region, First Air Force also performs counterdrug surveillance operations. Gen. Ralph E. Eberhart, USAF, Commander in Chief, NORAD and Commander, U.S. Northern Command, before the House Armed Service Committee, United States House of Representatives, March 13, 2003;

"NORAD defends North America from domestic air threats through Operation Noble Eagle. Across the United States and Canada, armed fighters are on alert and flying irregular combat air patrols to identify and intercept suspect aircraft. Since 11 September 2001, we have flown over 27,000 sorties to deter, prevent and defend against potential terrorist attacks, without a single mishap. This tremendous accomplishment is a tribute to the professionalism and perseverance of the men and women executing these missions."

"In addition, we are supporting homeland defense operations with a layered air defense of the National Capital Region. We have developed new relationships across the Department of Defense (DoD) and with interagency partners to establish a comprehensive shield to guard our Nation's capital."

"In our efforts to provide the best possible coverage of North America, we have teamed with the FAA and North American Air Surveillance Council to further enhance our wide-area surveillance capabilities. There has been an outstanding level of interagency cooperation to develop a comprehensive North American Air Surveillance Plan that addresses our requirements to detect, identify and classify all aircraft within North American airspace. We look forward to fielding expanded capabilities that track even smaller, low-altitude threats."

Alaska NORAD (ANR) Region

The Alaska NORAD Region maintains a 24-hour-a-day, seven-day-a-week capability to detect, validate, and warn of any aircraft and/or cruise missile threat in its area of operations that could threaten North American security. ANR also maintains the readiness to conduct a continuum of aerospace control missions. They include daily air sovereignty in peacetime, contingency and/or deterrence in times of tension, and active air defense against manned and unmanned air-breathing airborne vehicles in times of crisis.

ANR is supported by both active duty and reserve units. Active duty forces are provided by 11th Air Force and the Canadian Forces, and reserve forces are provided by the Alaska Air National Guard. Both 11AF and the CF provide active duty Region Air Operations Center personnel to maintain continuous surveillance of Alaskan airspace.

Canadian NORAD (CANR) Region

Canadian NORAD Region Headquarters at CFB Winnipeg, is responsible for providing surveillance and control of the Canadian airspace. The Canadian Forces Air Command provides alert assets to NORAD. CANR is divided into two sectors, which are designated as the Canada East Sector and the Canada West Sector. Both Sector Operations Control Centers (SOCCs) are co-located at CFB North Bay, Ontario. The routine operation of the SOCCs includes reporting track data, sensor status and aircraft alert status to NORAD headquarters.

1st Canadian Air Division is the military organization responsible for providing combat-ready air forces to meet Canada's commitments to the defense of North America and to maintain the sovereignty of Canadian airspace. Canadian air defense forces assigned to NORAD include 441 and 416 Tactical Fighter Squadrons at CFB Cold Lake, Alberta, and 425 and 433 Tactical Fighter Squadrons at CFB Bagotville, Quebec. All four squadrons fly the CF-18 Hornet fighter aircraft.

Since 1991, NORAD has assisted in the detection and monitoring of aircraft suspected of illegal drug trafficking. In cooperation with the Royal Canadian Mounted Police and U.S. drug law enforcement agencies, the Canadian NORAD Region monitors all air traffic approaching the coast of Canada. Any aircraft that has not filed a flight plan may be directed to land and be inspected by the RCMP and Customs Canada.

NEADS Ground Environment Sites: The SOCC is located at Rome NY. <http://www.neads.ang.af.mil/>

Northeast Air Defense Sector remote radar and/or radio communications sites: (all site info circa 1993)

J01 NAS Oceana VA	J54 Bucks Harbor ME	J61 Trevoise PA
R51 Barrington NS	J55 Remsen NY	J62 Detroit/Canton MI/OH
J50 The Plains VA	J56 Dansville NY	G62 Alpena (CRTC) MI
J51 Gibbsboro AFS NJ	G56 Sandborn/Lockport NY	G63 Plattsburg NY
J52 Riverhead NY	J58 Empire MI	G51 McGuire AFB NJ
J53 North Truro AFS MA	J60 Nashwauk MN	ECRS Bangor ME (in storage)

ARTCC's: Minneapolis, Chgo, KC, Memphis, Atlanta, Washington, Indy, Cleveland, Boston, New York

SEADS Ground Environment Sites: The SOCC is located at Tyndall AFB FL

J02 Fort Fisher AFS NC	J10 Cross City FL	B90 Morgan City LA (Aerostat)
J03 Jedberg SC	J11 Tyndall AFB FL	B92 Horseshoe Beach FL
J04 Whitehouse FL	J12 Citronelle AL	(Aerostat)
J05 Patrick AFB FL	J13 Slidell LA	B94 Cudjoe Key FL (Aerostat)
J06 Tamiami FL	J14 Lake Charles LA	East Coast Radar System
J07 NAS Key West FL 4	J15 Ellington AFB TX	(ECRS) Bangor ME (in storage)
J09 Ft Lonesome FL	B46 Matagorda TX (Aerostat)	

ARTCCs: Atlanta, Fort Worth, Houston, Jacksonville, Kansas City, Memphis, Miami, Washington

WADS Ground Environment Sites: The SOCC is located at McChord AFB WA.

J75 Finley ND	J33 Mill Valley AFS CA	B41 Ft Huachuca (Aerostat)
J76 Watford City ND	J32 Paso Robles CA	B42 Deming NM (Aerostat)
J77 Malmstrom AFB MT	J31 San Pedro AFS CA	B43 Marfa TX (Aerostat)
J78 Kalispell MT	J30 Mt Laguna AFS CA	B44 Eagle Pass (Aerostat)
J79 Mica Peak WA	G36 San Clemente Is CA	B45 Rio Grande TX (Aerostat)
J80 Makah AFS WA	G29 Mt Lemmon AZ	T01 Harlingen TX
J81 Salem OR	J29 Phoenix AZ	T02 Laughlin TX
J82 Keno OR	J28 Silver City NM	T03 El Paso TX
J83 Crescent City CA	J27 El Paso TX	T04 Tucson AZ
G84 McChord WA	J26 Odessa TX	T05 Yuma AZ
G85 Roy MT	G25 Laughlin AFB TX	T06 Miramar CA
G86 Lakeview OR	J25 Sonora TX	West Coast Radar System
G35 Lompoc CA	J16 Oilton TX	(WCRS) Mountain Home ID (in storage)
J34 Point Arena AFS CA	B40 Yuma AZ (Aerostat)	

ARTCCs: Denver, Minneapolis, Oakland, Salt Lk, Seattle, Albuquerque, Houston, Ft Worth, LA, KC

Alaskan ground environment: The ROCC is located at Elmendorf AFB AK. All ARTCC is Anchorage

A01 Ft Yukon AK	A11 Tin City AK	A21 Barter Island AK
A02 Murphy Dome AK	A12 Kotzebue AK	A22 Middleton Island AK
A03 Indian Mountain AK	A13 Cape Lisburne AK	A25 St Paul Island AK
A04 Galena (Storage) AK	A14 Kenai AK	A26 Biorka Island AK
A05 Tatalina AK	A15 Point Lay (Storage) AK	A27 Crows Nest AK
A06 Sparrevohn AK	A16 Wainwright AK	A28 Donnely Dome AK
A07 King Salmon AK	A17 Point Barrow AK	S39 Cumshewa BC
A08 Cold Bay AK	A18 Point Lonely AK	A24 Elmendorf AK
A09 Cape Newenham AK	A19 Oliktok AK	NA0 Shingle Point YT
A10 Cape Romanzof AK	A20 Bullen Point AK	

Canadian Ground Environment:

The Canadian NORAD Region (CANR) Headquarters encompasses one wing (22 Wing) and two sectors Canada East (CE) and Canada West (CW)). Both sectors are operated by the 21 Aerospace Control and Warning Squadron (21 AC&W Sqn). The Headquarters CANR, and 22 Wing, are at North Bay, Ontario, Canada. The Canada East SOCC is located at North Bay, Ontario, Canada.

J54 Bucks Harbor ME	NG2 Nadluardjuk NWT	NK3 Cape Kiglapait NFLD
R51 CFS Barrington NS	NG3 Kangok Fiord NWT	NL0 Cartwright NFLD
R52 CFS Sydney NS	NH0 Cape Dyer NWT	NL1 Big Bay NFLD
R54 CFS Gander NFLD	NH1 Cape Hooper NWT	NL2 Tukialik Bay NFLD
NF0 Hall Beach NWT	NH2 Broughton Island NWT	D01 Greenwood NS
NF1 Cape McLoughlin NWT	NJ0 Brevoort Island NWT	S01 Goose Bay NFLD
NF2 Lailor River NWT	NJ1 Cape Mercy NWT	S04 Stevensville NFLD
NF3 Rowley Island NWT	NJ2 Loks Land NWT	S06 Halifax NS
NF4 Bray Island NWT	NK0 Saglek NFLD	S08 Moncton NB
NG0 Dewar Lakes NWT	NK1 Resolution Island NFLD	M50 3 ere, Bagotville P.Q.
NG1 Longstaff Bluff NWT	NK2 Cape Kakiavik NFLD	ECRS Bangor ME (in storage)

The Canada West SOCC is also located at North Bay, Ontario, Canada.

