

5/15/2008

SUBJ: SPECTRUM MANAGEMENT REGULATIONS AND PROCEDURES MANUAL

1. Purpose. Modify the usage designations of 121.5 and 123.45 MHz to make them consistent with International Civil Aviation Organization (ICAO) standards.

2. Audience. FAA spectrum management officers.

3. Where Can I Find This Order. You can find this order on the Directives Management System (DMS) website: https://employees.faa.gov/tools_resources/orders_notices/.

4. Explanation of Changes. Section 4.1.3.2.1 of ICAO Annex 10, Volume V designates the frequency 123.45 MHz for air-to-air communications to enable aircraft engaged in flights over remote and oceanic areas out of range of VHF ground stations to exchange necessary operational information and to facilitate the resolution of operational problems. To include this information in 6050.32B, two changes have been made: (1) a new paragraph 908 (Special Use of 123.45 MHz) has been added to Chapter 9 (VHF/UHF Air/Ground Communications Frequency Engineering), Page 86, and (2) a note has been added to the frequency block 123.325-123.475 MHz on Page 1 of Appendix 2 (Technical Data for VHF/UHF Communications Frequency Engineering), Figure 1 (VHF Allocations – 118-137 MHz). (It should be noted that within the United States, including Alaska, Hawaii and its possessions, the frequency 123.45 MHz is designated for non-government flight test operations.)

In addition, in 6050.32B, also in Figure 1 of Appendix 2, the functional designation of 121.5 MHz was wrongly stated as “Emergency Search and Rescue”. This usage designation for 121.5 MHz has been changed to “Emergency Frequency”, which reflects its long-term usage, and makes the designation fully consistent with Section 4.1.1.1 of ICAO Annex 10, Volume V.

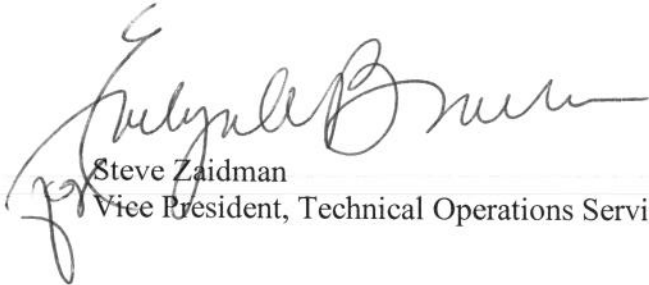
There will be no air traffic control system functional or operational changes resulting from these actions.

Since 6050.32B is printed on both the front and back sides of each page, the change on Page 86 to Chapter 9 will also require the replacement of Page 85, even though there is no change to Page 85. Likewise, the changes to Appendix 2, Page 1, will also require the replacement of Page 2 to that appendix.

5. Disposition of Transmittal. Retain this transmittal.

PAGE CONTROL CHART

Remove Pages	Dated	Insert Pages	Dated
85	11/17/05	85	11/17/05
86	11/17/05	86	5/15/2008
1 (Appendix 2)	11/17/05	1 (Appendix 2)	5/15/2008
2 (Appendix 2)	11/17/05	2 (Appendix 2)	11/17/05



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b. The large TRACON ECS system is much like the Sustaining BUEC system. The FMOs shall ensure that the site selected for the location of the ECS radio provides the necessary coverage for the airspace that the primary facility covers and must satisfy the full frequency engineering criteria for a Remote Transmitter/Receiver (RTR) frequency assignment. An ECS radio shall not be colocated in the same facility as the primary radio. Any exceptions to these requirements must be justified by waivers jointly approved by Technical Operations and Terminal Services.

c. When the main and standby radios are located in separate facilities on an airport, both radios shall have their own GMF assignment. The two assignments shall be select keyed with each other and labeled as the main or standby radio in the "Remarks" section of the GMF record.

d. The portable battery operated emergency radios used in towers are not normally listed in the GMF.

e. Dedicated back up or emergency frequencies (excluding 121.500 and 243.000 MHz) shall not be allowed at any location.

907. TEMPORARY ASSIGNMENTS. Requests to provide temporary frequency assignments for air shows, fire fighting, military exercises, and other events are a normal part of the FMO duties. Each of these situations is different and requires the FMO to understand the function of each temporary frequency requested.

a. Air Shows are common events typically occurring during the summer months. The aircraft coordination at air shows fall into one of three basic categories: FAA controllers in temporary towers, military controllers in temporary towers, and non-Fed air boss' coordinating aerial activities. In all cases, the FMO shall review the frequency requests to ensure the radius, flight level, function, and numbers of frequencies are consistent with the delegated airspace, types of aircraft, and size of the facility. Military aircraft shall use UHF frequencies unless there is only a single VHF frequency for the air show. Separate VHF frequencies for military aircraft shall not be issued. Extra or spare frequencies shall not be issued. The Search and Rescue frequency 123.100 MHz may be issued as an air show frequency with the understanding that the air show may be preempted if a Search and Rescue operation occurs in the vicinity of the air show.

