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such communications should apply sufficiently in advance to allow for the time necessary to coordinate with Canada or Mexico.

BASIC EXCHANGE TELEPHONE RADIO SYSTEMS

§ 22.757 Channels for basic exchange telephone radio systems.

The channels listed in § 22.725 are also allocated for paired assignment to transmitters in basic exchange telephone radio systems.

[70 FR 19309, Apr. 13, 2005]

§ 22.759 Power limit for BETRS.

The effective radiated power of central office and rural subscriber station transmitters used in basic exchange telephone radio systems must not exceed the limits in this section.

(a) *Maximum ERP.* The effective radiated power (ERP) of central office and rural subscriber station transmitters in BETRS must not exceed the applicable limits in this paragraph under any circumstances.

Frequency range (MHz)	Maximum ERP (watts)
152–153	1400
157–159	150
454–455	3500
459–460	150

(b) *Height-power limit.* The ERP of central office stations in BETRS must not exceed the amount calculated as follows:

$ERP_w = 557{,}418 \div h_m 2$

where ERP_w is the effective radiated power in Watts

h_m is the average (eight cardinal radial) antenna height above average terrain in meters

Subpart G—Air-Ground Radiotelephone Service

§ 22.801 Scope.

The rules in this subpart govern the licensing and operation of air-ground stations and systems. The licensing and operation of these stations and systems is also subject to rules elsewhere in this part and in part 1 of this chapter that generally apply to the Public Mobile Services. In case of conflict, however, the rules in this subpart govern.

[70 FR 19309, Apr. 13, 2005]

GENERAL AVIATION AIR-GROUND STATIONS

§ 22.805 Channels for general aviation air-ground service.

The following channels are allocated for the provision of radiotelephone service to airborne mobile subscribers in general aviation aircraft. These channels have a bandwidth of 20 kHz and are designated by their center frequencies in MegaHertz.

SIGNALLING CHANNEL PAIR

Ground	Airborne mobile
454.675	459.675

COMMUNICATION CHANNEL PAIRS

Ground	Airborne mobile
454.700	459.700
454.725	459.725
454.750	459.750
454.775	459.775
454.800	459.800
454.825	459.825
454.850	459.850
454.875	459.875
454.900	459.900
454.925	459.925
454.950	459.950
454.975	459.975

(a) Channel 454.675 MHz is assigned to each and every ground station, to be used only for automatically alerting airborne mobile stations of incoming calls.

(b) All airborne mobile channels are assigned for use by each and every airborne mobile station.

§ 22.807 General aviation air-ground application requirements.

In addition to the information required by subparts B and D of this part, FCC Form 601 applications for authorization to operate a general aviation air-ground station must contain the applicable supplementary information described in this section.

(a) *Administrative information.* The following information is required by FCC Form 601.

(1) The number of transmitter sites for which authorization is requested.

(2) The call sign(s) of other facilities in the same area that are ultimately controlled by the real party in interest to the application.

(b) *Technical information required.* For each transmitter in the Rural Radiotelephone Service, the following information is required by FCC Form 601:

(1) Location description, city, county, state, geographic coordinates (NAD83) correct to ±1 second, site elevation above mean sea level, proximity to adjacent market boundaries and international borders;

(2) Antenna height to tip above ground level, antenna gain in the maximum lobe, the electric field polarization of the wave emitted by the antenna when installed as proposed;

(3) The center frequency of each channel requested, the maximum effective radiated power, any non-standard emission types to be used, including bandwidth and modulation type and the transmitter classification (e.g. ground or signaling).

[59 FR 59507, Nov. 17, 1994, as amended at 59 FR 59954, Nov. 21, 1994; 63 FR 68948, Dec. 14, 1998; 64 FR 53240, Oct. 1, 1999. Redesignated and amended at 70 FR 19309, Apr. 13, 2005]

§ 22.809 Transmitting power limits.

The transmitting power of ground and airborne mobile transmitters operating on the channels listed in § 22.805 must not exceed the limits in this section.

(a) *Ground station transmitters.* The effective radiated power of ground stations must not exceed 100 Watts and must not be less than 50 Watts, except as provided in § 22.811.