J80 Makah AFS WA	NA3 Tuktoyaktuk NWT	ND1 Cape Peel West NWT
R02 CFS Holberg BC	NA4 Storm Hills NWT	ND2 Sturt Point North NWT
D10 Comox BC	NA5 Liverpool Bay NWT	ND3 Jenny Lind Island NWT
S34 Prince George BC	NB0 Cape Perry NWT	ND4 Hat Island NWT
S35 Kamloops BC	NB1 Nicholson Peninsula NWT	NE0 Sheperds Bay NWT
S36 Vancouver BC	NB2 Horton River NWT	NE1 Gladman Point NWT
S37 Victoria BC	NB3 Keats Point NWT	NE2 Gjoa Haven NWT
S39 Sandspit BC	NB4 Croker River NWT	NE3 Simpson Lake NWT
M01 4 Wg Cold Lake AT	NC0 Lady Franklin Point NWT	NE4 Pelly Bay NWT
A21 Barter Island AK	NC1 Harding River NWT	NF0 Hall Beach NWT
NA0 Shingle Point YT	NC2 Benard Harbour NWT	WCRS Mountain Home ID (in storage)
NA1 Komakuk Beach YT	NC3 Edinburgh Island NWT	
NA2 Stokes Point YT	ND0 Cambridge Bay NWT	

Frequency Listing Abbreviations:

AICC Airborn Intercept Command and Control	FACSFAC Fleet Area Control and Surveillance
ARTCC Air Route Traffic Control Center	NEADS Northeast Air Defense Sector
AWACS Airborn Warning And Control System	SEADS Southeast Air Defense Sector
CANR Canadian Region Air Defense Sector	W105 East coast warning area number 105
CONUS Continental United States	WADS Western Air Defense Sector

Frequencies which have been reported in all three U.S. sectors are listed simply as “Nationwide” to conserve space. Most “Nationwide” frequencies have probably now been assigned a “BLUE-##” channel designator, and hobbyists have captured a handful of these. This information is from both pre- and post-9/11, after which a large expansion of communications sites, capabilities and frequencies took place. NORAD has about 200 frequencies with color/number channel designators assigned. None of the information in this report is known to be “classified”, though NORAD has not released site or frequency information to the public since 1995. Interceptor aircraft on combat air patrol missions will often attempt to communicate with ARTCC’s on 243.000 (UHF Emergency Guard) and/or with civil aircraft on 121.500 (VHF Emergency Guard).

NORAD reported operations frequencies:

148.125 Nationwide
225.000 Washington DC combat air patrols
225.600 NEADS
225.725 WADS
225.800 SEADS / WADS
227.100 NEADS 21st Region callsign HUNTRESS
228.400 NEADS
228.600 Nationwide
228.700 Nationwide
228.800 Nationwide
228.900 Nationwide
229.100 NEADS 23rd Region callsign GOLIATH
233.500 NEADS 21st Region callsign HUNTRESS
233.600 NEADS 21st Region callsign HUNTRESS / 23rd Region callsign GOLIATH
233.700 FACSAC Coordination Norfolk Virginia Capes callsign GIANT KILLER
234.500 WADS
234.600 Nationwide BLUE-10
234.700 NEADS HUNTRESS / CANR 24th Region RINGMASTER / SEADS 20th Region OAK GROVE
234.800 SEADS 20th Region callsign OAK GROVE
234.900 WADS
235.600 NEADS 21st Region callsign HUNTRESS
235.800 NEADS 21st Region callsign HUNTRESS / CANR-CW 25th Region / WADS prior use
235.900 Nationwide
236.600 ANR Alaskan Region
236.800 NEADS 21st Region callsign HUNTRESS
237.800 NEADS 21st Region callsign HUNTRESS
238.200 CANR-CW 25th Region
238.400 WADS 26th Region SIERRA PETE channel 11 / CANR 24th Region RINGMASTER / SEADS
238.500 Nationwide
238.600 Nationwide
238.700 Nationwide
238.900 WADS 26th Region callsign SIERRA PETE
239.100 NEADS 23rd Region callsign GOLIATH / CANR-CW 25th Region
239.200 NEADS 21st Region callsign HUNTRESS / SEADS 20th Region callsign OAK GROVE
239.400 NEADS 23rd Region callsign GOLIATH / 21st Region callsign HUNTRESS
239.700 NEADS 23rd Region callsign GOLIATH / CANR-CW 25th Region / WADS
240.000 CANR-CW 25th Region
240.200 NEADS
243.500 NEADS
244.700 NEADS 21st Region callsign HUNTRESS
249.800 WADS / FACSAC Coordination Norfolk Virginia Capes callsign GIANT KILLER
250.800 NEADS
251.000 Nationwide
251.250 NEADS
251.600 FACSAC Coordination Norfolk Virginia Capes callsign GIANT KILLER
251.800 NEADS 23rd Region callsign GOLIATH / NEADS 21st Region callsign HUNTRESS / SEADS
252.000 Nationwide BLUE-11 / WHITE-1
252.200 WADS 26th Region callsign SIERRA PETE
252.900 NEADS / WADS
254.000 NEADS 21st Region callsign HUNTRESS
254.200 WADS 26th Region SIERRA PETE channel 05 / CANR 24th Region RINGMASTER / SEADS
254.400 NEADS 23rd Region callsign GOLIATH
254.475 AWAC net callsigns DARKSTAR & DRAGNET
254.500 NEADS

254.700 SEADS
254.800 NEADS 21st Region callsign HUNTRESS Tactical channel
255.000 FACSFAC Coordination Norfolk Virginia Capes callsign GIANT KILLER
255.800 Nationwide
256.500 WADS
256.600 Nationwide
257.500 NEADS AWACS net callsign DRAGNET
258.000 NEADS 21st Region callsign HUNTRESS / NEADS 23rd Region callsign GOLIATH
258.800 NEADS 23rd Region callsign GOLIATH
259.400 NEADS callsigns HUNTRESS SLEEKNESS FOOTROPE
259.600 NEADS
260.200 WADS Seattle ARTCC refuel secondary
260.800 Nationwide
260.900 WADS 26th Region SIERRA PETE / CANR-CW 25th Region / NEADS 23rd Region GOLIATH
261.200 NEADS / WADS AWACS nets
261.400 Nationwide
261.600 NEADS
261.700 NEADS
261.800 NEADS
262.200 NEADS 23rd Region callsign GOLIATH
262.325 NEADS
262.400 Nationwide
262.800 NEADS
263.200 Nationwide
263.400 SEADS 20th region callsign OAK GROVE
263.600 CANR-CE 22nd Region
264.200 NEADS
264.600 NEADS secondary / SEADS
264.800 NEADS
264.900 SEADS
265.400 Nationwide BLUE-14
266.700 NEADS
266.900 FACSFAC Coordination San Diego California callsign BEAVER
267.000 WADS 26th Region SIERRA PETE channel 20 / CANR 24th Region callsign RINGMASTER
267.500 FACSFAC Coordination Jacksonville Florida callsign SEALORD
269.900 NEADS / CANR 24th Region callsign RINGMASTER
270.100 NEADS 21st Region callsigns HUNTRESS FOOTROPE
270.200 Nationwide
270.400 Nationwide
271.000 Nationwide BLUE-15
271.800 NEADS 21st Region callsign HUNTRESS
272.600 FACSFAC Coordination San Diego California callsign BEAVER
273.000 WADS 26th Region callsign SIERRA PETE
273.400 Nationwide
274.200 FACSFAC Coordination Pensacola Florida callsign SEABREEZE
274.400 Nationwide
275.000 Nationwide
275.600 FACSFAC Coordination Pensacola Florida callsign SEABREEZE
275.800 WADS callsign BIGFOOT air to air
275.900 Nationwide
276.000 NEADS 23rd Region callsign GOLIATH
276.100 NEADS / SEADS
276.400 Nationwide
276.650 Nationwide
277.600 Nationwide
278.000 NEADS

