otherwise be considered as technically substandard. Further, the requirements of paragraphs (a)(5), (b)(2), (c)(2), and (d)(2) of §73.1215 concerning the scale ranges of transmission system indicating instruments are waived for PSRA and PSSA operation except for the radio frequency ammeters used in determining antenna input power.

(1) A station having an antenna monitor incapable of functioning at the authorized PSRA and PSSA power when using a directional antenna shall take the monitor reading using an unmodulated carrier at the authorized daytime power immediately prior to commencing PSRA or PSSA operations. Special conditions as the FCC may deem appropriate may be included for PSRA or PSSA to insure operation of the transmitter and associated equipment in accordance with all phases of good engineering practice.

[56 FR 64860, Dec. 12, 1991; 57 FR 43290, Sept. 18, 1992, as amended at 58 FR 27950, May 12, 1993]

§ 73.127 Use of multiplex transmission.

The licensee of an AM broadcast station may use its AM carrier to transmit signals not audible on ordinary consumer receivers, for both broadcast and non-broadcast purposes subject to the following requirements:

(a) Such use does not disrupt or degrade the station's own programs or the programs of other broadcast stations.

(b) AM carrier services that are common carrier in nature are subject to common carrier regulation. Licensees operating such services are required to apply to the FCC for the appropriate authorization and to comply with all policies and rules applicable to the service. Responsibility for making the initial determinations of whether a particular activity is common carriage rests with the AM station licensee. Initial determinations by licensees are subject to FCC examination and may be reviewed at the FCC's discretion. AM carrier services that are private carrier in nature must notify the Licensing Division of the Private Radio Bureau at Gettysburg, Pennsylvania 17325, by letter, prior to initiating service certifying compliance with 47 CFR parts 90 and 94.

(c) AM carrier services are of a secondary nature under the authority of the AM station authorization, and the authority to provide such communications services may not be retained or transferred in any manner separate from the station's authorization. The grant or renewal of an AM station permit or license is not furthered or promoted by proposed or past service. The permittee or licensee must establish that the broadcast operation is in the public interest wholly apart from the subsidiary communications services provided.

(d) The station identification, delayed recording, and sponsor identification announcements required by §§73.1201, 73.1208, and 73.1212 are not applicable to leased communications services transmitted via services that are not of a general broadcast program nature.

(e) The licensee or permittee must retain control over all material transmitted in a broadcast mode via the station's facilities, with the right to reject any material that it deems inappropriate or undesirable.

(f) Installation of the multiplex transmitting equipment must conform with the requirements of §73.1690(e).

[47 FR 25345, June 11, 1982, as amended at 49 FR 34015, Aug. 28, 1984; 51 FR 41629, Nov. 18, 1986; 51 FR 44478, Dec. 10, 1986]

§ 73.128 AM stereophonic broadcasting.

(a) An Am broadcast station may, without specific authority from the FCC, transmit stereophonic programs upon installation of type accepted stereophonic transmitting equipment and the necessary measuring equipment to determine that the stereophonic transmissions conform to the modulation characteristics specified in paragraphs (b) and (c) of this section. Stations transmitting stereophonic programs prior to March 21, 1994 may continue to do so until March 21, 1995 as long as they continue to comply with the rules in effect prior to March 21, 1994.

(b) The following limitations on the transmitted wave must be met to insure compliance with the occupied bandwidth limitations, compatibility

with AM receivers using envelope detectors, and any applicable international agreements to which the FCC is a party:

(1) The transmitted wave must meet the occupied bandwidth specifications of §73.44 under all possible conditions of program modulation. Compliance with requirement shall be demonstrated either by the following specific modulation tests or other documented test procedures that are to be fully described in the application for type acceptance and the transmitting equipment instruction manual. (See §2.983(d)(8) and (j)).

(i) Main channel (L + R) under all conditions of amplitude modulations for the stereophonic system but not exceeding amplitude modulation on negative peaks of 100%.

(ii) Stereophonic (L−R) modulated with audio tones of the same amplitude at the transmitter input terminals as in paragraph (b)(i) of this section but with the phase of either the L or R channel reversed.

(iii) Left and Right Channel only, under all conditions of modulation for the stereophonic system in use but not exceeding amplitude modulation on negative peaks of 100%.