(b) *Airborne mobile transmitters.* The transmitter power output of airborne mobile transmitters must not exceed 25 Watts and must not be less than 4 Watts.

§ 22.813 Technical channel pair assignment criteria.

The rules in this section establish technical assignment criteria for the channel pairs listed in § 22.805. These criteria are intended to provide substantial service volumes over areas that have significant local and regional general aviation activity, while maintaining the continuous nationwide inroute coverage of the original geographical layout.

(a) *Distance separation for co-channel ground stations.* The FCC may grant an application requesting assignment of a communication channel pair to a proposed ground transmitter only if the proposed antenna location is at least 800 kilometers (497 miles) from the antenna location of the nearest co-channel ground transmitter in the United States, its territories and possessions; and 1000 kilometers (621 miles) from the antenna location of the nearest co-channel ground transmitter in Canada.

(b) *Dispersion.* The FCC may grant an application requesting assignment of a communication channel pair to a proposed ground transmitter only if there are no more than five different communication channel pairs already assigned to ground transmitters with antenna locations within a 320 kilometer (199 mile) radius of the proposed antenna location.

§ 22.815 Construction period for general aviation ground stations.

The construction period (see § 1.946 of this chapter) for general aviation ground stations is 12 months.

[70 FR 19310, Apr. 13, 2005]

§ 22.817 Additional channel policies.

The rules in this section govern the processing of applications for authority to operate a ground station transmitter on any ground station communication channel listed in § 22.805 when the applicant has applied or been granted an authorization for other ground station communication channels in the same area. The general policy of the FCC is to assign one ground station communication channel in an area to a carrier per application cycle, up to a maximum of six ground station communication channels per area. That is, a carrier must apply for one ground station communication channel, receive the authorization, construct the station, and notify the FCC of commencement of service before applying for an additional ground station communication channel in that area.

(a) *Air-ground transmitters in same area.* Any transmitter on any of the ground station channels listed in § 22.805 is considered to be in the same

area as another transmitter on any ground station channel listed in § 22.805 if it is located less than 350 kilometers (217 miles) from that transmitter.

(b) *Initial channel.* The FCC will not assign more than one ground station communication channel for new ground stations. Ground stations are considered to be new if there are no authorized ground station transmitters on any channel listed in § 22.805 controlled by the applicant in the same area.

(c) *Additional channel.* Applications for ground transmitters to be located in the same area as an authorized ground station controlled by the applicant, but to operate on a different ground station communication channel, are considered as requesting an additional channel for the authorized station.

(d) *Amendment of pending application.* If the FCC receives and accepts for filing an application for a ground station transmitter to be located in the same area as a ground station transmitter proposed in a pending application previously filed by the applicant, but on a different ground station communication channel, the subsequent application is treated as a major amendment to change the technical proposal of the prior application. The filing date of any application so amended is the date the FCC received the subsequent application.

(e) *Dismissal of premature applications for additional channel.* If the FCC receives an application requesting an additional ground station communication channel for an authorized ground station prior to receiving notification that the station is providing service to subscribers on the authorized channel(s), the FCC may dismiss that application without prejudice.

(f) *Dismissal of applications for seventh channel.* If the FCC receives an application requesting an additional ground station communication channel for an authorized ground station which would, if granted, result in that station being assigned more than six ground station communication channels in the same area, the FCC may dismiss that application without prejudice.

COMMERCIAL AVIATION AIR-GROUND SYSTEMS

§ 22.853 Eligibility to hold interest in licenses limited to 3 MHz of spectrum.

No individual or entity may hold, directly or indirectly, a controlling interest in licenses authorizing the use of more than three megahertz of spectrum (either shared or exclusive) in the 800 MHz commercial aviation Air-Ground Radiotelephone Service frequency bands (see § 22.857). Individuals and entities with either *de jure* or *de facto* control of a licensee in these bands will be considered to have a controlling interest in its license(s). For purposes of this rule, the definitions of ''controlling interests'' and ''affiliate'' set forth in paragraphs (c)(2) and (c)(5) of § 1.2110 of this chapter shall apply.