278.200 NEADS 23rd Region callsign GOLIATH
278.400 Nationwide
278.600 NEADS 21st Region callsign HUNTRESS / SEADS 20th region callsign OAK GROVE
278.700 WADS 26th Region callsign SIERRA PETE
278.800 NEADS 21st Region callsign HUNTRESS / SEADS 20th region callsign OAK GROVE
279.400 Nationwide
280.000 WADS 26th Region callsign SIERRA PETE
280.100 WADS 26th Region callsign SIERRA PETE
280.700 FACSAC Coordination Pensacola Florida callsign SEABREEZE
281.200 SEADS
281.500 NEADS / SEADS
281.600 Nationwide
282.400 SEADS
282.425 w/US Customs E2C Haweye patrol coordination
282.500 NEADS 21st Region callsign HUNTRESS
282.600 Nationwide BLUE-17 Combat Air Patrols
282.800 NEADS 21st Region callsign HUNTRESS
283.800 NEADS 21st Region callsign HUNTRESS / SEADS
284.000 NEADS
284.000 NEADS 23rd Region callsign GOLIATH
284.500 FACSAC Coordination Jacksonville Florida callsign SEALORD
284.600 NEADS
284.800 NEADS 23rd Region callsign GOLIATH / SEADS AWACS Net
285.700 FACSAC Coordination San Diego California callsign BEAVER
285.900 Nationwide
286.700 NEADS 21st Region callsign HUNTRESS
287.500 WADS 26th Region callsign SIERRA PETE / NEADS
287.700 Nationwide
287.800 NEADS 21st Region HUNTRESS / SEADS / CANR 24th Region callsign RINGMASTER
288.000 NEADS 21st Region callsign HUNTRESS
288.200 Nationwide AWACS Net
288.400 Nationwide BLUE-19 AWACS & Combat Air Patrols
288.700 SEADS
288.800 SEADS
288.900 SEADS / WADS
289.000 NEADS 23rd Region GOLIATH / NEADS 21st Region HUNTRESS / SEADS OAK GROVE
289.900 FACSAC Coordination San Diego California callsign BEAVER
290.900 Nationwide AWACS operations callsigns DARKSTAR & DRAGNET also refuelling
291.900 NEADS Chicago Combat Air Patrols refuelling coordination via HUNTRESS post 9/11
292.400 NEADS 23rd Region callsign GOLIATH
292.500 NEADS W105 callsigns SLEEKNESS HUNTRESS
292.700 Nationwide
292.800 Nationwide
292.900 CANR 24th Region callsign RINGMASTER
293.200 NEADS
293.600 Nationwide
293.800 Nationwide
295.800 Nationwide BLUE-20 mostly refuelling
296.650 NEADS exercise channel
297.600 NEADS
297.700 NEADS 23rd Region callsign GOLIATH exercise channel and air to air tactical
297.800 NEADS
298.100 Nationwide
298.300 Nationwide
298.500 Nationwide
298.600 NEADS 21st Region callsign HUNTRESS

298.800 NEADS 21st Region callsign HUNTRESS air to air tactical channel
299.000 WADS 26th Region callsign SIERRA PETE
299.200 NEADS exercise channel
299.500 SEADS coordination w/FACSFAC
300.125 Nationwide BLUE-40
301.600 NEADS callsign FOOTROPE primary
302.400 Nationwide
303.000 Nationwide air to air tactical channel
303.100 Nationwide AWACS net secure comms channel
303.400 FACSFAC Coordination Pensacola Florida callsign SEABREEZE
303.900 NEADS 21st Region callsign HUNTRESS
305.000 FACSFAC Coordination Norfolk Virginia Capes callsign GIANT KILLER
305.400 Florida area Combat Air Patrols
305.500 NEADS coordination w/facsfac for training ops & Chicago Combat Air Patrol refuelling post 9/11
305.800 AWACS air to air tactical callsign DARKSTAR
306.400 Nationwide
306.800 FACSFAC Coordination Pensacola Florida callsign SEABREEZE
307.250 NEADS / SEADS Combat Air Patrols
308.100 NEADS
308.800 NEADS
309.400 Nationwide
309.500 NEADS 23rd Region callsign GOLIATH
310.100 FACSFAC Coordination Norfolk Virginia Capes callsign GIANT KILLER
311.200 NEADS
312.300 Nationwide training operations
312.800 NEADS 23rd Region callsign GOLIATH / NEADS 21st Region callsign HUNTRESS / SEADS
313.200 FACSFAC Coordination Pensacola Florida callsign SEABREEZE
313.600 Nationwide AWACS & Combat Air Patrols
313.700 FACSFAC Coordination Jacksonville Florida callsign SEALORD
314.200 NEADS callsign FOOTROPE
314.400 NEADS
314.700 FACSFAC Coordination San Diego California callsign BEAVER
315.400 NEADS
316.200 NEADS 21st Region callsign HUNTRESS
316.300 Nationwide
316.400 NEADS 21st Region callsign HUNTRESS
318.100 NEADS
318.400 NEADS 23rd Region callsign GOLIATH / NEADS 21st Region callsign HUNTRESS / SEADS
319.400 NEADS air to air
320.600 Nationwide BLUE-24
320.900 Nationwide BLUE-55 mostly refuelling
321.300 Nationwide BLUE-60 / AMBER-6
324.000 Nationwide BLUE-25
324.650 WADS
325.000 NEADS
325.500 Nationwide
325.800 NEADS
325.900 NEADS
325.950 NEADS
326.400 NEADS
326.400 NEADS 21st Region callsign HUNTRESS
326.700 AWACS net callsign DARSTAR
327.200 NEADS 23rd Region callsign GOLIATH
327.700 CANR 24th Region callsign RINGMASTER
327.900 Nationwide
328.000 NEADS 23rd Region GOLIATH / WADS 26th Region SIERRA PETE / CANR-CW 25th Region

328.100 NEADS / SEADS coordination w/FACSFAC
329.000 SEADS
335.950 Nationwide Combat Air Patrols
336.600 Nationwide
336.925 AWACS net air tactical callsign DARKSTAR
337.800 FACSFAC Coordination Whidbey Island Washington callsign DOWN RIGGER
338.100 NEADS 21st Region HUNTRESS & FACSFAC coordination Norfolk Virginia GIANT KILLER
338.300 NEADS 21st Region callsign HUNTRESS
338.400 Nationwide
338.750 SEADS Florida Combat Air Patrols
338.800 NEADS 21st Region callsign HUNTRESS
338.900 NEADS
339.300 NEADS / SEADS
339.400 SEADS 20th region callsign OAK GROVE
341.100 NEADS 21st Region callsign HUNTRESS
341.750 AWACS nets time of day synch pulse for have quick
341.800 Nationwide
342.100 NEADS 21st Region callsign HUNTRESS
342.600 NEADS / SEADS
343.500 WADS
344.000 Nationwide
344.100 FACSFAC Coordination San Diego California callsign BEAVER
344.400 SEADS
346.200 WADS 26th Region callsign SIERRA PETE channel 08 / SEADS
346.500 FACSFAC Coordination Pensacola Florida callsign SEABREEZE
346.900 Nationwide
347.400 NEADS 21st Region callsign HUNTRESS
348.200 Nationwide
348.800 NEADS 23rd Region callsign GOLIATH
351.000 NEADS refuelling secondary channel
351.500 Nationwide
351.600 NEADS 21st Region callsign HUNTRESS
351.800 NEADS 21st Region callsign HUNTRESS
353.200 FACSFAC Coordination Pensacola Florida callsign SEABREEZE
355.200 Nationwide Combat Air Patrols and exercises
355.900 NEADS AWACS exercise net
356.000 Nationwide
357.100 NEADS
357.200 NEADS 21st Region callsign HUNTRESS / 23rd Region callsign GOLIATH
358.400 WADS 26th Region callsign SIERRA PETE
358.800 WADS 26th Region callsign SIERRA PETE
359.400 WADS 26th Region callsign SIERRA PETE
359.800 Nationwide
360.000 NEADS
360.200 FACSFAC Coordination Whidbey Island Washington callsign DOWN RIGGER
361.200 NEADS exercise net
361.600 NEADS / SEADS
361.800 SEADS
362.300 NATIONWIDE BLUE-21 COMBAT AIR PATROLS
362.800 FACSFAC Coordination Pensacola Florida callsign SEABREEZE
363.800 NEADS 21st Region callsign HUNTRESS
364.200 NATIONWIDE BLUE-7 AICC PRI / WADS SIERRA PETE CHANNEL 21
364.800 NATIONWIDE BLUE-31 COMBAT AIR PATROLS
364.900 SEADS
369.000 Nationwide
369.100 SEADS Tyndall AFB operations

369.900 NEADS Combat Air Patrols / FACSFAC Coordination Jacksonville Florida callsign SEALORD
370.100 NEADS Combat Air Patrols
370.900 NEADS Combat Air Patrols
371.000 NEADS 23rd Region callsign GOLIATH
371.800 NEADS 21st Region callsign HUNTRESS
374.000 Nationwide
374.200 CANR-CW 25th Region
375.100 Nationwide
376.200 NEADS 21st Region callsign HUNTRESS tactical net
377.000 Nationwide
377.100 CANR 24th Region callsign RINGMASTER
379.000 NEADS 23rd Region callsign GOLIATH
382.000 NEADS 21st Region HUNTRESS / FACSFAC Coordination Pensacola Florida SEABREEZE
382.400 WADS
383.000 NEADS
383.800 FACSFAC Coordination Pensacola Florida callsign SEABREEZE
384.000 NEADS 23rd Region callsign GOLIATH
385.200 FACSFAC Coordination Pensacola Florida callsign SEABREEZE
386.000 Nationwide
386.200 Nationwide
387.000 Nationwide BLUE-33 Combat Air Patrols
387.800 Nationwide
388.200 NEADS 21st Region callsign HUNTRESS
388.400 NEADS AWACS net callsign DARKSTAR
388.950 NEADS AWACS net secure comms and air intel net
389.200 NEADS 21st Region callsign HUNTRESS tactical net
390.100 NEADS 21st Region callsign HUNTRESS
390.200 Nationwide
390.450 SEADS
392.800 Nationwide
394.000 Nationwide
394.400 NEADS 23rd Region callsign GOLIATH / CANR-CW 25th Region
394.800 NEADS 21st Region callsign HUNTRESS
396.800 NEADS 23rd Region callsign GOLIATH
397.250 Nationwide
397.800 Nationwide
397.900 WADS 26th Region callsign SIERRA PETE
398.000 Nationwide
398.100 NEADS W105 exercise net
398.800 WADS SIERRA PETE channel 10
399.000 NEADS 21st Region callsign HUNTRESS