(1) For the case with FAA controllers in temporary towers, the FMO shall engineer the appropriate frequencies and enter them into the AFM using an air show temporary (AS T) prefix for the serial number. The temporary assignment shall contain the start and stop date for the air show (a day or two may be added to the beginning and/or end of the scheduled air show duration to accommodate practice days and/or arrival and departure coordination if requested). All temporary air show assignments shall be deleted from the AFM once the air show dates are past.

(2) For the case of military controllers in temporary towers, the FMO shall follow the procedure for FAA controllers but shall not release the frequencies to the requestor. The FMO shall instruct the requestor that frequencies have been reserved for the air show and tell the requestor that they must obtain a temporary assignment for the air show frequencies through the appropriate DOD National Frequency Management Office. Once Technical Operations ATC Spectrum Engineering Services has received a temporary frequency request for the air show from the appropriate DOD National Frequency Management Office, the frequencies will be released.

(3) For the case of non-Fed air boss' coordinating the aerial activities, these requestors should normally be referred to the FCC. The FCC will typically authorize the use of an FCC controlled frequency for the air show. However, there are cases where the FCC frequencies are too congested for use by a non-Fed air boss, and it is prudent to allow an ATC frequency to be used for the air show. As in the case of the military controllers, the FMO shall not release the frequency to the requestor. The requestor must obtain a temporary license from the FCC for the air show. The FAA will give the frequency to the FCC when the temporary request is processed.

For some special events (e.g., Oshkosh or Sun-N-Fun) permanent frequencies may be assigned and placed in the GMF. These assignments require the prior concurrence of Director of Technical Operations ATC Spectrum Engineering Services and must be clearly labeled as frequencies for the special event. The FMO should be aware of these permanent frequencies and use them to meet other temporary requirements whenever possible.

b. Fire Fighting frequencies are assigned to assist various agencies involved in aerial fire fighting activities. All fire fighting frequencies are coordinated through the National Interagency Fire Center (NIFC). Requests from individual agencies, states, or local governments should be referred to NIFC. In the more fire prone (i.e. Western) portions of the United States, fire fighting sectors have been established to coordinate fire fighting activities. A fire fighting frequency is typically assigned to each of these sectors to allow immediate response to any reported fire. The frequencies for these sectors should be reused as often as possible realizing that fire fighting aircraft typically operate within 1000 feet of the ground. This frequency is typically assigned for the entire fire season (April-October). The FMOs may set aside a second frequency for each of these sectors to be available for quick release if fire activity escalates in a particular area. As fire activity increases, additional project fire frequencies may be engineered for specific fire efforts. Once these project fires are contained these frequencies should be released back to the FAA. In addition, tanker base frequencies are also issued for the fire season. All fire fighting frequencies shall be placed into the AFM using the fire fighting temporary prefix (FFT) and shall have a current year serial number. All other fire fighting assignments shall be deleted from AFM.

c. Military exercises often involve requests for VHF and UHF air/ground frequencies. The FMO must carefully evaluate the request presented from the military and should discuss the exercise with the concerned service area air traffic organization. Most military exercises are normally to support military training and do not justify the use of VHF air/ground frequencies; however, in some of these cases, a single VHF air/ground frequency may be issued for the exercise. In a few cases, the military exercise involves the delegation of airspace to the military to provide ATC services to everyone in that airspace. If the delegated airspace is open to the flying public, then paired VHF air/ground frequencies are required for each UHF frequency. The use of contracted civil aircraft and COTS training aircraft that do not have UHF radios does not justify the use of 118.000-137.000 MHz frequencies in military exercises. The FMO shall engineer the military exercise frequencies and enter them into AFM using the appropriate military temporary prefix (AR T, AF T, N T) but shall not release the frequencies to the requestor. The FMO shall instruct the requestor that frequencies have been reserved and tell the requestor that they must obtain a temporary assignment for the exercise through the appropriate DOD National Frequency Management Office. Once Technical Operations ATC Spectrum Engineering Services has received a temporary frequency request from the appropriate DOD National Frequency Management Office, the frequencies will be released.

d. Other temporary assignments may arise as seasonal activities or search and rescue training. For search and rescue training, the frequency 122.900 MHz is specified in the FCC rules for use by the Civil Air Patrol and state or local agencies engaged in search and rescue training. These groups should not use 123.100 MHz for training. For guidance on other temporary VHF and UHF air/ground communications requests contact the Technical Operations ATC Spectrum Engineering Services National VHF and/or UHF frequency band manager.