[70 FR 19310, Apr. 13, 2005]

§ 22.857 Channel plan for commercial aviation air-ground systems.

The 849–851 MHz and 894–896 MHz frequency bands are designated for paired nationwide exclusive assignment to the licensee or licensees of systems providing radio telecommunications service, including voice and/or data service, to persons on board aircraft. Air-ground systems operating in these frequency bands are referred to in this part as ''commercial aviation'' systems.

[70 FR 19310, Apr. 13, 2005]

§ 22.859 Incumbent commercial aviation air-ground systems.

This section contains rules concerning continued operation of commercial aviation air-ground systems that were originally authorized prior to January 1, 2004 to provide radiotelephone service using narrowband (6 kHz) channels, and that have been providing service continuously since the original commencement of service (hereinafter ''incumbent systems'').

(a) An incumbent system may continue to operate under its authorization, for the remaining term of such authorization, subject to the terms and conditions attached thereto. Wherever

such technical and operational conditions differ from technical and operational rules in this subpart, those conditions shall govern its operations.

(b) Notwithstanding any other provision in this chapter, the licensee of an incumbent system shall not be entitled to an expectation of renewal of said authorization.

(c) During the period that an incumbent system continues to operate and provide service pursuant to paragraph (a) of this section, air-ground systems of licensees holding a new authorization for the spectrum within which the incumbent system operates must not cause interference to the incumbent system. Protection from interference requires that the signals of the new systems must not exceed a ground station received power of −130 dBm within a 6 kHz receive bandwidth, calculated assuming a 0 dBi vertically polarized receive antenna.

[70 FR 19310, Apr. 13, 2005]

§ 22.861 Emission limitations.

The rules in this section govern the spectral characteristics of emissions for commercial aviation systems in the Air-Ground Radiotelephone Service. Commercial aviation air-ground systems may use any type of emission or technology that complies with the technical rules in this subpart.

(a) *Out of band emissions.* The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log (P) dB.

(b) *Measurement procedure.* Compliance with these rules is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kHz or greater. In the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed. A narrower resolution bandwidth is permitted in all cases to improve measurement accuracy provided the measured power is integrated over the full required measurement bandwidth (*i.e.*, 100 kHz or 1 percent of emission bandwidth, as specified). The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

(c) *Alternative out of band emission limit.* The licensee(s) of commercial aviation air-ground systems, together with affected licensees of Cellular Radiotelephone Service systems operating in the spectrum immediately below and adjacent to the commercial aviation air-ground bands, may establish an alternative out of band emission limit to be used at the 849 MHz and 894 MHz band edge(s) in specified geographical areas, in lieu of that set forth in this section, pursuant to a private contractual arrangement of all affected licensees and applicants. In this event, each party to such contract shall maintain a copy of the contract in their station files and disclose it to prospective assignees or transferees and, upon request, to the FCC.

(d) *Interference caused by out of band emissions.* If any emission from a transmitter operating in this service results in interference to users of another radio service, the FCC may require a greater attenuation of that emission than specified in this section.

[70 FR 19310, Apr. 13, 2005]

§ 22.863 Frequency stability.

The frequency stability of equipment used under this subpart shall be sufficient to ensure that, after accounting for Doppler frequency shifts, the occupied bandwidth of the fundamental emissions remains within the authorized frequency bands of operation.

[70 FR 19310, Apr. 13, 2005]

§ 22.867 Effective radiated power limits.

The effective radiated power (ERP) of ground and airborne stations operating on the frequency ranges listed in § 22.857 must not exceed the limits in this section.

(a) The peak ERP of airborne mobile station transmitters must not exceed 12 Watts.

(b) The peak ERP of ground station transmitters must not exceed 500 Watts.

[70 FR 19310, Apr. 13, 2005]

§ 22.873 Construction requirements for commercial aviation air-ground systems.

Licensees authorized to use more than one megahertz (1 MHz) of the 800 MHz commercial aviation air-ground spectrum allocation (see § 22.857) must make a showing of ''substantial service'' as set forth in this section. Failure by any such licensee to meet this requirement will result in forfeiture of the license and the licensee will be ineligible to regain it. Licensees authorized to use one megahertz or less of the 800 MHz commercial aviation air-ground spectrum allocation are not subject to the requirements in this section.