Listening in Chicago after September 11th, 2001:

Within a few hours of the terrorist attacks Chicago's airspace fell eerily silent. A couple of days later the 128th ACS from Volk Field deployed a secured radar site in a northwest suburban park. MARSAs (Military Assumes Responsibility for Aircraft Separation) was declared and about two months of nearly continuous combat air patrols followed. Chicago area residents owe a debt of gratitude to the tenacious Air Force and Air National Guard personnel who provided for our defense. Sporadic CAP's continue today. Here is log of some of what was heard in the months following 9/11:

138.050	IN ANG Air to Air VICTOR 17	273.600	Chgo ARTCC MARSAs App/Dep
138.150	MN ANG Air Tac	282.425	US Customs E2C operations
138.200	IN ANG Air to Air VICTOR 12	282.600	HUNTRESS / AWACS / Refuel
138.200	IL ANG Sfld CP SUNSPOT	228.900	Current NORAD Primary
138.250	WI ANG Madison CP & Air to Air	287.900	Assigned as a Tac freq, not heard
138.300	IN ANG Air to Air VICTOR 13	289.300	IN ANG
138.350	WI ANG ANG Air to Air Tac V-15	291.900	Refuel
138.400	IN ANG Air to Air VICTOR 1	295.800	Refuel
138.425	MN ANG Air to Air	303.000	USAF Air to Air
138.450	IN ANG Air to Air Tac	303.100	AWACS Secure Com network
138.475	IL ANG Air to Air	305.500	Refuel
138.625	USAF ANG Air to Air	311.000	Tankers common channel
138.700	USAF ANG Air to Air	311.200	UHF1 Air to Air
138.900	IL ANG Air to Air	313.600	HUNTRESS / AWACS
139.575	USAF ANG Air to Air	317.400	ORD TRACON
139.675	USAF ANG Air to Air	317.700	MN ARTCC
139.725	MN ANG Air to Air PIKE Flights	319.400	Chit Chat
139.750	IN ANG Air to Air	320.600	HUNTRESS
139.800	IL ANG Air to Air	321.000	WI ANG Milwaukee CP
139.875	USAF ANG Air to Air	325.950	Unidentified operations
139.875	IL ANG Targeting Pod data	328.000	HUNTRESS
139.875	MN ANG Air to Air	335.950	HUNTRESS / Misc
139.900	MN ANG Air to Air	343.400	MN ANG UNIFORM15 Air to Air
139.975	USAF ANG Air to Air	343.500	Refuel
141.575	IL ANG Air to Air	343.700	Chgo ARTCC
142.125	IN ANG Air to Air	344.600	USAF WX Networks
142.200	MI ANG Air to Air	350.350	HILLTOP MOA
143.925	MI ANG	351.000	Airforce One
148.525	MI ANG	351.950	Chgo ARTCC RACER
228.900	HUNTRESS / AWACS	353.550	Chgo ARTCC
235.900	MAGIC/NORTHERN LIGHTS	355.200	HUNTRESS / AWACS
238.500	USAF Air to Air	360.700	Chgo ARTCC, alternate to 256.8
243.000	Emergency Guard / Coord	364.200	AICC Primary / AWACS
252.000	MI ANG Refuel	364.800	Chgo ARTCC CAP Pri BLUE CRAB
252.100	IN ANG Grissom BRICKYARD	369.900	Othe CAP possibly Cleveland
252.900	HUNTRESS	370.900	Unidentified operations
254.300	Chgo ARTCC	372.200	USAF PTD
255.400	USAF FSS	380.250	MN ARTCC
256.800	Chgo ARTCC	381.700	PISTON Refuel
263.000	Chgo ARTCC	383.200	McConnell CP
269.000	MN ARTCC	388.950	AWACS Secure Com Net
272.175	IL ANG Sfld CP SUNSPOT	392.200	WI ANG Madison CP

“Have Quick” Frequency Hopping Secure Mode:

Most ANG units now commonly employ Have Quick mode communications on routine training for both air to air and air to ground communications. Radios in this mode quickly “hop” at near random from one pre-loaded frequency to another during the course of each transmission. Have Quick radios can be synchronized in the field through the use of a “Time of Day” beacon pulse transmitter (341.750, 343.750). While “hop” rates can approach 100 frequencies per second they don’t always run this fast, and some degree of intelligibility of the signals can be gained through the use of multiple squelch-open radios. Several sets of pre-loadable channels are known to be in use for United States training missions. These sets are not used in real-world strike missions overseas. One frequency in a group may exhibit a tone prior to hops starting. This is the “net activation” channel. These frequencies can also be used in conventional mode for air to air tactical communications. Some channel plans include: (confirmed frequencies in bold type)

NATO Plan 1:	NATO FMT1	NATO FMT2:	USA (00-16)	From Photo:
263.325	231.350	232.150	00-300.025	237.900
278.425	240.400	245.725	01-300.125	257.800
300.050	246.950	252.925	02-300.225	264.500
310.075	254.450	264.550	03-300.325	272.600
338.025	283.850	276.425	04-300.425	273.575
339.425	291.250	283.875	05-300.525	287.400
385.525	306.500	292.425	06-300.625	288.150
	310.900	300.725	07-300.725	292.500
Old IL ANG:	316.550	308.550	08-300.825	295.700
220.025	328.400	312.925	09-300.925	297.600
238.700	338.950	337.025	10-301.025	314.300
287.400	359.350	344.925	11-301.125	349.725
297.600	372.450	357.325	12-301.225	359.100
300.050	380.650	374.425	13-301.325	359.100
303.000	385.150	381.225	14-301.425	360.600
314.300	399.450	385.225	15-301.525	363.150
359.100			16-301.625	376.000
376.000	Wash DC:	NATO FMT3		377.100
	225.150	232.400	AL ANG:	379.900
USA Set 1:	235.050	248.275	280.100	
220.000	252.925	251.775	284.100	USA Reported:
220.025	257.250	265.875	287.400	262.925
239.950	267.850	267.775	297.600	264.400
262.450	279.750	284.950	314.300	287.350
271.950	289.050	292.200	339.100	287.450
284.150	293.550	298.575	359.100	291.950
303.275	298.650	315.875	376.000	297.575
	300.125	336.025		314.275
USA Set 2:	300.325	342.575	CO ANG:	359.075
375.725	301.025	359.925	282.600	375.975
375.825	301.125	363.275	286.400	376.225
375.925	314.450	371.625	296.700	
376.025		379.225	319.300	
376.125		379.625	359.100	
		NATO Other:	Other Heard:	
		263.575	252.900	
		264.500	308.750	
		366.825	314.600	

Northstar C3 Wideband Multiplexed System:

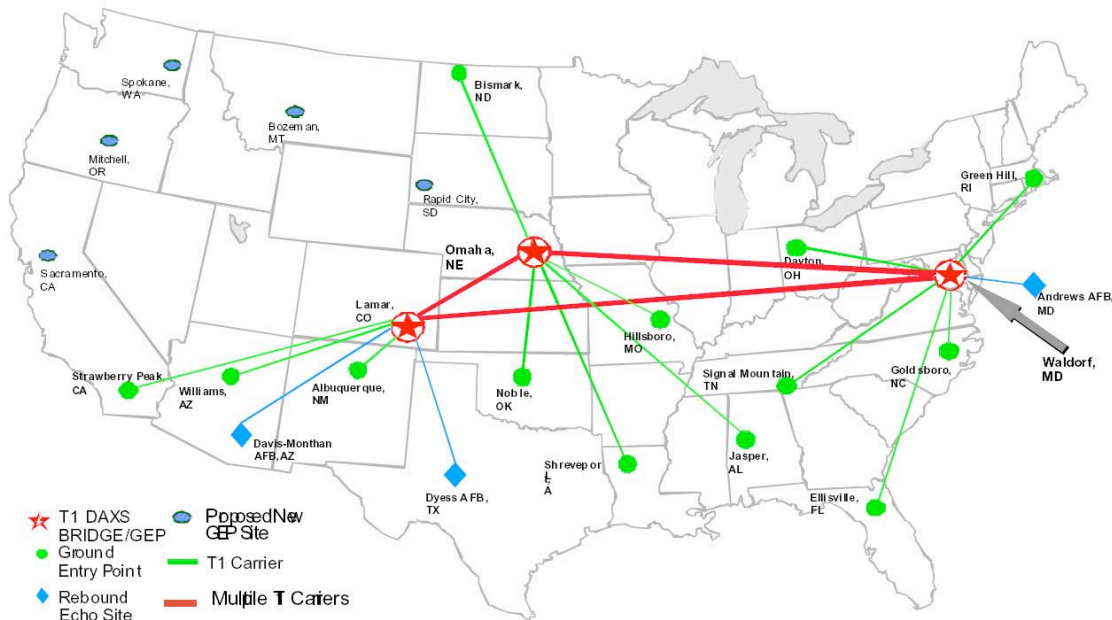
The system onboard the E-6B TACAMO, Air Force 1, The E4B NAOC and other aircraft that provides connectivity into the Northstar network via Ground Entry Points (GEP) is the UHF frequency division multiplexed (FDM) command, control, and communications (C3) system. Both commercial and military networks can be accessed. The onboard components consist of three UHF AN/ARC-171-1H transceivers, five UHF antennas, three MD-1172 modems, three multiplexers, and associated hardware. Currently, the equipment provides three of any combination of the following four services:

- UHF FDM (up to three full-duplex groups of up to 15 channels each)
- Airborne Launch Control System (ALCS) data links
- Conventional UHF AM line-of-sight (LOS) (up to three half-duplex channels)
- UHF SATCOM phase shift keying (PSK) receive-only channel (TACAMO broadcast)

A UHF LOS air-to-ground configuration is used in conjunction with the ALCS for communications to intercontinental ballistic missiles. In peacetime, the ALCS is used only during exercises in certain geographic regions within LOS of missile silos. The 75 baud UHF SATCOM data (TACAMO broadcast) is simultaneously broadcast on HF and can be received via that medium. Therefore, much of the time, the third ARC-171 is available for other missions or functions. Nominally, at 25,000 feet, connectivity is provided at an aircraft distance of up to 180 nmi from a GEP. GEP stations are usually located at elevated sites for maximum unobstructed view. Towers are used to elevate antennas in flat areas. Separate transmit and receive omnidirectional antennas are used. All sites are terrestrially connected via AT&T T-1 lines.

The current Air-to-GEP interface is a full duplex UHF FDM link that provides up to 1000 Watts of power and 12 full duplex voice channels per FDM group. GEP sites have at least two radios and two compatible multiplexers. The channels are frequency multiplexed into a 60 kHz baseband group consisting of twelve 3 kHz full duplex voice channels and three orderwire channels plus guard bands and then frequency modulated for transmission on a UHF channel.

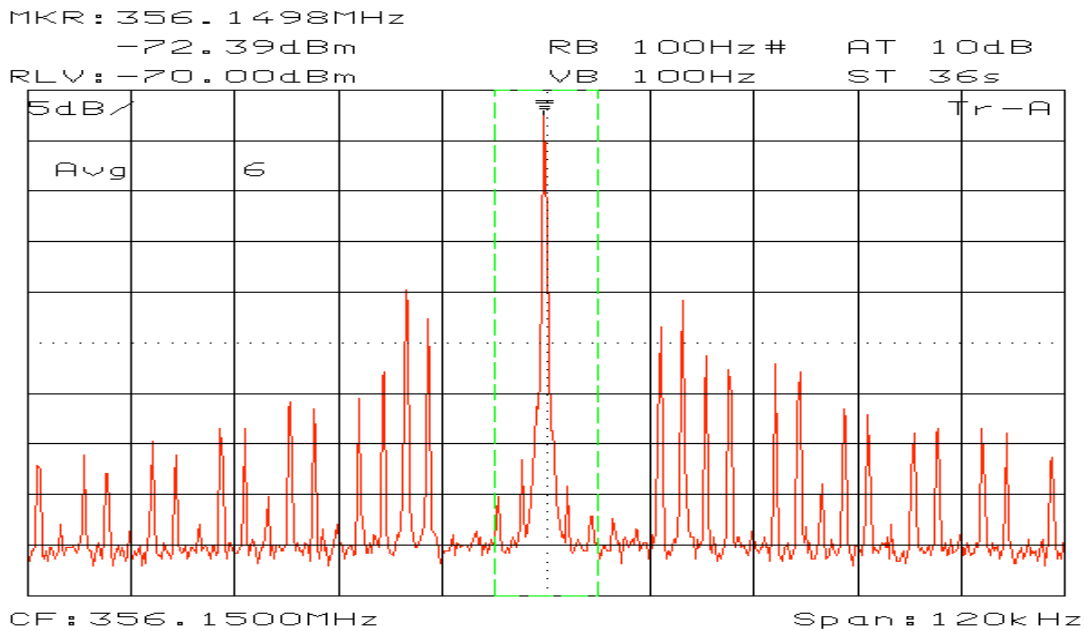
Principal sites at Waldorf, MD, Omaha, NE and Lamar, CO are connected via multiple T-1 lines. The primary ground control site for the entire network is the Special Government Operations Center (SGOC) at Waldorf, MD. The secondary ground control site is at Offutt AFB, NE and the E4B NAOC can perform as an airborne network controller.



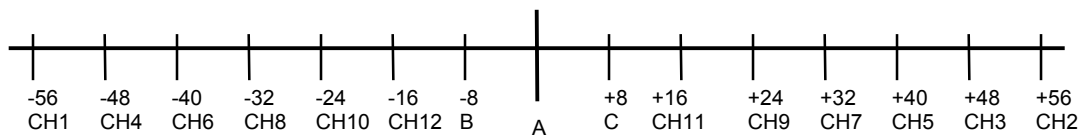
As the system is full-duplex, only one side of the communications will be heard on either of the two paired Air / GEP frequencies. A hobbyist would have to be physically near a GEP site in order to hear it, though the signal from the aircraft can be easily heard for hundreds of miles. Monitoring in NBFM mode will enable reception of the center “orderwire” channel, which is used for operator coordination of communications. Listening in WBFM mode will enable reception of the entire signal bandwidth, including the multiplexed “sub-carriers”. Carefully tuning across the entire signal in single-sideband mode may reveal some of the “sub-carrier” communications, though a better method is to attempt to “de-multiplex” the signal while receiving it in WBFM mode.

One method for doing this involves tapping the WBFM discriminator level audio from the primary receiver and connecting that to another radio’s antenna jack, one which is capable of tuning 8 to 56 KHz in single-sideband mode. Another method involves using an outboard de-multiplexer.

Here is an image of a downlink being received on a spectrum analyzer:



The sub-carriers are designated as follows:



The A channel will carry NBFM orderwire traffic. Channels B & C are “Orderwire B/C” to the TACAMO’s, “Low MUX B/C” to the NAOC’s. Channels to the right of “A” are in USB mode, to the left of “A” in LSB mode. A 2600hz tone will be heard on the sub-carrier until a circuit is connected. Different system users typically employ their own specific subset of sub-carrier channels:

- Air Force 1 1A Channels 1-8
- Air Force 1 1C Channels 1-7
- E4B - NAOC 5A All channels, data on B/C
- Backup NAOC 5B
- TACAMO / EC-135 7A Channels 1-12 & C & data on B
- Mid-Conus TACAMO 7C Channels 2-12 & B/C, data on Channel 1, EAM’s on Channel 7

The system provides a direct connect capability to and from the Whitehouse switchboard, STRATCOM and other command facilities. A variety of types of communications can be relayed, including digital and analog voice, slow speed data, FAX and STUIII telephonic secure communications.

Note that while the E6B Navy TACAMO aircraft has assumed the primary airborne national command post role, the USAF still flies EC-135's in a support "Looking Glass" role about 4 days each month. E6B's and the E4B National Airborne Operations Center are based at Tinker AFB, but operate from remote alert bases nationwide. EC-135's operating as the ABNCP stage from their home at Offutt AFB.

