

(iii) The identification signal must employ the International Morse Code and consist of three letters.

(iv) The identification signal must be transmitted at a speed corresponding to approximately seven words per minute, and must be repeated at approximately equal intervals, not less than six times per minute. When SDF transmission is not available for operational use, including periods of removal of navigational components or during maintenance or test transmissions, the identification signal must be suppressed.

(b) It must be shown during ground inspection of the design features of the equipment that there will not be conditions that will allow unsafe operations because of component failure or deterioration.

(c) The monitor must be checked periodically during the in-service test evaluation period for calibration and stability. These tests, and ground checks of SDF radiation characteristics must be conducted in accordance with the maintenance manual required by § 171.115(c) and must meet the standards and tolerances contained in § 171.111(j).

(d) The monitor system must provide a warning to the designated control point(s) when any of the conditions of § 171.111(j) occur, within the time periods specified in that paragraph.

(e) Flight inspection to determine the adequacy of the facility's operational performance and compliance with applicable performance requirements must be conducted in accordance with the "U.S. Standard Flight Inspection Manual." Tolerances contained in the U.S. Standard Flight Inspection Manual, section 217, must be complied with except as stated in paragraph (f) of this section.

(f) Flight inspection tolerances specified in section 217 of the "U.S. Standard Flight Inspection Manual" must be complied with except as follows:

(1) *Course sector width.* The nominal course sector width must be 6°. When an operational advantage can be achieved, a nominal course sector width of 12° may be established. Course sector width must be adjusted and maintained within the limits of ±17 percent of the nominal value.

(2) *Course alignment.* The mean course line must be adjusted and maintained within the limits of ±10 percent of the nominal course sector width.

(3) *Course structure.* Course deviations due to roughness, scalloping, or bends must be within the following limitations:

(i) *Front course.* (a) Course structure from 18 miles from runway threshold to Point A must not exceed ±40 microamperes;

(b) Point A to Point A-1—linear decrease from not more than ±40 microamperes at Point A to not more than ±20 microamperes at Point A-1;

(c) Point A-1 to Missed Approach Point—not more than ±20 microamperes;

(d) Monitor tolerances: width ±17 percent of nominal; alignment—±10 percent of nominal course sector width.

(ii) *Back course.* (a) Course structure 18 miles from runway threshold to 4 miles from runway threshold must not exceed ±40 microamperes. Four miles to 1 mile from R/W must not exceed ±40 microamperes decreasing to not more than ±20 microamperes, at a linear rate.

(b) Monitor tolerances: width—±17 percent of nominal; alignment—±10 percent of nominal course sector width.

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#### § 171.111 Ground standards and tolerances.

Compliance with this section must be shown as a condition to approval and must be maintained during operation of the SDF.

(a) *Frequency.* (1) The SDF must operate on odd tenths or odd tenths plus a twentieth MHz within the frequency band 108.1 MHz to 111.95 MHz. The frequency tolerance of the radio frequency carrier must not exceed plus or minus 0.002 percent.

(2) The modulating tones must be 90 Hz and 150 Hz within ±2.5 percent.

(3) The identification signal must be 1020 Hz within ±50 Hz.

(4) The total harmonic content of the 90 Hz tone must not exceed 10 percent.

(5) The total harmonic content of the 150 Hz tone must not exceed 10 percent.