(a) ''Substantial service'' is defined as service that is sound, favorable, and substantially above a level of mediocre service that just might minimally warrant renewal.

(b) Each commercial aviation air-ground system subject to the requirements of this section must demonstrate substantial service within 5 years after grant of the authorization. Substantial service may be demonstrated by, but is not limited to, either of the following ''safe harbor'' provisions:

(1) Construction and operation of 20 ground stations, with at least one ground station located in each of the 10 Federal Aviation Administration regions; or,

(2) Provision of service to the airspace of 25 of the 50 busiest airports (as measured by annual passenger boardings).

[70 FR 19310, Apr. 13, 2005]

§ 22.877 Unacceptable interference to Part 90 non-cellular 800 MHz licensees from commercial aviation air-ground systems.

The definition of unacceptable interference to non-cellular part 90 licensees in the 800 MHz band from commercial aviation air-ground systems is the same as the definition set forth in § 22.970 which is applicable to Cellular Radiotelephone Service systems.

[70 FR 19311, Apr. 13, 2005]

§ 22.878 Obligation to abate unacceptable interference.

This section applies only to commercial aviation ground stations transmitting in the 849–851 MHz band, other than commercial aviation ground stations operating under the authority of a license originally granted prior to January 1, 2004.

(a) *Strict responsibility.* Any licensee who, knowingly or unknowingly, directly or indirectly, causes or contributes to causing unacceptable interference to a non-cellular part 90 licensee in the 800 MHz band, as defined in § 22.877, shall be strictly accountable to abate the interference, with full cooperation and utmost diligence, in the shortest time practicable. Interfering licensees shall consider all feasible interference abatement measures, including, but not limited to, the remedies specified in the interference resolution procedures set forth in § 22.879. This strict responsibility obligation applies to all forms of interference, including out-of-band emissions and intermodulation.

(b) *Joint and Several responsibility.* If two or more licensees, whether in the commercial aviation air-ground radiotelephone service or in the Cellular Radiotelephone Service (see § 22.971), knowingly or unknowingly, directly or indirectly, cause or contribute to causing unacceptable interference to a non-cellular part 90 licensee in the 800 MHz band, as defined in § 22.877, such licensees shall be jointly and severally responsible for abating interference, with full cooperation and utmost diligence, in the shortest practicable time.

(1) This joint and several responsibility rule requires interfering licensees to consider all feasible interference abatement measures, including, but not limited to, the remedies specified in the interference resolution procedures set forth in § 22.879(c). This joint and several responsibility rule applies to all forms of interference, including out-of-band emissions and intermodulation.

(2) Any licensee that can show that its signal does not directly or indirectly cause or contribute to causing unacceptable interference to a non-cellular part 90 licensee in the 800 MHz band, as defined in § 22.877, shall not be held responsible for resolving unacceptable interference. Notwithstanding, any licensee that receives an interference complaint from a public safety/CII licensee shall respond to such complaint consistent with the interference resolution procedures set forth in § 22.879.

[70 FR 19411, Apr. 13, 2005]

§ 22.879 Interference resolution procedures.

This section applies only to commercial aviation ground stations transmitting in the 849–851 MHz band, other than commercial aviation ground stations operating under the authority of a license originally granted prior to January 1, 2004.

(a) *Initial notification.* Commercial aviation air-ground system licensees may receive initial notification of interference from non-cellular part 90 licensees in the 800 MHz band pursuant to § 90.674(a) of this chapter.

(1) Commercial aviation air-ground system licensees shall join with part 90 ESMR licensees and Cellular Radiotelephone Service licensees in utilizing an electronic means of receiving the initial notification described in § 90.674(a) of this chapter. See § 22.972.

(2) Commercial aviation air-ground system licensees must respond to the initial notification described in § 90.674(a) of this chapter as soon as possible and no later than 24 hours after receipt of notification from a part 90 public safety/CII licensee. This response time may be extended to 48 hours after receipt from other part 90 non-cellular licensees provided affected communications on these systems are not safety related.