Individual Air to Ground link circuit frequency pairs are assigned "RF-###" channel numbers. The system has seen considerable evolution frequency-wise since it's original five pair format at it's birth during the cold war. "RF-18" seems to have recently become dedicated to service as a primary data link circuit. The list below represents system activity reports over the last ten years:

Aero	GEP	RF##	User / Notes	Aero	GEP	RF##	User / Notes
Unkn	225.600			357.000	276.900		
Unkn	272.650			357.700	232.750		
225.500				358.300	232.450	RF-07	NAOC
230.650	305.550			359.000			
241.150	356.165		NAOC	359.500	325.400	RF-04	NAOC
246.000				359.750	325.950		
266.050	385.100			359.950	284.200		
267.050				361.100	280.100		
273.750				362.150	338.950	RF-03	NAOC
284.200				364.500	339.400		
286.350	396.250	RF-10	AF1 365.000 Up?	365.000	326.000		TACAMO
288.550				365.000	344.250	RF-06	AF1
291.500				366.000	322.750		
300.400	230.900	RF-02	NAOC/AF1	366.600	345.600	RF-05	NAOC
305.550				366.750	345.400		
308.050				368.250	340.550	RF-19	TACAMO
312.500			Air-Air relay?	370.100	347.300	RF-18	TACAMO/ABNCP
322.050	390.050	RF-11		370.400	347.050		
323.800			High Alert Status	372.850	341.000		TACAMO
EAM's				374.550	337.300	RF-17?	TACAMO
335.900				374.850			
336.800				374.900	337.400	RF-17?	TACAMO
337.550				376.750	241.250		
345.500	246.950			379.500			
345.500	305.550	RF-27	NAOC	382.350	326.000	RF-26	NAOC
352.750				387.500	341.175		
355.000	267.600			390.050		RF-11	NAOC Air-Air
355.400	291.950			390.550	315.500	RF-16	New in 2004
356.150	341.150	RF-01	NAOC	397.050	336.800		
356.250				398.500	369.500		
356.350	265.900			399.200	304.700		
357.000	252.250		TACAMO				

Joint Services Brevity Codes:

ABORT(ING)(ED)	Directive/informative to cease action/attack/event/mission.
ACTION	Directive to initiate a briefed attack sequence or maneuver.
ACTIVE	An emitter is radiating.
ADD()	Directive call to add a specific system to search responsibility.
ALARM	Directive/informative indicating the termination of EMCON procedures.
ALLIGATOR	Link-11/ TADIL A.
ALPHA CHECK	Request for/confirmation of bearing and range to described point.
ANCHOR(ED)	1. Orbit about a specific point; refueling track flown by tanker. 2. Informative to indicate a turning engagement about a specific location.
ANGELS	Height of friendly aircraft in thousands of feet
ARIZONA	No ARM ordnance remaining.
ARM	Anti-Radiation Missile (e.g., HARM)
AS FRAGGED	Unit or element will be performing exactly as stated by the air tasking order.
AUTHENTICATE	To request or provide a response for a coded challenge.
AUTOCAT	Any communications relay using automatic retransmissions.
AZIMUTH	Two or more groups primarily separated in bearing.
BANDIT	An aircraft identified as enemy, in accordance with theater ID criteria. The term does not necessarily imply direction or authority to engage.
BANZAI	Informative or directive to execute launch and decide tactics.
BASE (Number)	Reference number used to indicate such information as headings, altitude, fuels
BEAD WINDOW	Last transmission potentially disclosed unauthorized information.
BEAM(ING)	Target stabilized within 70 to (Direction) 110 degree aspect; generally given with cardinal directions: east, west, north, south.
BENT	System indicated is inoperative.
BINGO	1. Fuel state needed for recovery. 2. Proceed/ am proceeding to specified base (field) or carrier.
BIRD	Friendly surface-to-air missile (SAM).
BIRD(S) AFFIRM S/A	informative indicating unit is able and prepared to engage a specified target with SAMs (presumes target is within or will enter the SAM engagement envelope).
BIRD(S) AWAY	Friendly SAM has been fired at designated target.
BIRD(S) NEGAT S/A	informative indicating unit is unable to engage a specified target with SAMs. Opposite of BIRD(S) AFFIRM.
BITTERSWEET	Notification of possible BLUE ON BLUE situation relative to a designated track or friendly aircraft.
BLANK A SEAD	aircraft does not detect any emitters of interest.
BLIND	No visual contact with friendly aircraft/ground position. Opposite of VISUAL.
BLOW THROUGH	Directive/informative call that indicates aircraft will continue straight ahead at the merge and not turn with target/targets.
BLUE	Friendly forces.
BOGEY	A radar or visual air contact whose identity is unknown.
BOGEY DOPE	Request for target information as briefed/available.
BOX	Groups/contacts/formations in a square or offset square.
BRAA	Tactical control format providing target bearing, range, altitude, and aspect, relative to a friendly aircraft.
BRACKET	Indicates geometry where friendly aircraft will maneuver to a position on opposing sides, either laterally or vertically from the target.
BREAK (Direction)	Directive to perform an immediate maximum performance turn in the direction indicated. Assumes a defensive situation.
BREAKAWAY	Tanker or receiver directive call indicating immediate vertical and nose/ tail separation between tanker and receiver is required.
BREVITY	Radio frequency is becoming saturated/degraded or jammed and briefer transmissions must follow.
BROADCAST	Request/directive to switch to broadcast control.

BROKE LOCK	Loss of radar/IR lock-on (advisory).
BRUISER	Friendly air launched anti-ship missile (ASM) (e.g., HARPOON, EXOCET)
BUDDY LOCK	Locked to a known friendly aircraft. Normally a response to a "SPIKED" OR "BUDDY SPIKE" call and accompanied with position/heading/altitude.
BUDDY SPIKE	Friendly aircraft air-to-air indication on RWR. To be followed by position/heading/altitude.
BUGOUT	Separation from that particular (Direction) engagement/attack/operation; no intent to reengage/return.
BULLDOG	Friendly surface/submarine launched anti-ship missile (ASM) (e.g. HARPOON)
BULLSEYE	An established point from which the position of an object can be referenced. Made by cardinal/range or digital format.
BUMP/BUMP-UP	A fly-up to acquire LOS to the target or laser designation.
BUSTER	Directive call to fly at max continuous speed (military power).
BUZZER	Electronic communications jamming.
CANDYGRAM	Informative call to aircraft that EW targeting information is available on a briefed secure net.
CAP/CAPPING	1. Directive call to establish an (Location) orbit at a specified location. 2. An orbit at an specified location.
CAPTURED	Aircrew has identified and is able to track a specified A/G target with an on-board sensor.
CEASE	In air defense, break the ENGAGEMENT engagement on the target specified. Missiles in flight will continue to intercept.
CEASE FIRE	Do not open fire or discontinue firing; complete intercept if weapons are in flight; continue to track.
CHAMPAGNE	An attack of three distinct groups with two in front and one behind.
CHATTERMARK	Begin using briefed radio procedures to counter communications jamming.
CHEAPSHOT	1. (USAF) Active missile supported to high PRF but not medium PRF. 2. (Naval) Active missile not supported to active range.
CHECK	Turn () degrees left or right (LEFT/RIGHT) and maintain new heading.
CHERUBS	Height of a friendly aircraft in hundreds of feet.
CHICKS	Friendly aircraft.
CLEAN	1. No radar contacts on aircraft of interest. 2. No visible battle damage. 3. Aircraft not carrying external stores.
CLEARED	Requested action is authorized (no engaged/support roles are assumed).
CLEARED HOT	Ordnance release is authorized.
CLOAK	Switch from normal external lighting to covert NVD only compatible lighting.
CLOSING	Decreasing in range.
COLD	1. Attack geometry will result in a pass or roll out behind the target. 2. On a leg of the CAP pointed away from the anticipated threats. 3. Group(s) heading away from friendly aircraft.
COLOR	Request for information on a (System/Position) (system) at stated location; usually a request for ambiguity resolution. May be used with IDM data message - COLOR, DATA
COME OFF	Directive to maneuver as (Left/Right/ indicated to either regain Low/Dry) mutual support or to deconflict flight paths for an exchange of engaged and supporting roles. Implies both VISUAL and TALLY.
COMMIT(TED)	Fighter intent to engage/intercept; controller continues to provide information.
CONFETTI	Chaff lane or corridor.
CONS/CONNING	Threat/bogey aircraft leaving contrails.
CONTACT	1. Sensor contact at the stated position. 2. Acknowledges sighting of a specified reference point.
CONTINUE	Continue present maneuver, does not imply clearance to engage or expend ordnance.
CONTINUE DRY	Ordnance release not authorized.
COVER(ING)	Directive/Informative to take S/A action or establish an A/A posture that will