908. SPECIAL USE OF 123.45 MHZ. Within the United States (including Alaska, Hawaii, and United States possessions) 123.45 MHz is authorized to be used only for non-government flight test operations, not air-to-air communications. However, the frequency 123.45 MHz is designated as an air-to-air VHF communications frequency to enable aircraft engaged in flights over remote and oceanic areas out of range of VHF ground stations to exchange necessary operational information and to facilitate the resolution of operational problems. This special use is in compliance with ICAO Annex 10, Volume V, Section 4.1.3.2.1.

909 thru 999. RESERVED.

APPENDIX 2. TECHNICAL DATA FOR VHF/UHF COMMUNICATIONS FREQUENCY ENGINEERING

FIGURE 1. VHF ALLOCATIONS - 118-137 MHz

118.000—121.400	ATC	123.050—123.075	UNICOM – Uncontrolled Airports
121.425—121.450	Gov AWOS/ASOS	123.100	SAR; Temp. ATCTs and fly-ins with SAR coordination
121.475	Band Protection for 121.500	123.125—123.275	Flight Test
121.500	Emergency Frequency	123.300	Aviation Support
121.525	Band Protection for 121.500	123.325—123.475	Flight Test (123.45 MHz used for air-to-air communications over remote and oceanic areas out of range of VHF ground stations)
121.550—121.575	Gov AWOS/ASOS	123.500	Aviation Support
121.600—121.925	ATC (Old Gnd Cntl Freq Band)	123.525—123.575	Flight Test
121.775	SAR ELT Location training	123.600—123.650	ATC (Formerly Air Carrier Advisory. FSS Uses to be phased out)
121.950	Aviation Support	123.675—126.175	ATC
121.975	FSS Private Aircraft Advisory	126.200	Military Common (Advisory)
122.000—122.050	EFAS	126.225—128.800	ATC
122.075—122.675	FSS Private Aircraft Advisory	128.825—132.000	Operational Control
122.700—122.725	UNICOM - Uncontrolled Airports	132.025—134.075	ATC
122.750	Fixed wing aircraft - Air-to-Air	134.100	Military Common (Advisory)
122.775	Aviation Support	134.125—135.825	ATC
122.800	UNICOM - Uncontrolled Airports	135.850	FAA Flight Inspection
122.825	Domestic VHF	135.875—135.925	ATC
122.850	MULTICOM	135.950	FAA Flight Inspection
122.875	UNICOM - Domestic VHF	135.975—136.400	ATC
122.900	MULTICOM, SAR training	136.425—136.475	FIS until 2011
122.925	MULTICOM - Special Use/ National Resp. Mgt.	136.500—136.875	Domestic VHF
122.950	UNICOM - full time ATCT, FSS	136.900—136.975	International and Domestic VHF
122.975—123.000	UNICOM – Uncontrolled Airports		
123.025	Helicopter air-to-air		

1. VHF/UHF FREQUENCY ENGINEERING. Frequencies available to the FMO for engineering VHF assignment are given in figure 1 and UHF ATC frequencies are found in the latest version of the 225-400 MHz channel plan. VHF is used normally for communication with civil aircraft and a limited number of military aircraft. UHF is used only for communication with military aircraft. Military non-ATC communications shall not use VHF ATC frequencies. Military tactical and training (TAC and training) operations and Research, Test, Development, and Evaluation (RTDE) shall not use UHF ATC frequencies.

a. In en route functions, a VHF and a UHF frequency are normally paired. In addition, a tactical UHF frequency may be assigned to an en route sector to support military operations.

b. In terminal functions, a VHF and a UHF are paired for only some functions.

2. FPSV.

a. COMM frequencies are engineered for distinct volumes of airspace and are guaranteed to be free from a preset level of interference from an undesired source. Each specific function has its own FPSV. Some are cylinders, while others are odd geometric solids. These odd shapes are normally required for en route ATC functions. All FPSVs are valid only within Radio Line Of Sight (RLOS). Refer to paragraph 4 for details.

b. Cylindrical service volumes (CSV) are defined as radii in nmi usually centered on the facility, with the maximum altitude of the cylinder defined in feet. These parameters are defined for the various ATC functions in paragraph 2d, below. A sketch of a cylindrical service volume is shown in figure 2.

c. Tailored or "multipoint" service volumes (TSV) are unique shapes designed to afford necessary coverage within a designed interference-free protection level. The geometric center of the tailored service is the center point for the radius that is the distance to the farthest point of the TSV. A sketch of a typical TSV is also shown in figure 2. The geometric center and radius can be found by using the center point and radius of the smallest circle that will cover all of the TSV.

FIGURE 2. FPSVs