(b) *Interference analysis.* Commercial aviation air-ground system licensees—who receive an initial notification described in § 90.674(a) of this chapter—shall perform a timely analysis of the interference to identify the possible source. Immediate on-site visits may be conducted when necessary to complete timely analysis. Interference analysis must be completed and corrective action initiated within 48 hours of the initial complaint from a part 90 public safety/CII licensee. This response time may be extended to 96 hours after the initial complaint from other part 90 non-cellular licensees provided affected communications on these systems are not safety related. Corrective action may be delayed if the affected licensee agrees in writing (which may be, but is not required to be, recorded via e-mail or other electronic means) to a longer period.

(c) *Mitigation steps.* Any commercial aviation air-ground system that is responsible for causing unacceptable interference to non-cellular part 90 licensees in the 800 MHz band shall take affirmative measures to resolve such interference.

(1) Commercial aviation air-ground system licensees found to contribute to unacceptable interference, as defined in § 22.877, shall resolve such interference in the shortest time practicable. Commercial aviation air-ground system licensees must provide all necessary test apparatus and technical personnel skilled in the operation of such equipment as may be necessary to determine the most appropriate means of timely eliminating the interference. However, the means whereby interference is abated or the technical parameters that may need to be adjusted is left to the discretion of the commercial aviation air-ground system licensee, whose affirmative measures may include, but not be limited to, the following techniques:

(i) Increasing the desired power of the public safety/CII signal;

(ii) Decreasing the power of the commercial aviation air-ground system signal;

(iii) Modifying the commercial aviation air-ground system antenna height;

(iv) Modifying the commercial aviation air-ground system antenna characteristics;

(v) Incorporating filters into the commercial aviation air-ground system transmission equipment;

(vi) Changing commercial aviation air-ground system frequencies; and

(vii) Supplying interference-resistant receivers to the affected public safety/CII licensee(s). If this technique is

used, in all circumstances, commercial aviation air-ground system licensees shall be responsible for all costs thereof.

(2) Whenever short-term interference abatement measures prove inadequate, the affected part 90 non-cellular licensee shall, consistent with but not compromising safety, make all necessary concessions to accepting interference until a longer-term remedy can be implemented.

(3) When a part 90 public safety licensee determines that a continuing presence of interference constitutes a clear and imminent danger to life or property, the licensee causing the interference must discontinue the associated operation immediately, until a remedy can be identified and applied. The determination that a continuing presence exists that constitutes a clear and imminent danger to life or property, must be made by written statement that:

(i) Is in the form of a declaration, notarized affidavit, or statement under penalty or perjury, from an officer or executive of the affected public safety licensee;

(ii) Thoroughly describes the basis of the claim of clear and imminent danger;

(iii) Was formulated on the basis of either personal knowledge or belief after due diligence;

(iv) Is not proffered by a contractor or other third party; and,

(v) Has been approved by the Chief of the Public Safety and Homeland Security Bureau or other designated Commission official. Prior to the authorized official making a determination that a clear and imminent danger exists, the associated written statement must be served by hand-delivery or receipted fax on the applicable offending licensee, with a copy transmitted by the fastest available means to the Washington, DC office of the Commission's Public Safety and Homeland Security Bureau.

[70 FR 19311, Apr. 13, 2005, as amended at 71 FR 69038, Nov. 29, 2006]

§ 22.880 Information exchange.

(a) *Prior notification.* Public safety/CII licensees may notify a commercial aviation air-ground system licensee that they wish to receive prior notification of the activation or modification of a commercial aviation air-ground system ground station site in their area. Thereafter, the commercial aviation air-ground system licensee must provide the following information to the public safety/CII licensee at least 10 business days before a new ground station is activated or an existing ground station is modified:

(1) Location;

(2) Effective radiated power;

(3) Antenna manufacturer, model number, height above ground level and up tilt angle, as installed;

(4) Channels available for use.