CRANK F	Allow engagement of a specified target or threat.
CUTOFF	Pole maneuver; implies (Direction) illuminating target at radar gimbal limits.
CYCLOPS	Request for, or directive to, intercept using cutoff geometry.
DASH (#)	Any UAV.
DATA	Aircraft position within a flight. Use if specific callsign is unknown.
DEADEYE	Standby for IDM data message (Object/Position) concerning (object) at stated location.
DECLARE	Call by an airborne laser designator indicating the laser/IR system is inoperative.
DEFENSIVE	Inquiry as to the identification of a specified track(s), target(s), or correlated group.
DE-LOUSE	Aircraft is in a defensive (Spike/Missile/ position and maneuvering with SAM/Mud/AAA) reference to the stated condition.
DEPLOY	Directive to detect and identify unknown aircraft trailing friendly aircraft.
DIVERT	Directive to maneuver to briefed positioning.
DOLLY	Proceed to alternate mission/base.
DRAG(ING)	Link-4A/TADIL C
DROP(ING)	1. (AF) Target stabilized at (Direction) 0-60 degrees aspect. 2. (Naval) Target stabilized at 120-180 degrees aspect.
DUCK	1. Directive/informative to stop monitoring a specified emitter/target and resume Search responsibilities. 2. Remove the emitter/target from tactical picture/track stores.
ECHELON	Tactical Air Launched Decoy (TALD).
ECHO	Groups/contacts/formation with wingman displaced approximately 45 degrees Behind leader's 3/9 line.
ENGAGED	Positive SEESAW/EWWS/ System M/Mode X reply.
ESTIMATE	Maneuvering with the intent to kill. Implies visual/radar acquisition of target.
EXTEND	Provides estimate of the size, range, height, or other parameter of a specified contact; implies degradation.
EYEBALL()	Short term maneuver to gain (Direction) energy, distance, or separation; normally with the intent of reengaging.
FADED	1. Fighter with primary visual identification responsibility. 2. EO/IR/NVD acquisition of an aircraft. Normally followed by () number of aircraft observed.
FAST	Radar contact is lost. (Termination of track plotting is not warranted.)
FATHER	Target speed is estimated to be 600 knots ground speed/mach 1 or greater.
FEET WET/DRY	TACAN station.
FENCE (In/Out)	Flying over water/land.
FLANK(ING)	Set cockpit switches as appropriate prior to entering/exiting the combat area.
FLASH (System)	1. (USAF) Target with a stable aspect of 120 to 150 degrees. 2. (Naval) Target with stable aspect of 30 to 60 degrees.
FLOAT	Temporarily turn on prebriefed IFF mode or system.
FOX (Number)	Directive/informative to expand the formation laterally within visual limits to maintain a radar contact or prepare for a defensive response.
FOX MIKE	Simulated/actual launch of airto- air weapons.
FRIENDLY	ONE - semi-active radar-guided missile.
FURBALL	TWO - infrared-guided missile.
GADGET	THREE - active radar-guided missile.
GATE	VHF/FM radio.
GIMBAL	A positively identified friendly contact.
GO ACTIVE	A turning fight involving multiple aircraft with known BANDITs and FRIENDLIES mixed.
	Radar or emitter equipment.
	Directive/informative to fly as quickly as possible, using afterburner/ max power.
	Radar target is approaching (Direction) azimuth or elevation limits.
	Go to briefed Have Quick net.

GO CLEAR	Use unencrypted voice communications.
GOGGLE	Directive/informative to put DEGOGGLE on/take off NVD's.
GORILLA	Large force of indeterminate numbers and formation.
GO SECURE	Use encrypted voice communications.
GRANDSLAM	All HOSTILE aircraft of a designated track (or against which a mission was tasked) are shot down.
GREEN (Direction)	Direction determined to be clearest of enemy air-to-air activity.
GREYHOUND	Friendly ground attack cruise missile (e.g. TLAM, CALCM).
GROUP	Radar targets within approximately 3 NM of each other.
GUNS	An air-to-air or air-to-surface gunshot.
HARD (Direction)	High-G, energy sustaining turn.
HEAD	1. (USAF) Target with an HEAD ON aspect aspect of 160 to 180 degrees. 2. (Naval) Target with an aspect of 0 to 20 degrees.
HEADS UP	Alert of an activity of interest.
HEAVY	A group or package known to contain three or more entities.
HIGH	Between 25,000 and 40,000 ft MSL.
HIT(S)	1. (A/A) Momentary radar return(s) in search. (Indicates approximate altitude information from fighter.) 2. (A/G) Weapons impact within lethal distance.
HOLD DOWN	Directive to key transmitter for DF steer.
HOLDING HANDS	Aircraft in visual formation.
HOLD FIRE	An emergency fire control order used to stop firing on a designated target, to include destruction of any missiles in flight.
HOME PLATE	Home airfield or carrier.
HOOK (Left/Right)	Directive to perform an in-place 180 degree turn.
HOSTILE	A contact identified as enemy upon which clearance to fire is authorized in accordance with theater rules of engagement.
HOT	1. Attack geometry will result in roll out in front of the target. 2. On a leg of the CAP pointing toward the anticipated threats. 3. Group heading towards friendly aircraft. Opposite of COLD. 4. Ordnance employment intended or completed.
HOTDOG	Informative/directive call that an aircraft is approaching or at a specified stand-off distance from the sovereign airspace of a nation (as defined by national boundaries or territorial sea and airspace). (COLOR may indicate additional standoff distance.) Follow briefed procedures.
HOTEL FOX	HF radio
HUSKY (Naval)	AIM-120 supported to HPRF active. Same as USAF CHEAPSHOT.
ID	1. Directive to identify the target. 2. ID accomplished, followed by type.
IFF	Identification Friend/Foe system.
IN (Direction)	Informative indicating a turn to a hot aspect relative to a threat/target.
INDIA	Mode IV.
INTERROGATE	Interrogate the designated contact of the IFF mode indicated.
JACKAL	Surveillance network participating group (NPG) of Link 16/TADIL J.
JOKER	Fuel state above BINGO at which separation/bugout/event termination should begin.
JUDY	Aircrew has radar/visual contact on the correct target, has taken control of the intercept and only requires situation awareness information. Controller will minimize radio transmissions.
KILL	1. Clearance to fire. 2. In training, a fighter call to indicate kill criteria have been fulfilled.
KNOCK IT OFF	Directive to cease air combat maneuvers/attacks/activities.
LADDER	Three or more groups/contacts in range.
LASER ON	Directive to start laser designation.
LEAD-TRAIL	Tactical formation of two contacts within a group separated in range or following one another.

LEAKER(S)	Airborne threat has passed through a defensive layer. Call should include amplifying information.
LINE ABREAST	Two contacts within a group side-by-side.
LIGHTS ON/OFF	Directive to turn on/off exterior lights.
LOCKED	Final radar lock-on; sort is not (BRAA/Direction) assumed.
LOST CONTACT	Radar contact lost. (DROP track is recommended).
LOST LOCK	Loss of radar/IR lock-on (advisory).
LOW	Target altitude below 10,000 ft AGL.
MAGNUM	Launch of friendly antiradiation missile.
MAPPING	Multi-function radar in an A/G mode.
MARKING	Friendly aircraft leaving contrails.
MARSHAL(ING)	Establish(ed) at a specific point.
MEDIUM	Target altitude between 10,000 ft AGL and 25,000 ft MSL.
MERGE(D)	1. Information that friendlies and targets have arrived in the same visual arena. 2. Call indicating radar returns have come together.
MICKEY	Have Quick Time-of-Day (TOD) signal.
MIDNIGHT	Informative advising that C2 functions are no longer available. Opposite of SUNRISE.
MONITOR	Maintain radar awareness on or assume responsibility for specified group.
MOTHER	Parent ship.
MUD	Indicates RWR ground threat (Type/Direction) displayed followed by clock position and type.
MUSIC	Electronic radar jamming. (On AI radar, electronic deceptive jamming.)
NAILS	RWR indication of AI radar in search. Add clock position/azimuth, if known.
NAKED	No RWR indications.
NEW PICTURE	Used by controller or aircrew when tactical picture has changed. Supersedes all previous calls and re-establishes picture for all players.
NO FACTOR	Not a threat.
NO JOY	Aircrew does not have visual contact with the target/bandit/ landmark. Opposite of TALLY.
NOTCH	All-aspect missile defensive (Direction) maneuver to place threat radar/missile on the beam.
OFF (Direction)	Informative call indicating attack is terminated and maneuvering to the indicated direction.
OFFSET	Informative call indicating (Direction) maneuver in a specified direction with reference to the target.
ON STATION	Informative unit/aircraft has reached assigned station.
OPENING	Increasing in range.
OUT (Direction)	Informative indicating a turn to a cold aspect relative to the threat. Opposite of IN.
OUTLAW	Informative call that a bogey has met point of origin criteria.
PACKAGE	Geographically isolated collection of groups/contacts/formations.
PADLOCKED	Informative call indicating aircrew cannot take eyes off an aircraft or surface position without risk of losing TALLY/VISUAL.
PAINT(S)	Interrogated group/radar contact that is responding with any of the specified IFF modes and correct codes established for the ID criteria.
PARROT	IFF transponder.
PICTURE	Provide tactical situation status pertinent to mission.
PIGEONS	Magnetic bearing and range to (Location) HOMEPLATE (or specified destination).
PINCE/PINCER	Threat maneuvering for a bracket attack
PITBULL	1. Informative AIM-120 is at MPRF active range. 2. AIM-54 at active range.
PLAYMATE	Cooperating aircraft.
PLAYTIME	Amount of time aircraft can remain on station.
POGO	Switch to communication channel number preceding POGO. If unable to