(c) Effective on December 20, 1994, stereophonic transmissions shall conform to the following additional modulation characteristics:

(1) The audio response of the main (L + R) channel shall conform to the requirements of the ANSI/EIA–549–1988, NRSC–1 AM Preemphasis/Deemphasis and Broadcast Transmission Bandwidth Specifications (NRSC–1).

(2) The left and right channel audio signals shall conform to frequency response limitations dictated by ANSI/EIA–549–1988.

(3) The stereophonic difference (L−R) information shall be transmitted by varying the phase of the carrier in accordance with the following relationship:

$$\phi = \tan^{-1}\left(\frac{m(L(t)-R(t))}{1+m(L(t)+R(t))}\right)$$

where:

L(t) = audio signal left channel,
R(t) = audio signal right channel,
m = modulation factor, and
$m_{peak}(L(t) + R(t)) = 1$ for 100% amplitude modulation,
$m_{peak}(L(t) - R(t)) = 1$ for 100% phase modulation.

(4) The carrier phase shall advance in a positive direction when a left channel signal causes the transmitter envelope to be modulated in a positive direction. The carrier phase shall likewise retard (negative phase change) when a right channel signal causes the transmitter envelope to be modulated in a positive direction. The phase modulation shall be symmetrical for the condition of difference (L−R) channel information sent without the presence of envelope modulation.

(5) Maximum angular modulation, which occurs on negative peaks of the left or right channel with no signal present on the opposite channel (L(t)=−0.75, R(t) = 0, or R(t)=−0.75, L(t) = 0) shall not exceed 1.25 radians.

(6) A peak phase modulation of ±0.785 radians under the condition of difference (L−R) channel modulation and the absence of envelope (L + R) modulation and pilot signal shall represent 100% modulation of the difference channel.

(7) The composite signal shall contain a pilot tone for indication of the presence of stereophonic information. The pilot tone shall consist of a 25 Hz tone, with 3% or less total harmonic distortion and a frequency tolerance of ± 0.1 H_2, which modulates the carrier phase ± 0.05 radians peak, corresponding to 5% L−R modulation when no other modulation is present. The injection level shall be 5%, with a tolerance of + 1, −1%.

(8) The composite signal shall be described by the following expression:

$$E_c = A_c\left[1 + m\sum_{n=1}^{\infty} C_{sn}\cos\left(\omega_{sn}\ t + \phi_{sn}\right)\right]\cdot$$

$$\cos\left[\omega_c t + \tan^{-1}\frac{m\sum_{n=1}^{\infty} C_{dn}\cos\left(\omega_{dn}t + \phi_{dn}\right) + .05\sin 50\pi t}{1 + m\sum_{n=1}^{\infty} C_{sn}\cos\left(\omega_{sn}t + \phi_{sn}\right)}\right]$$

where:

A = the unmodulated carrier voltage

m = the modulation index

C_{sn} = the magnitude of the nth term of the sum signal

C_{dn} = the magnitude of the nth term of the difference signal

ω_{sn} = the nth order angular velocity of the sum signal

ω_{dn} = the nth order angular velocity of the difference signal

ω_c = the angular velocity of the carrier

$$\phi_{sn} = \text{the angle of the nth order term} = \tan^{-1}\left[\frac{B_{sn}}{A_{sn}}\right]$$

$$\phi_{dn} = \text{the angle of the nth order term} = \tan^{-1}\left[\frac{B_{dn}}{A_{dn}}\right]$$

A_{sn} and B_{sn} are the n^{th} sine and cosine coefficients of C_{sn}

A_{dn} and B_{dn} are the n^{th} sine and cosine coefficients of C_{dn}

[58 FR 66301, Dec. 20, 1993]

§ 73.132 Territorial exclusivity.

No licensee of an AM broadcast station shall have any arrangement with a network organization which prevents or hinders another station serving substantially the same area from broadcasting the network's programs not taken by the former station, or which prevents or hinders another station serving a substantially different area from broadcasting any program of the network organization: *Provided, however,* That this section does not prohibit arrangements under which the station is granted first call within its primary service area upon the network's programs. The term ''network organization'' means any organization originating program material, with or without commercial messages, and furnishing the same to stations interconnected so as to permit simultaneous broadcast by all or some of them. However, arrangements involving only stations under common ownership, or only the rebroadcast by one station or programming from another with no compensation other than a lump-sum payment by the station rebroadcasting, are not considered arrangements with