(b) *Purpose of prior notification.* The prior notification of ground station activation or modification is for informational purposes only: public safety/CII licensees are not afforded the right to accept or reject the activation of a proposed ground station or to unilaterally require changes in its operating parameters. The principal purposes of prior notification are to:

(1) Allow a public safety licensee to advise the commercial aviation air-ground system licensee whether it believes a proposed ground station will generate unacceptable interference;

(2) Permit commercial aviation air-ground system licensee(s) to make voluntary changes in ground station parameters when a public safety licensee alerts them to possible interference; and

(3) Rapidly identify the source if interference is encountered when the ground station is activated.

[70 FR 19312, Apr. 13, 2005]

§ 22.881 Air-Ground Radiotelephone Service subject to competitive bidding.

Mutually exclusive initial applications for general aviation Air-Ground Radiotelephone Service licenses and mutually exclusive initial applications for commercial Air-Ground Radiotelephone Service licenses are subject to competitive bidding. The general competitive bidding procedures set forth in part 1, subpart Q, of this chapter will apply unless otherwise provided in this subpart.

[70 FR 76417, Dec. 27, 2005]

§ 22.882 Designated entities.

(a) Eligibility for small business provisions in the commercial Air-Ground Radiotelephone Service.

(1) A small business is an entity that, together with its affiliates, its controlling interests and the affiliates of its controlling interests, has average gross revenues that are not more than $40 million for the preceding three years.

(2) A very small business is an entity that, together with its affiliates, its controlling interests and the affiliates of its controlling interests, has average gross revenues that are not more than $15 million for the preceding three years.

(b) Bidding credits in the commercial Air-Ground Radiotelephone Service.

(1) A winning bidder that qualifies as a small business, as defined in this section, or a consortium of small businesses may use a bidding credit of 15 percent, as specified in §1.2110(f)(2)(iii) of this chapter, to lower the cost of its winning bid on a commercial Air-Ground Radiotelephone Service license.

(2) A winning bidder that qualifies as a very small business, as defined in this section, or a consortium of very small businesses may use a bidding credit of 25 percent, as specified in §1.2110(f)(2)(ii) of this chapter, to lower the cost of its winning bid on a commercial Air-Ground Radiotelephone Service license.

[70 FR 76417, Dec. 27, 2005]

Subpart H—Cellular Radiotelephone Service

§ 22.900 Scope.

The rules in this subpart govern the licensing and operation of cellular radiotelephone systems. Licensing and operation of these systems are also subject to rules elsewhere in this part that apply generally to the Public Mobile Services. In case of conflict, however, the rules in this subpart govern.

§ 22.901 Cellular service requirements and limitations.

The licensee of each cellular system is responsible for ensuring that its cellular system operates in compliance with this section.

(a) Each cellular system must provide either mobile service, fixed service, or a combination of mobile and fixed service, subject to the requirements, limitations and exceptions in this section. Mobile service provided may be of any type, including two way radiotelephone, dispatch, one way or two way paging, and personal communications services (as defined in part 24 of this chapter). Fixed service is considered to be primary service, as is mobile service. When both mobile and fixed service are provided, they are considered to be co primary services. In providing cellular services, each cellular system may incorporate any technology that meets all applicable technical requirements in this part.

(b) Until February 18, 2008, each cellular system that provides two-way cellular mobile radiotelephone service must—

(1) Maintain the capability to provide compatible analog service (''AMPS'') to cellular telephones designed in conformance with the specifications contained in sections 1 and 2 of the standard document ANSI TIA/EIA–553–A–1999 Mobile Station—Base Station Compatibility Standard (approved October 14, 1999); or, the corresponding portions, applicable to mobile stations, of whichever of the predecessor standard documents was in effect at the time of the manufacture of the telephone. This incorporation by reference was approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. Copies of the standard may be purchased from Global Engineering Documents, 15 Inverness Way East, Englewood, CO 80112–5704 (or via the internet at *http://global.ihs.com)*. Copies are available for inspection at the Federal Communications Commission, 445 12th Street, SW, Washington, DC 20554, or at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202–741–6030, or go to: *http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html.*

(2) Provide AMPS, upon request, to subscribers and roamers using such cellular telephones while such subscribers