	Establish communications, switch to channel number following POGO. If no channel number follows POGO, return to this channel.
POP	1. Starting climb for air-to-surface attack. 2. Max performance climb out of low altitude structure.
POPEYE	Flying in clouds or area of reduced visibility.
POPUP	Informative call of a contact that has suddenly appeared inside of meld/CCR/briefed range.
POSIT	Request for position; response in terms of a geographic landmark, or off a common reference point.
POST ATTACK	Directive transmission to (Direction) indicate desired direction after completion of intercept/engagement.
POST HOLE	Rapid descending spiral.
PRESS	Directive to continue the attack; mutual support will be maintained. Supportive role will be assumed.
PRINT (Type)	Unambiguous NCTR reply.
PUMP	A briefed maneuver to low aspect to stop closure on the threat or geographical boundary with the intent to re-engage.
PURE	Informative indicating pure pursuit is being used or directive to go pure pursuit.
PUSH (Channel)	Go to designated frequency. No acknowledgment required
PUSHING	Departing designated point.
PUSHING	Informative that said group(s) (Group description) have turned cold and will continue to be monitored.
RANGE	Two or more groups separated primarily separated in distance along the same bearing..
RAYGUN	Indicates a radar lock-on to (Position/Heading/ unknown aircraft. A request Altitude) for a "BUDDY SPIKE" reply from friendly aircraft meeting these parameters (to prevent fratricide).
REFERENCE	Directive to assume stated (Direction) heading.
REPORTED	Identification of an object or a (Type) contact by an intelligence system.
RESET	Proceed to a prebriefed position or area of operation.
RESUME	Resume last formation/station/mission ordered.
RETROGRADE	Directive to withdraw from present position or area of operation in response to a threat.
RIDER	A bogey that is conforming with safe passage routing/airspeed/altitude procedures.
RIFLE	AGM-65 MAVERICK launch.
RIPPLE	Two or more munitions released or fired in close succession.
ROE	Rule of engagement.
ROLEX (+/- Time)	Timeline adjustment in minutes from planned mission execution time. (Plus means later; minus means earlier).
ROPE	Illumination of an aircraft with an IR pointer.
SADDLED	Informative from wingman/element indicating the return to briefed formation position.
SAM	Surface to Air missile.
SAM (Direction)	Visual acquisition of a SAM or SAM launch, should include position.
SANDWICHED	A situation where an aircraft/element positioned between opposing aircraft/elements.
SAUNTER	Fly at best endurance.
SCRAM	Emergency directive to egress (Direction) for defensive or survival reasons.
SCRAMBLE	Takeoff as quickly as possible.
SCUD	Any threat TBM.
SEPARATE	Leave a specific engagement; may or may not reenter.
SHACKLE	One WEAVE, a single crossing of flight paths; maneuver to adjust/regain formation parameters.
SHADOW	Follow indicated target.
SHIFT	Directive to shift laser illumination.

SHOOTER	Aircraft/unit designated to employ ordnance.
SHOTGUN	Prebriefed weapons state at which separation/bugout should begin.
SKATE	Informative/directive to execute launch and leave tactics.
SKIP IT	Veto of fighter commit, usually followed with further directions.
SKOSH	Aircraft is out of/or unable to employ active radar missiles.
SKUNK	A radar or visual maritime surface contact whose identity is unknown
SLAPSHOT	Directive for an aircraft to (Type/Bearing) employ a range unknown HARM against a specified threat at the specified bearing.
SLIDE	Directive call to HVAA to continue present mission while extending range from target in response to perceived threat.
SLOW	Target with a ground speed of 300 knots or less.
SMASH	Directive to turn on/off anticollision lights.
SMOKE	Smoke marker used to mark a position.
SNAKE	Directive to oscillate an IR pointer about a target.
SNAP (Direction)	An immediate vector to the group described.
SNIPER	Directive for an aircraft to employ a range-known HARM against a specified threat at the specified location.
SNOOZE	Directive/informative indicating initiation of EMCON procedures.
SORT	Directive to assign responsibility within a group; criteria can be met visually, electronically (radar) or both.
SORTED	Sort responsibility has been met.
SOUR	1. Equipment indicated is operating inefficiently. 2. Invalid response to an administrative IFF check. (Opposite of SWEET)
SPADES	An interrogated group/radar contact which lacks the ATO (or equivalent) IFF modes and codes required for the ID criteria.
SPARKLE	Target marking by IR pointer. Target marking by gunship or FAC-A using incendiary rounds.
SPIKE	RWR indication of an AI threat in track, launch, or unknown mode. Include bearing/clock position and threat type, if known.
SPIN	Directive/informative to execute a prebriefed timing/spacing maneuver.
SPITTER	An aircraft that has departed (Direction) from the engagement or is departing the engaged fighters targeting responsibility.
SPLASH	1. (A/A) Target destroyed. 2. (A/G) Weapons impact.
SPLIT	An informative call that a flight member is leaving formation to engage a threat; visual may not be maintained.
SPOOFING	Informative that voice deception is being employed.
SPOT	Acquisition of laser designation.
SQUAWK ()	Operate IFF as indicated or IFF is operating as indicated.
SQUAWKING	An informative call denoting (Mode #) a bogey is responding with an IFF mode
STACK	Two or more groups/contacts/formations with a high/low altitude separation in relation to each other.
STATUS	Request for tactical situation.
STEADY	Directive to stop oscillation of IR pointer.
STEER	Set magnetic heading indicated.
STERN	Request for, or directive to, intercept using stern geometry.
STINGER	Within a group, a formation of three or more aircraft with a single aircraft in trail.
STOP	Stop IR illumination of a target.
STRANGER	Unidentified traffic that is not associated with the action in progress.
STRANGLE ()	Turn off equipment indicated.
STRIP	Individual fighter/section is leaving the formation to pursue separate attacks.
STRIPPED	Informative call from wingman/element indicating out of briefed formation/position.
STROBE	Radar indications of noise jamming.
SUNSHINE	Directive or informative indicating illumination of target is being conducted

	with artificial illumination.
SUNRISE	Informative C2 functions are available (opposite of MIDNIGHT).
SWEET	1. Equipment indicated is operating efficiently. 2. Valid response to an administrative IFF check. (Opposite of SOUR)
SWITCH(ED)	Indicates an attacker is changing from one aircraft to another.
TACTICAL	Request/directive to switch to tactical control.
TAG	(System, Known identification of a W/Position) specific (system) at the stated location. May be used with IDM data message, (e.g. "TAG DATA").
TALLY	Sighting of a target, bandit, bogey, or enemy position; opposite of NO JOY.
TARGET ()	Directive to assign group responsibility to aircraft in a flight.
TARGETED ()	Group responsibility has been met.
TEN SECONDS	Directive to terminal controller to standby for LASER ON call in approximately 10 seconds.
TERMINATE	1. Stop laser illumination of a target. 2. Cease local engagement without affecting the overall exercise.
THREAT	Untargeted HOSTILE/(Direction) BANDIT/ BOGEY within prebriefed range/aspect of a friendly.
THROTTLES	Reduction in power to decrease IR signature.
TIED	Positive radar contact with element/aircraft.
TIGER	Enough fuel and ordnance to accept a commit.
TIMBER	Air control NPG of Link 16/TADIL J.
TRACKING	1. Stabilized gun solution. 2. Continuous illumination of a target. 3. Contact heading.
TRAILER	The last aircraft within a group(s).
TRASHED	Informative call that missile has been defeated.
TRESPASS	The addressed flight is entering (Position) a S/A threat ring of a specific system at the stated location.
TUMBLEWEED	Indicates limited situational awareness; NO JOY; BLIND; a request for information.
UNABLE	Cannot comply as requested/directed.
UNIFORM	UHF radio.
VAMPIRE	Hostile antiship missile (ASM).
VERY HIGH	Above 40,000 ft MSL.
VIC	Three groups, contacts, or formations with the single closest in range and two contacts, azimuth split, in trail.
VICTOR	VHF/AM radio.
VISUAL	Sighting of a friendly aircraft/ground position; opposite of BLIND.
WALL	Three or more groups or contacts primarily split in azimuth.
WARNING (Color)	Hostile attack is— RED imminent or in progress. YELLOW probable. WHITE improbable (all clear).
WEAPONS FREE ()	Fire only at targets not identified as friendly in accordance with current ROE.
WEAPONS TIGHT	at targets positively identified as hostile in accordance with current ROE.
WEAPONS HOLD	(USA, USMC) in self-defense or in SAFE (USN) response to a formal order.
NOTE: USN/NATO use	"WEAPONS SAFE" to avoid confusion with the phrase "HOLD FIRE."
WEEDS	Indicates that aircraft are operating are operating close to the surface.
WHAT LUCK	Request for results of missions or tasks.
WHAT STATE	Report amount of fuel and missiles remaining. Ammunition and oxygen are reported only when specifically requested or critical. () Active = number of active radar missiles remaining () Radar = number of semiactive radar missiles remaining. () Heat = number of IR missiles remaining. () Fuel = pounds of fuel or time remaining.
WINCHESTER	No ordnance remaining.

WORDS	Directive or interrogative regarding further information or directives pertinent to mission.
WORKING	1. A SEAD aircraft is gathering EOB on a designated emitter. Generally followed by signal type (SAM/AAA/ group), bearing, and range, if able. 2. Aircraft executing EID on a specific aircraft/group to obtain identification necessary for BVR employment.
YARDSTICK	Directive to use A/A TACAN for ranging.